Science to Action: Engagement in Research

Summary of 2019 Climate Change Research Symposium

CALIFORNIA STRATEGIC GROWTH COUNCIL

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2019 Climate Change Research Symposium

ENGAGEMENT IN RESEARCH

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BACKGROUND

The California Strategic Growth Council (SGC) held its inaugural Climate Change Research Symposium (the "Symposium") on November 5, 2019. This Symposium focused on actionable science – research informed by meaningful community engagement, referred to throughout this report as "Science to Action." The event highlighted SGC's vision for climate change research and what it can achieve in California. This summary report includes an overview of the day, as well as appendices containing additional information provided to participants.

THE SYMPOSIUM:

» Spotlighted *meaningful engagement in research*, shared best practices and examples, and featured discussions with community-based organizations, other stakeholders, and scientists.

» Emphasized Science to Action and made the link to how meaningful engagement enables actionable science.

» Provided insights to help participants build momentum around climate action through partnership-based research approaches.

» Built knowledge in California's research community on engagement best-practices and "how-tos" by showcasing what scientists, local governments, non-profits, and tribes are doing in this space, and importantly, by facilitating direct discussions on these topics among representatives from community-based organizations (CBOs) and governments, as well as other community leaders.

» Demonstrated how research can advance equity and economic opportunity, along with climate action, through engagement in research.

To achieve these objectives, the Symposium brought together diverse participants from around California to engage with each other in active dialogue and learning.

Meaningful solutions to climate change rely on people from diverse backgrounds, sectors, education, lived experiences, and disciplines taking collaborative action based on honest communication about community priorities, needs, and capacity.

More than 200 people participated, representing a balanced mix of scientists, community leaders (including representatives of local and regional governments, tribal governments, community-based organizations, non-profits, and other organizations that partner – or seek to partner – on research projects), and State of California staff. SGC used assigned seating at round tables to facilitate discussion among representatives from all sectors, and participants remained with the same tablemates throughout the day to support building trust and a robust cross-sector dialogue.

This report focuses particularly on outcomes reported by participants themselves, through worksheets collected at the end of the event, and online polling conducted throughout the day.

Participants shared a common understanding that grounded the discussions: Californians are already experiencing climate change impacts, and science is an appropriate way to understand and address the challenges of a changing climate. However, the Symposium and its participants also highlighted that science (as understood in Western culture) on its own is not enough to effectively tackle climate change. Scientists

and researchers cannot solve this problem alone, and neither can the State of California or other governments. Meaningful solutions to climate change rely on people from diverse backgrounds, sectors, education, lived experiences, and disciplines taking collaborative action based on honest communication about community priorities, needs, and capacity. The Symposium sought to model this type of collaboration.

Given the need to act together, participants also discussed that Western scientific approaches, often separated from community participation, are not enough to address the scale of the challenges California faces. Research endeavors must include those who can take action in their communities or sectors, and incorporate other ways of understanding the world, for instance through traditional ecological knowledge and indigenous knowledge of places.

Finally, in alignment with SGC's mission, participants highlighted that acting on climate change demands addressing structural inequities in California and beyond. Climate change is already affecting communities in California – especially those who have been left behind by past purposefully inequitable, racist policies. These communities have benefited the least from California's economic growth and are the least equipped to respond to climate disruptions such as sea-level rise, higher temperatures, and increasingly severe wildfires. Solving the climate crisis without perpetuating existing inequities demands that scientists and policymakers form strong partnerships with these communities.

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ACKNOWLEDGMENTS

Achieving the goals of the Symposium would not have been possible without the participation of many individuals and organizations, especially the team at Climate Resolve, who helped plan and execute the event, as well as the Symposium sponsors, whose support enabled SGC to host a more equitable event. SGC also recognizes the leadership and contributions of the Program Committee in scoping the event; these organizations and individuals provided creative ideas and key support to advance our shared goals for California:

- American Geophysical Union's Thriving Earth Exchange: *Melissa Goodwin*, *Dr. Raj Pandya*
- California Council on Science and Technology: *Dr. Amber Mace*
- California Department of Conservation: *Sarah Rubin*
- California Environmental Protection Agency: *Yana Garcia*, *Vanessa Galaviz*
- Climate Resolve: *Jonathan Parfrey*
- Greenlining Institute: *Sona Mohnot*
- Institute for Local Government: *Karalee Browne*
- Intertribal Agriculture Council: *Keir Johnson-Reyes*
- Leadership Counsel for Justice and Accountability: *Grecia Elenes*
- Liberty Hill Foundation: *Ben Russak*
- North Coast Resource Partnership: *Karen Gaffney*

SGC also thanks each speaker and facilitator who shared their valuable time and expertise with the participants, helping to ground the workshops and dialogue in a shared understanding and respect.

Finally, we offer huge thanks to the numerous State staff and other partners who volunteered to help facilitate discussions, brainstorm and scope various parts of the agenda, and send invitations to diverse participants: *Karen Ben-Moshe*, *Julia Caplan, Lazaro Cardenas*, *Robert Chester*, *Woodrow Covington*, *Elena Davert*, *Monique Davis*, *Mariana Estrada*, *Juliette Finzi-Hart*, *Thomas Gates* and team at the California Energy Commission, *Colin Gutierrez*, *Bruce Gwynne*, *Elizabeth Hessom*, *Kristina von Hoffman*, *Meredith Lee*, *Sandra Lupien*, *Ena Lupine*, *Beth-Rose Middleton*, *Meredith Milet*, *Holly Nickel*, *Monica Palmeira*, *Michael Parada*, *Paloma Pavel*, *TJ Reed*, *Deldi Reyes*, *Sarah Risher*, *Sarah Rubin*, and *Tamara Wall*.

Your support was truly invaluable, and without your input and time, the Symposium would not have been a success.

EVENT STRUCTURE AND AGENDA

The Symposium balanced keynote speeches and panels with active participation by all attendees through roundtable discussions, live polling, and an afternoon workshop on engagement. Ground rules developed by the Program Committee and facilitators with advance input from participants guided discussions throughout the day (see Appendix A).

Participants spent the first half of the day together in one hall for a keynote address, two panels, and lunch. In order to ensure a balanced mix of scientists and representatives from local or regional governments, tribes, non-governmental organizations (advocacy organizations, community-based organizations), the private sector, and State agencies, SGC curated seating using color-coded nametags that corresponded with positions at each round table. A trained facilitator sat at each table, and participants stayed with their tablemates throughout the day.

MORNING PROGRAM: KEYNOTES PANELS, BEST-PRACTICES PANEL, AND DISCUSSION

KEYNOTE PANEL

Moderator

» **Dr. Manuel Pastor**: Director – University of Southern California Program for Environmental and Regional Equity; Center for the Study of Immigrant Integration

Panelists

» **Carl Anthony**: Co-founder – Breakthrough Communities Project; former President of Earth Island Institute

» **Valentin Lopez**: Chairman – the Amah Mutsun Tribal Band

This panel discussion provided high-level framing and key messages for the entire day. Speakers discussed the concept of privilege in scientific research, how research has historically left out tribes and other communities, and how these particular communities often face greater dangers from climate change. The discussion provided perspective on the past, helping to ground participants in a shared understanding that supported a solutions-oriented, relationship-building approach to the rest of the day.

Both panelists discussed the importance of relationships – human-to-human, and human-to-Earth – and how a history of dehumanization and exploitation is mirrored in human relationships with nature. They also highlighted that different people and communities define and use knowledge differently – an important concept that those engaging in partnership-based research must both understand and integrate into their approach. Both research and solutions must allow people and communities to approach problems from their own cultural and geographic contexts – and researchers must meet them where they are. Mr. Anthony discussed historic exploitation and how people of color were stolen from their native lands, while indigenous peoples had their land stolen from them. Chairman Lopez stressed the role of spirituality in indigenous knowledge, and how Western views

of science typically exclude spiritual ways of knowing the world. Throughout the keynote panel, a core theme emerged: Approaches to science must adapt and cannot rely on knowledge trickling down to community actors; all must come together, recognize different perspectives, existing inequities, strengths, and knowledge bases, and work together on common solutions.

Discussion

After the keynote panel, participants had an opportunity to discuss what they heard and share their own perspectives at their tables, with a focus on barriers and challenges to partnership-based research. The goal of this morning conversation was to build trust to prepare the cross-sector participants to move into the solutions-focused afternoon workshop. Major takeaways from participant dialogue, including this breakout and the afternoon workshop, are included in the "Takeaways and Recommendations from Participants" section (page 10).

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PANEL: SUCCESSES AND BEST PRACTICES IN RESEARCH ENGAGEMENT

Moderator

» **Dr. Martha Matsuoka**: Executive Director – Urban & Environmental Policy Institute, Occidental College

Panelists

» **Dr. Megan Jennings**: Co-Director – Institute for Ecological Monitoring & Management, San Diego State University

» **Rafael Guzman**: Assistant City Manager – City of Riverside

» **Amee Raval**: Senior Policy Researcher – Asian Pacific Environmental Network (APEN)

» **Dr. Don Hankins:** Professor and Indigenous Prescribed Fire Expert – California State University, Chico

This panel featured scientists and community leaders who discussed the value of engaging communities directly in research that affects their lives. Speakers provided examples of successes and best practices for how to engage meaningfully in order to advance a research project. Key messages from all speakers emphasized that relationships based on trust must underpin research partnerships in order to ensure equitable and actionable outcomes. Building these relationships requires listening, honest communication, early and frequent engagement, and building equitable approaches into the partnership from the beginning. These same themes permeated the participant feedback featured later in this report.

Dr. Megan Jennings highlighted examples from her own research of successful partnerships with non-research organizations and communities, including rural communities and tribes. Amee Raval shared successes she and APEN have had working with researchers, and how an equitable partnership uplifted her capacity along with the strengths of APEN and the communities it represents. Rafael Guzman discussed how the City of Riverside, as a local government, embraces relationships with scientists to advance sustainability goals for the city. Dr. Don Hankins referenced Chairman Lopez' remarks, stressing the importance of indigenous knowledge and how it can be integrated with Western scientific approaches, particularly for land management.

AFTERNOON WORKSHOP

WORKSHOP GOALS AND STRUCTURE

Participants spent the afternoon in a workshop based on the Thriving Earth Exchange model to support community and partner-driven science.

Insights shared by speakers earlier in the day informed the workshop, and its goals were to allow scientists and community leaders to:

» Build relationships;

» Deepen their understanding of local climate impacts and concerns; and

» Identify ways that science, research, community knowledge, and community strengths can combine to help California communities set and meet community-driven climate goals.

Participants stayed with the same tablemates throughout the day to in order to support robust cross-sector dialogue; each workshop group had a mix of scientists, community and government representatives, and other stakeholders.

Facilitators guided each group through the workshop exercise. In the interest of maximizing the flow of information and supporting the learning of all participants, facilitators encouraged the scientists in each group to practice listening actively while community leaders discussed their communities' priorities, strengths, and needs. Then, facilitators asked scientists to consider how research and science could advance the specific priorities shared and complement those specific strengths. Finally, facilitators invited community leaders to discuss with scientists the value of research in addressing their local challenges and how research might build on existing strengths and capacity in their communities. Further details on the workshop structure, specifically the participant handouts used and ground rules for the discussions, appear in Appendix B.

SGC structured the day hoping that this workshop structure, and the Symposium as a whole, provided a starting point from which to build dialogue and new partnerships between participants from various disciplines and organizations to facilitate future work.

WORKSHOP OUTCOMES

SGC expected outcomes to vary from participant to participant and from table to table. The primary goal envisioned by SGC was for participants to listen to each other and make connections. A summary of participants' takeaways and recommendations appears in the next section. Online polling conducted immediately following the workshop indicated that many participants made new contacts, cultivated ideas about how they might together, and are interested in building innovative, meaningful partnerships in the future. Written submissions also revealed:

» Many participants enjoyed meeting new people, the diversity of table members, and hearing and learning from people with different perspectives.

» Others called out the honest and rich conversation, including time to discuss uncomfortable topics, one-on-one conversations, and opportunities to take deeper dives, dialogue between tribal representatives and scientists, and the ability to share their own experiences.

» Many found actively brainstorming to help each other solve shared problems both rewarding and revealing of common ground between diverse participants.

» Participants highlighted that they enjoyed listening to each other and valued that the Symposium promoted inclusivity and mutual appreciation of one another.

Self-reported online polling takeaways from participants were divided between those identifying as community leaders, and those identifying as scientists. The results demonstrate the effectiveness of the workshop structure for facilitating dialogue and new partnership ideas.

» Nearly all **community leaders** who responded reported that they made a new contact, and have a new idea for how science can help address a community priority. More than half came away with a new project idea and plans to partner with a scientist in the future.

» Nearly all **scientists** who responded reported that they also made a new contact, learned something new from a community leader, and have a new project idea. More than half also plan to conduct partnership-based research.

This wordcloud depicts responses from participants on what they most enjoyed about the afternoon workshop.

TAKEAWAYS AND RECOMMENDATIONS FROM PARTICIPANTS

The following information comes directly from the participants in the Climate Change Research Symposium. After the breakout discussion and workshop, SGC used online polling to elicit immediate reactions from participants. During the workshop, participants had the option of using a worksheet to summarize their discussions or summarizing information with their facilitator. The following information synthesizes all the materials SGC received from participants.

This information may be useful to those seeking to understand meaningful engagement in research – common challenges, best practices, and strengths California communities can bring to the table.

COMMON BARRIERS AND CHALLENGES TO PARTNERSHIP-BASED RESEARCH, IDENTIFIED ACROSS PARTICIPANT GROUPS

1. **Resources, funding, and existing structures** were identified most commonly as significant barriers or challenges.

» Community members/CBOs/others participating in research should be paid for their time and expertise.

» Institutional structures and incentives do not support engaged research, i.e., funding community partners through existing research grants is difficult; validation of academic hard to support community partners with funding; academic validation research comes primarily through peer review.

» Similarly, organizational structures can be a challenge for governments as well as research institutions. Systems are not set up for community engagement. Bureaucracy and administrative red tape can be a barrier.

» Multi-year funding is preferred so that community priorities can guide outcomes; promotes long-term relationships and solutions.

2. **Lack of trust and relationships** were similarly identified as a very common barrier or challenge.

» To build trust, researchers must value different types of input.

» Communities may distrust government intent and interact with government based on that distrust.

» Insensitivity and/or lack of awareness to past trauma, historical inequities, etc. can be a barrier to building trust.

3. **Timelines** are a related and common challenge for both scientists and community leaders.

» Building relationships and trust requires time.

» Timelines frequently do not align between the scientific process, the time it takes to see results, and more immediate community needs.

» A mismatch often exists between grant requirements and engagement, particularly around timelines. The structure of funding in terms of time and expenses can be a challenge.

» For communities or community organizations, time constraints can make engagement hard on top of other job priorities.

4. **Lack of communication and understanding directly affects trust and relationships**. Input from participants on improving communication and understanding follows:

» Language barriers are a huge challenge, even if both parties are speaking English – messaging and learning through listening is important.

» Shared vision is critical, including establishing clear expectations and value for everyone participating. Similarly, context is important – research must connect to people's problems, which requires knowledge of cultural assumptions and value systems.

» It is important to consider proper storytelling and knowledge of history and power.

» Scientific translation is often a barrier, i.e., communicating which data can be used, and effectively disseminating results.

» Another barrier is reconciling/integrating "facts vs. feelings," or spirituality and science.

5. **Participants identified the lack of meaningful engagement and partnerships as an ongoing challenge**. Common suggestions on this topic include:

» Researchers should engage community organizations, representatives, and/or members in all stages of research – starting with scoping and planning.

» Researchers and others often do not value community expertise, but they should recognize, value, an incorporate into research local knowledge

» Ensure the engagement is not exploitative, i.e., not just extracting information from community.

» Recognize power dynamics; i.e., who is running the meeting.

» The effort of coordination and time required can be a challenge.

» Education on all sides is important, to ensure both sides see value (what makes science credible, etc.).

» Long-term solutions require empowered communities.

6. **Science to action through transfer of knowledge and translating data in ways that are useful to communities is another challenge participants raised frequently**. This is directly tied into lack of meaningful engagement and communication issues that are described above. Detail shared on this topic includes:

» Scientists not knowing what a community needs, or assuming what a community needs, can result in this problem.

» A bridge is needed between communities and researchers, as well as bridges between scientific disciplines. The science must be converted to practical conversations and outcomes.

» By failing to value lived-experience, scientists might miss opportunities to incorporate community-available information into their research. Scientists must be careful not to conflate research with validating community knowledge.

» It is a problem when data are not shared with community. Scientists should support identifying best practices and assisting communities in getting access to data on a regular basis.

7. **Community capacity** can be a large barrier.

» Communities often have a lack of staff, funding, or knowledge to implement climate change mitigation, adaptation, and resiliency strategies. This means that retaining and building on knowledge can be a challenge, and there is often a lack of resources to engage in process.

» There is a critical need and role for "bridge" or boundary organizations to support community engagement and relationship building, and to work with scientists.

» Researchers are not engaging early enough or throughout all planning or implementation phases.

» The need to prepare for an increase in population and changing demographics is a growing challenge.

» Areas with more resources can go after more resources, leading to inequities.

8. **Structural injustice and history** are an important challenge that must be acknowledged and incorporated into work.

» Representation and historical barriers of participation remain issues today.

» These communities often lack meaningful contact with decision-makers.

» Some people may not see, know, or they may even resist reality and history. Similarly, there are often unrecognized/inherent biases and a failure to acknowledge these biases.

» Oppression, racism, and environmental racism have affected and continue to affect communities.

» Communities may have low adaptive capacity.

9. **Education, culture** as challenges – more specifically, lack of education and inherited institutional cultures.

» Inherited institutional culture is a barrier for many universities and researchers who want to operate differently but are held back by institutional barriers. Furthermore, universities have slow turnover, which can result in difficulties changing culture.

» There is a lack of training and knowledge for how to work outside of academia with communities.

10. **Regional collaboration** outside of a small community is a challenge. This can include rural communities and urban environmental justice communities, as well as how research addresses the need for local tools vs. regional problems and solutions.

11. **Many participants indicated that simply knowing where to start can be a barrier – specifically, where to start on engagement and finding partners**.

12. **Legislation cycles, politics, and policy barriers were raised as continued challenges, particularly with a focus on financing and funding for technology solutions, and how to accelerate adoption and create change on the ground**.

13. **The inability of science to recognize failure as success is a barrier**. It is important to recognize that there are different measures of success, acknowledge failure, and share lessons learned, especially from failure.

COMMON CHALLENGES IDENTIFIED BY COMMUNITY LEADERS

Community leaders identified specific community challenges during the workshop. The challenges are diverse and varied, reflecting the diversity of communities that participated in the workshop. As a reminder, this list captures only what was reported in writing and online polling during the Symposium.

Technical challenges include:

» Improve air quality and empower community members to document pollution and install monitors.

- Stable, clean, and accessible energy and transportation, which also has its own technical challenges. These include new grid vulnerabilities, reliable power, scaling zero-emission technology, and transportation options.
- Climate impacts, particularly frequent wildfires, deplete and divert resources
- Extreme heat; lack of cooling centers
- Flooding
- Food security
- Water quality and drinking water access; groundwater
- Decision-support systems and models (such as cost effectiveness modeling)
- Disseminating data so it is actionable; ensuring resources/knowledge to analyze available data

Societal/Governmental challenges *include:*

- Lack of connectivity to infrastructure and/or services. Examples provided include failing septic systems, no trash services (where trash is burned privately), lack of green spaces, and storm drain water capture not being connected to recharge basins.
- Limited or no affordable housing or access to healthy foods; displacement; homelessness
- Car dependent, high cost of living, employment stability (gig economy)
- Agency and formal boundaries are not always the best guiding principles when considering climate and food systems
- Tribal communities working with State government
- Mistrust of government
- Workforce development as related to new technologies and climate solutions.

Other community challenges *identified include:*

- Health burdens for people of color taking action
- Heavily impacted communities are often disconnected from environment
- Lost sense of community
- Blame for climate issues; shame
- Fear

» Enormity of issue; climate can be a lower priority than day-to-day issues

» Apathy

COMMUNITY STRENGTHS AND CAPACITIES HIGHLIGHTED

Communities possess deep knowledge and expertise, and deep and diverse networks. For example, communities can contribute:

» Local knowledge

» Mobilization/organizing community; network building

» Collaboration

» Strong partners

» Cultural diversity

» Long-term relationship building; authentic relationships

» Convening powers, grassroots

» Example of Transformative Climate Communities grant implementation as a strength

» Large and growing cross-sector networks of people engaged in this space

Many communities or community groups span boundaries and sectors; they can play a critical role in making information accessible.

Historical and indigenous/tribal knowledge is a strength. This can include:

» Indigenous land management practices

» Real world expertise

» How to build on data with local knowledge

This wordcloud includes community strengths that were reported by participants after the workshop, amplifying the themes and messages that were shared all day.

Communities can provide demonstrations of best practices, such as:

» Management practices

» Innovative research

» Technology development hubs

» Piloting of community engagement models

» Small-scale solutions can serve as models for others

Communities demonstrate resilience as well as other qualities that are inherent strengths, including:

» Resourcefulness & Self-sufficiency

» Commitment & Persistence

Other strengths and capacities identified include:

» Adaptability and diversity of expertise

» Trust and respect present within the community can create an inclusive environment

» Community identity and culture

» Leadership, including activation of youth leadership and engagement

» Passion

» Advocacy

» Creativity

» Spirituality

EXAMPLES OF COMMUNITY RESEARCH NEEDS

In the workshop, after identifying community-driven challenges and discussing strengths and capacities, discussion groups brainstormed research needs and potential partnerships to advance community priorities.

Research Needs:

» Decision-support tools to determine best solutions, especially those that highlight cost-efficient, effective, sustainable, solutions that also respond to social inequities. Analysis of emergency response cost effectiveness compared to proactive, preventive measures.

» Quantifying benefits of infill development and preserving wildlife corridors.

» Further inclusion of social science; how behavior change happens for consumers, renters, etc.

» Studying the cycle of urban renewal to displacement of communities.

» Grid upgrades and enhanced battery storage.

» Understanding how to shift to a collective culture, which many communities of color have done already (versus individual solutions like electric cars).

» Additional economic analysis of technology solutions, including biomass and agricultural climate adaptations.

Research Questions:

» How are current water policies affecting California's recharge basins? How can we improve effectiveness of policies and of recharge? How does groundwater recharge impact water quality?

» What decision-support tools examine multi-objective outcomes as well as compare impacts across environmental, social, and economic metrics for different adaptation strategies?

» What approaches or strategies support the development of intersectional projects that will solve multiple problems at the system's level?

» What alternative, renewable energy solutions exist, and how can they be implemented?

Potential Partnership Approaches:

» Research-Community partnerships should match stakeholders & researchers to:

- Leverage funding;
- Construct inquiry/research questions together;
- Disseminate findings in accessible ways;
- Partner on advocacy to implement solutions identified in research findings;
- Connect existing research to policy and funding mechanisms.

» Research-Community partnerships should consider starting new sustainability projects in disadvantaged communities first; these can serve as models to scale from there.

» Citizen science programs are another partnership option that can monitor and document behaviors that affect environmental and human heath, as well as support enforcement and policy change by documenting needs.

» Regional climate centers could facilitate partnerships across California.

PRINCIPLES FOR MEANINGFUL ENGAGEMENT IN RESEARCH

The Symposium laid groundwork to advance participants' shared goal of conducting climate change research based on meaningful community engagement. This section outlines principles to consider for anyone seeking to advance community-driven and engaged research, including State government employees and agencies.

ALWAYS BEGIN WITH COMMUNITY PRIORITIES

Scientists will not be outside experts coming in to tell communities what they should do; scientists will be partners helping communities plan their future. This means recognizing sovereignty and respecting the fundamental right that communities must design their own sustainable and resilient futures. It means spending the time it takes to build relationships and to sit down (with communities to understand their priorities, and then to help them achieve those priorities in ways that advance climate adaptation and mitigation. Include communities and stakeholders from the beginning.

Bridge organizations/boundary-spanning organizations are important: Scientists may feel deterred from conducting research in communities where they do not have existing relationships, do not have expertise on local priorities, do not speak the language, and/or do not know the cultural nuances. Scientists can partner with organizations and people to overcome these challenges and ensure the research is achievable and actionable; organizations that have this expertise and are trusted members or representatives of the community.

AIM FOR ACTION

Design engaged research from the start to make a concrete, demonstrable, positive impact. Original research will remain part of an overall science program, but engaged research focuses greater attention on the use and application of existing research and the opportunity for real-world decisions to help guide new research agendas.

RESPECT COMMUNITY KNOWLEDGE AND CAPABILITIES

Dr. Raj Pandya said: "A mayor once said that he was tired of rich communities having priorities, while poor communities had needs. A sign at a rally read, 'We are experts too. We live here.'"

Engaged research acknowledges that everyone has wisdom, skill, experience, and knowledge to contribute. The goal of engaged research is to draw from and give back to all those sources of knowledge, not just science.

DESIGN FOR EQUITY

Given a history of systematic inequities and implicit biases, if researchers and government agencies are not actively designing for equity, they are perpetuating inequity.

Designing for equity means being inclusive when setting goals and designing outcomes, and always examining who stands to benefit from the work. See resources included in the Appendix C for more on this principle.

EMBRACE NATURAL SOLUTIONS

Engaged research doesn't seek to control nature or to preserve nature away from humans. Instead, engaged research is about figuring out how to live in harmony with nature and advance natural and human health. This might look like, for instance, floodways instead of floodwalls, or green neighborhoods with trees and plants that help counter heat islands. Natural solutions can be more cost-effective, easier to maintain, more resilient, and confer psychological, ecological and aesthetic benefits.

The order in which the principles appear is not meant to reflect their relative importance; all are critical principles to strive for in this work.

ABOUT

ABOUT CALIFORNIA STRATEGIC GROWTH COUNCIL

The California Strategic Growth Council (SGC) is a cabinet-level organization that coordinates and works collaboratively with public agencies, communities, and stakeholders to achieve sustainability, equity, economic prosperity, and quality of life for all Californians.

SGC is an active participant in the Capitol Cohort on Race and Equity (CCORE). Our Racial Equity Action Plan is available on our website sgc.ca.gov.

ABOUT SGC'S CLIMATE CHANGE RESEARCH PROGRAM

SGC's Climate Change Research Program supports research that advances tangible outcomes, and leverages the State's diverse research investments to fill critical research gaps to help meet the State's climate goals. The results of the research will fill gaps in knowledge that will advance implementation of the State's climate change policies while also benefiting underserved communities in California. SGC's Research Program emphasizes meaningful engagement, integrating local and tribal governments, community-based organizations, and others into the research process. The Climate Change Research Program is part of California Climate Investments, which puts billions of cap-and-trade dollars to work reducing greenhouse gas emissions, strengthening the economy and improving public health and the environment – particularly in disadvantaged communities, low-income communities, and low-income households.

THANK YOU TO OUR SPONSORS

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LA DWP Los Angeles Department of Water & Power

APPENDIX A: GROUND RULES

GROUND RULES

- This is a space where everyone's opinions matter.
- Everyone should be listened to and heard.
- Every organization and community is unique, and community matters. Our focus today is on local processes, priorities and impacts.
- You can learn and borrow from what has worked elsewhere.
- Listen first – talk second.
- Be present – try to refrain from checking email during discussions
- When we brainstorm ideas/solutions, use improv rules: Try not to say "no, but"; instead say "yes, and"
- Assume good intent; understand impact. Ask for clarification when necessary.
- Be aware of your participation. Lean in if you are being reticent or overlooked, pull back if you find yourself dominating.
- Notice power dynamics. Power shows up in many different ways – be aware of how you may be unconsciously using your privilege.
- Don't restate for the sake of restating, but do reintroduce (with attribution) comments that have been overlooked.
- Strive to be concise and help the facilitator keep the focus.
- Have fun!

The Strategic Growth Council is an active participant in the Government Alliance on Race and Equity (GARE) in the Capitol Cohort. Our Racial Equity Action Plan is available on our website sgc.ca.gov.

APPENDIX B: PARTICIPANT HANDOUT

PARTICIPANT PACKET

WHO IS AT THE TABLE:

» ~4–6 community leaders and/or representatives of organizations who represent the interests of California communities (see definitions below).

» ~4–6 scientists

» ~1–3 California State agency staff

» A facilitator

DEFINING TERMINOLOGY AND CATEGORIES USED TODAY:

1. **Science & Applied Research:** We are using a broad definition and concept of science, with a focus on applied (not basic) research: "*Science is the pursuit and application of knowledge and understanding of the natural and social world following a systematic methodology based on evidence.*" This is not science limited to a lab, or focused solely on nature; this includes studying people and communities, human health, social science, behavior, economic questions, and the connections between climate change impacts & these topics.

2. **Scientist:** Of the participants here today, scientists include those working at research institutions (universities, colleges, other NGOs), or in private consulting/industry.

3. **Community**: One definition is "*a group of people living in the same place or having a particular characteristic in common.*" From the perspective of this Symposium, a community discussed could include a group of people from the scale of a neighborhood, a town or city, a tribe, a county, or even a stakeholder "community" who are relevant to an area of research – such as almond farmers, fishermen, transportation planners, etc.

4. **Community Leader:** Similar to above the concept of a community, *community leaders* are representatives of a community – no matter what scale or type of community – participating to discuss your on-the-ground priorities, needs, and concerns related to climate change. *While you may not self-identify as a community leader, if you are here to represent your organization and are looking for potential partnerships with scientists to address challenges relevant to your organization/community, then today you are a community leader.*

5. **Engagement in Research:** *"Integrating the insights and perspectives of diverse community and stakeholder voices into each step of the research process."* This definition is supported by elements including: engaging with a diverse set of partners; addressing needs identified by the community; building relationships; directly involving communities in research activities; funding community partners; and designing plans that include end-user needs.

   Please see the appendix for additional resources related to this topic.

MORNING DISCUSSION: BARRIERS AND CHALLENGES

OVERVIEW AND GOALS:

You have about 40 minutes to reflect on the keynote discussions with the participants at your table, in particular sharing your own experiences and challenges with the topics – whether you are a community leader looking to work with scientists, or scientists facing institutional challenges to "doing things differently." The goal is to learn more about each others' experiences, perspectives, and challenges everyone has faced and is facing.

Facilitators will be available if needed or helpful – look for them walking between tables!

This is a proposed discussion structure – **but if you would like to adapt this, as a table, please feel free**, and remember the ground rules throughout:

(15 min) **Group reflection on keynote**

(15 min) **Community leaders/non-scientists share their experiences**

Consider: Have you worked with scientists before?

» **If so:** Describe experiences you have had working with scientists. Were there challenges or areas for improvement? What were the outcomes of the work? Did the problem or question addressed originate from the community/organization?

» **If not:** Why not? Have you experienced barriers/challenges for you or your organization?

(15 min) **Scientists share what challenges they face in their institutions/organizations**

Consider: What barriers and challenges are present at scientific institutions?

» Describe institutional barriers or challenges.

» What have you experienced on a personal level, in your own work?

Readout will be conducted using instant polling software. To participate:

1. Open smartphone browser
2. Go to sift.ly
3. Enter participant code **SGC**

AFTERNOON WORKSHOP

WORKSHOP GOALS

Through facilitated dialogue and practicing what we have heard during the Symposium, this exercise aims to allow scientists and community leaders to:

» Build relationships,

» Deepen their understanding of local climate impacts and concerns, and

» Identify ways that science, research, community knowledge, and community strengths can be combined to help California communities set and meet community-driven climate adaptation goals.

Scientists practice actively listening to community priorities and strengths, and learn how research and science can advance those priorities and complement those strengths.

Community leaders see the value of science and research in addressing local challenges; gain understanding of how research can advance their work; and share the strengths and capacity they, their organizations, and/or communities bring. They will practice communicating their own local challenges, priorities, and concerns with scientists.

Scientists and community leaders gain experience seeing science as part of a larger process.

WORKSHOP INTRODUCTION

1. **Remember the ground rules**

2. **Framing**: We are here today to practice, to communicate, and most of all, to listen. We are here to pool our expertise and knowledge, which includes inviting and respecting the expertise and knowledge of others. We have all come to this event with our own skills and backgrounds, and with a shared interest in how to advance climate action through climate research – and most importantly, through partnership-based research.

3. **Outcomes**: Will vary from participant to participant! The primary goal is to listen and make connections. If some of you leave here with excellent new contacts, and preliminary plans to work together, that would be fantastic! If you leave here inspired to talk to organizations/local groups in your community, or dive deeper into a subject you study – that is also fantastic! We will be sharing resources and notes afterward, and we look forward to engaging with all of you on similar efforts in the future.

4. **We want your feedback!** We will be collecting the worksheets so we can compile notes on the workshop to prepare a report that will be shared with everyone. You will have opportunities to take your own notes, or collaborate on one shared worksheet.

   Please also fill out the evaluation form at the end of this workshop.

WORKSHOP AGENDA

STEP 1: INTRODUCTIONS (WHOLE TABLE; 15 MIN)

Goal: Learn a bit more about who is at the table, specifically where climate-related interests lie. This introduction is likely a refresher on professional interests, to facilitate the next step.

(1 min each) **Everyone briefly describe the focus of their work and climate-related connections.**

Examples if needed for context:

» **Scientist:** I study the impact future extreme heat waves may have on agricultural workers in the Central Valley.

» **Government entity:** I am working on a local plan for emergency management, like how we evacuate a rural community in the event of a wildfire or mudslide. OR I am developing a plan for 100% renewable energy in my jurisdiction.

» **Community organization:** I work directly with community members to understand their needs and concerns. For climate change, many are interested in urban greening (planting trees), how to afford their AC bills, etc.

» **Any non-scientist:** I don't think I actually understand climate change impacts in my work or community yet. I have noticed some crazy weather (example).

» **Any non-scientist:** I work with elderly populations, and how to communicate with and help them evacuate in emergency situations. We don't work on climate change.

STEP 2: GET TO KNOW COMMUNITY LEADER/NON-SCIENTIST AND THEIR PRIORITIES/CHALLENGES, AND STRENGTHS/CAPACITIES (IN PAIRS; 15 MIN):

Goal: The community leader/non-scientist will elaborate to the scientist(s) on what climate-related concerns they have in their work, or in their community. They will also describe capacity and/or strengths of their organization, partners, and/or community.

Notes:

1. We are not aiming to problem-solve in this step.
2. **Reminder**: the priorities shared do not have to have the word "climate" to be related to climate change. Sometimes climate action is actually action on other priorities, done in a climate sensitive way.
3. **State Agency Staff**: As a reminder, the focus of this workshop is not on agency priorities or concerns. So for this step, we kindly ask that you listen in on a pair's discussion as an observer. Please feel free to participate in the discussions to follow in Steps 3 and 4.

(5-10 min)

Community leader/non-scientist: describe the top priorities in your community, especially any climate-related concerns you have in your work or in your community.

» This may involve challenges, questions, priorities you are actively tackling or want to tackle.

» Describe as well the strengths you or your community/organization brings to bear and existing capacities.

» These could involve topics such as weather, climate, sustainability, natural disasters, pollution, health and wellbeing, environmental justice, agriculture, energy use, etc.

Scientist: As needed, ask clarifying questions. Focus on listening and understanding your partner's priorities. Resist the temptation to offer a solution or idea!

We encourage notetaking on key priorities/challenges on the worksheet. The pair should review the notes and ensure what was shared is captured accurately.

(5 minutes)

Decide what top 1-2 challenges/priorities/concerns you will share.

» We suggest that the top choices should be the ones where the community leader feels the organization, partners, and/or community has the most capacity and strengths to contribute to addressing the challenge.

STEP 3: CONNECT ISSUES TO SCIENCE (GROUPS OF 4–6; 30 MIN):

Goal: For each pair in a group of 4-6 to share the top priorities/concerns they discussed, and as a group of 4-6, brainstorm how science and research could help address one or more of these priorities/concerns.

(10 minutes)

First pair describe the top one or two priorities/challenges the partner raised.
As a group, brainstorm the role science/research could play in addressing one (or both depending on time) of these. Capture any key ideas on worksheet.

(10 minutes)

Second pair do the same as above.

(5 minutes)

Group discuss what they would like to share with full table.

» Is there one idea that seems most promising, an insight that is particularly useful, or a project that has high probability of impact?

» In the limited report out time, it might be worth prioritizing one or two big ideas, rather than trying to describe every idea you came up with.

Potential questions to explore, if needed.

Note: These are not intended for your group to answer all of them; they are here to spark discussion and brainstorming, as relevant.

1. What are the connections to science – i.e., are their questions or gaps in knowledge? Could answering the question(s) advance community needs/priority/concern; how?
2. How can a scientist contribute to addressing the issue or advancing the priority?
3. What impact(s) would that contribution have on the community/partner's stakeholders? These can be positive or negative impacts.
4. How feasible would this work be?
5. How visible will it be - is it the kind of work that could mobilize or galvanize people?
6. What would it take from the partner/community to address the issue or advance the priority with a scientist? How would community strengths contribute?

STEP 4: SHARE OUT, INSTANT POLLING, INSPIRATION (WHOLE TABLE; 15 MIN)

Goal: As one group, share conclusions reached, takeaways from discussions. Discuss potential next steps or actions participants may want to take in their own work, universities, or communities.

(10 minutes)

Facilitator open dialogue with whole group to share what was discussed, what was learned. Anyone have new ideas? Next steps?

(5 minutes)

Everyone: Time for participants to review their notes; jot down key ideas they would like captured on their worksheets; fill out evaluation form.

» Facilitator will collect worksheets/notes and evaluation forms.

Readout will be conducted using instant polling software. To participate:

1. Open smartphone browser
2. Go to sift.ly
3. Enter participant code SGC Worksheet and Notes

Table number:
Name & Organization:

WORKSHEET AND NOTES

Will be collected by facilitators

TOP CHALLENGES/PRIORITIES/QUESTIONS IDENTIFIED	STRENGTHS AND CAPACITIES IDENTIFIED
1.	**1.**
2.	**2.**
3.	**3.**
4.	**4.**

Table number:
Name & Organization:

POTENTIAL ROLE OF SCIENCE/RESEARCH IN ADDRESSING ABOVE CONCERNS/PRIORITIES/CHALLENGES

1.

2.

3.

4.

APPENDIX C: PARTICIPANT RESOURCES

APPENDIX: RESOURCES

The following resources have been suggested by Program Committee members as excellent references to learn more about engagement in research and partnership-based approaches, as well as equitable approaches to working on climate change impacts in communities. This is not meant to be a comprehensive list, but we hope these resources will be useful to those who wish to learn more about these topics.

FOR EVERYONE:

1. The Greenlining Institute white paper: Reimagining Community Partnerships, a good neighbor approach: https://drive.google.com/file/d/0ByOfO1N9I-4xNjJOUmdfdThJWFg1eF9YUWIDQ2daa3JtLUYw/view?usp=sharing
2. Independent Community-based Organizations and the Cornell Lab of Ornithology: Meaningful Collaborations, a Workbook for Community leaders, Educators, and Advocates Working with Science Solutions: https://drive.google.com/file/d/1xxyUdiE1vqnH2_pQeYCRfHwGOyFzECxb/view
3. Asian Pacific Environmental Network: Mapping Resilience, A Blueprint for Thriving in the Face of Climate Disasters: https://apen4ej.org/map/
4. The Greenlining Institute Guidebook: Making Equity Real in Climate Adaptation and Community Resilience Policies and Programs: http://greenlining.org/publications/2019/making-equity-real-in-climate-adaption-and-community-resilience-policies-and-programs-a-guidebook/

WRITTEN SPECIFICALLY FOR SCIENTISTS:

1. Thriving Earth Exchange: Community Science Guidance for Scientists: https://thrivingearthexchange.org/wp-content/uploads/2018/03/TEX-Resources-for-Scientists.pdf
2. Union of Concerned Scientists: Scientist-Community Partnerships, a Scientist's Guide to Successful Collaboration: https://www.ucsusa.org/sites/default/files/attach/2016/04/ucs-scientist-community-partnerships-2016.pdf