THE FUTURE OF ADVANCED TECHNOLOGY AND BASIC RESEARCH

A CALIFORNIA 100 ISSUE ROADMAP FROM RESEARCH TO ACTION

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California is widely recognized as the world's leading center for basic scientific research, technological innovation, and entrepreneurial opportunity. The state boasts many assets that contribute to regional strengths in places such as Silicon Valley, San Francisco, Los Angeles, and San Diego. These include early and ongoing investments in public and private research universities, regional industry clusters that benefit from high-skill labor, knowledge transfer and competition for research talent in the absence of enforceable non-compete agreements, and a culture of business and finance that promotes startup activity and is welcoming of immigrant talent.

At the same time, California faces several challenges with respect to its future leadership in science and technology. The state has been a "majority-minority" state since 2000 and Latinos are now the state's largest population group. And yet, the state's tech sector remains racially exclusive, with Black, Latino, and Native Californians severely under-represented at every rung of the corporate tech ladder. In addition to racial disparities, advanced technology in California is also marked by severe regional disparities, with the population-rich areas of the Central Valley and Inland Empire receiving far smaller public and private investments than their coastal counterparts.

Quality of life is also emerging as a severe constraint on the future growth of advanced technology in California. Housing scarcity in the Bay Area and Los Angeles, mega-commutes for those who can only afford housing in inland regions, and the growing frequency of forest fires and bad air quality days—these factors all contribute to a growing sense among employers and employees alike that they may need to look to other states in order to succeed and thrive.

FROM RESEARCH TO ACTION

How can we make sure that California's future in advanced technology remains innovative, resilient, inclusive, sustainable, and equitable?

In March 2022, the California 100 Initiative released a policy and future scenarios report on advanced technology and basic research, developed jointly by the **Bay Area Council Economic Institute** and the **Silicon Valley Leadership Group Foundation's California Center for Innovation.** The teams conducted extensive primary and secondary research, and spoke with a wide array of experts from industry, government, and academia to examine possible scenarios and policy options for future-focused action.

"California needs to address its business climate issues, support its public universities, include more women and minorities in its innovation economy, keep the door open for global talent, address climate change and its impacts, and ensure that affordable housing is available for current and future Californians," said **Sean Randolph from the Bay Area Council Economic Institute.** "California's science and technology assets are unique, but it would be a mistake to take today's technology-based prosperity for granted."

FUTURE SCENARIOS

Other key takeaways from the California 100 report include a consideration of policy options that improve advance technology and basic research under **four future scenarios** that center around whether or not technology is seen as a net asset or a net liability (with well-paying jobs and improvements in well-being offset by new or worsening social harms), and whether or not places with tech sector concentrations have a high or low quality of life (as measured by housing affordability, homelessness, and air quality).

Whatever the scenario, the research commissioned by California 100 indicates that we should refrain from "doing nothing" as a default or fall-back option. In order for California to perform better under these various scenarios, public- and private-sector organizations will need to explore, deliberate over, and enact solutions that advance **innovation** (such as doing more to leverage and support two-year and four-year colleges across the state, through workforce initiatives, research investments, and tech commercialization), **resilience** (such as using technology to help communities better anticipate, monitor, and bounce back after disaster), **inclusion** (through deeper engagement with communities that traditionally have had little say in the development of new products and technologies), **sustainability** (such as by expanding our lead in clean energy and water conservation), and **equity** (by doing more to support the career and leadership pathways of women and communities of color in science and technology).

Artist rendering of future scenarios in advanced technology and basic research
Source: California 100

THE CALIFORNIA 100 ROADMAP

The California 100 report on policies and future scenarios is the first step in a multi-stage process that is designed to inspire and engage Californians—from a variety of sectors and all walks of life—to build a stronger future for current and future generations. In the summer of 2022, our expert and intergenerational Commission will conduct a series of listening sessions throughout the state, to solicit feedback on the ideas generated by our research and to generate additional big and bold ideas for consideration by public and private agencies, as well as by everyday Californians. We will also be generating insights from our policy innovation projects throughout the state that cover a variety of topics, and our deep engagement on questions of science and technology as they relate to a variety of issues, including advanced technology and basic research.

In early 2023, we will take these various policy ideas and scenarios, and engage in a process of deliberative democracy featuring a representative cross-section of California residents. The goal of this deliberative exercise is to understand the conditions under which Californians from various walks of life can come to agreement on the long-term challenges facing the state and, importantly, the kind of bold and visionary solutions we need to put the state on a stronger trajectory for the next century.

California 100 will also be engaging intentionally with young Californians, who have the most to gain or lose in the coming century. Our team members will engage young people throughout the state, including in high school and college settings, and will organize a statewide youth summit that will produce a manifesto for the future of California.

Finally, in Winter and Spring 2023, our intergenerational Commission will draft a vision and strategy document for the future of California, based on briefing materials that build on insights from the various streams of work. California 100 will then launch a culminating event in early summer 2023 that serves as the formal launch of the vision and strategy document and, importantly, also brings together leaders and partners from our various streams of work and prior engagement.

Our culminating event in the summer of 2023 will:

1. Showcase the pressing need for California to prioritize long-term futures,
2. Build an ambitious yet achievable vision and strategy that are grounded in rigorous research and community engagement, and
3. Inspire others to do the same, providing tools that a variety of partners (including policymakers, government agency officials, business leaders, activists, researchers, and next-gen leaders from various sectors) can use to build their own aspirational visions and strategies for California's long-term success.

ABOUT CALIFORNIA 100

The California 100 Initiative envisions a future that is innovative, sustainable, and equitable for all. Our mission is to strengthen California's ability to collectively solve problems and shape our long-term future over the next 100 years. California 100 is organized around 15 policy domains and driven by interrelated stages of work: research, policy innovation and engagement with Californians. California 100's work is guided by an expert and intergenerational Commission. Through various projects and activities, California 100 seeks to move California towards an aspirational vision—changing policies and practices, attitudes and mindsets, to inspire a more vibrant future.

California 100 staff members compiled this roadmap document, drawing on research in two publications—a Policies and Future Scenarios Report and a Facts-Origins-Trends Report—by authors from the Bay Area Council Economic Institute and the Silicon Valley Leadership Group Foundation's California Center for Innovation. The two technology-related publications are part of California 100's larger research stream of work, built in partnership with 20 research institutions across the state.

California 100 sponsored grants for data-driven and future-oriented research focused on understanding today and planning for tomorrow. This research, anchored in California 100's 15 core policy domains, forms the foundation for the initiative's subsequent work by considering how California has gotten to where it is and by exploring scenarios and policy alternatives for what California can become over the next 100 years.

The California 100 Initiative is incubated through the University of California and Stanford.

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To learn more about the future of advanced technology and basic research in California, visit the California 100 website at California100.org, where you will find our detailed reports on the topic, and more information about our research partners.