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Media Release

California Could Lose Position as Nanotechnology Leader, Potential Trillion Dollar Market at Stake

State Science Advisors Caution State Legislators at 21st Century Committee Meeting

Sacramento, CA (Jan. 20, 2004) --The California Council on Science and Technology (CCST) today released findings from their most recent study on nanotechnology at a briefing for state policymakers. The report titled, "Nanoscience and Nanotechnology: Opportunities and Challenges in California," was requested by the Joint Committee on Preparing California for the 21st Century -- co-chaired by Sen. John Vasconcellos (D-Santa Clara) and Assm. Sarah Reyes (D-Fresno) --- as part of its two-year exploration of technology topics.

Nanotech experts predict a trillion-dollar global, multi-industry market for nanoproducts over the next ten to 15 years -- adding approximately seven million jobs worldwide and increasing productivity by roughly the same amount as information technology. Said Vasconcellos, "If managed smartly, nanotechnology has the potential to bring jobs and wealth to California. It is the next wave of technology. It's our decision to ride it and make the most of it -- or be overwhelmed by it."

According to the CCST report, potential challenges to the healthy development of California's nanotechnology industries include the following:

- *Loss of Existing Assets* -- the loss or degradation of any of California's existing high-tech assets -- such as our skilled workforce, concentration of venture capital, strong research institutions -- would be extremely problematic.
- *Scope* -- though we often think of nanotechnology as a singular field, it actually represents a collective advance across several disciplines. Development will certainly not be uniform, and there is the potential that public concern about implausible applications may halt research across the board.
- *Transition* -- existing industries will have to undergo radical transformation to survive such changes as the shift from silicon-based computer chips to carbon nanotube-based chips.
- *Intellectual Property (IP)* -- nanotechnology will lead inefficiencies and us to uncharted legal territory (can you patent an atom?) and inefficiencies in the transfer of IP between universities, government and industry could dampen business activity.

- *Environmental and Social Impacts* – although the commercial synthesis of nanomaterials has begun, we have few data on the impact large quantities of these materials will have on the environment or on human health.

Among the report's many recommendations to the Governor and Legislature:

- *Education* -- Because California's workforce has always been our surest source of competitive advantage, and therefore a major factor in business attraction, invest in education and workforce training.
- *Economic policy* -- Re-engineer state tax incentives to address the needs of these emerging industries, examine siting for nanomanufacturing in California, and facilitate commercialization by encouraging close ties between industry and the academe.
- *Social and Environmental Issues* – Many of the environmental and social implications of nanoproducts and processes are unknown. Establish nanoethics centers in higher education and multi-agency government teams to identify essential health, environmental, and other impacts.

“During this time of intense debate about where and how to invest California's limited financial resources, we think it is very important that the Governor and the Legislature consider carefully the needs and implications of this emerging field, “ said CCST Executive Director Susan Hackwood. “The time to lay the foundation is now.”

Copies of the report are available at <http://www.ccst.us/>. For paper copies, please call 916.322.6693 or e-mail heather.barbour@sen.ca.gov.