CCST
CALIFORNIA COUNCIL ON SCIENCE & TECHNOLOGY

Susan Hackwood
Executive Director
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COUNCIL MEETING

RECENT ACTIONS

- ✧ CCST Governance and Operations
- ✧ S&T Committee Progress
- ✧ CCST Projects
  - ✧ Education
    - ✧ Community College project
    - ✧ Baccalaureate modeling project
  - ✧ Well Stimulation Technologies
    - ✧ SB4 reports completed
    - ✧ DC trip
- ✧ S&T Policy Fellows
  - ✧ Alumni active
  - ✧ 7th class begins training on November 2
  - ✧ Fundraising
  - ✧ Major Gifts Officer

Two new Board members have been appointed:

- **Eugene Tu**, Center Director, NASA Ames Research Ctr
- **Marianne Walck**, VP, Sandia National Laboratories, California Division

Five new Council members have been appointed:

- **Mike Kavanaugh**, Senior Principal, Geosyntec Consultants Inc.
- **Charles Kolstad**, Professor, Institute for Economic Policy Research, Stanford
- **Henry Lester**, Bren Professor, Division of Biology and Biological Engineering, California Institute of Techonology
- **Steven Schroeder**, Distinguished Professor of Health and Health Care, Division of General Internal Medicine, Dept. of Medicine, UC San Francisco
- **Judith Swain**, A*STAR Senior Fellow, Agency for Science, Technology and Research and Professor of Medicine, National University of Singapore

COMMITTEE PROGRESS

EXECUTIVE COMMITTEE

LIFE SCIENCES

WATER ISSUES

Council will discuss Committee structure and function prior to breaking up into groups for an afternoon discussion

Now relooking at this structure – as projects emerge, see overlap in interest areas

We continue to clarify how projects are initiated and how they may be funded

NEW TECHNOLOGY & INNOVATION

ENERGY ISSUES

EDUCATION

EDUCATION

California Community Colleges Chancellor's Office Doing what Matters For Jobs and the Economy Framework is working to engage with the Maker Movement by setting up a network of makerspaces linked to community colleges across the state.

CCST has developed a white paper to provide background on the intersection of making and higher education, as well as a "playbook" to help support the makerspace-CCC network development and CCCCO's.

EDUCATION

Cal Poly-San Luis Obispo would like to quantify and visualize pathways to successful completion of an undergraduate degree in order to inform policies to promote student retention.

CCST has been investigating potential statistical models to identify risk factors and reaching out to possible collaborators, notably at UC Davis and the Open Academic Analytics Initiative.

Future goals, depending on funding, include designing a systems dynamics model of the undergraduate pathways at Cal Poly and adapting it to other institutions.

Bechtel has decided that they will not be funding CalTAC further. They are narrowing their investments and closing their doors in 2020.

Sempra Energy has generously contributed $15K for bridge funding. Julie Meier Wright is helping fundraise. In December CCST applied to join the 100Kin10 network initiative.

Conversations with Prasad Ram of Gooru are ongoing. Potential partnership with the UC Davis School of Education is being explored.
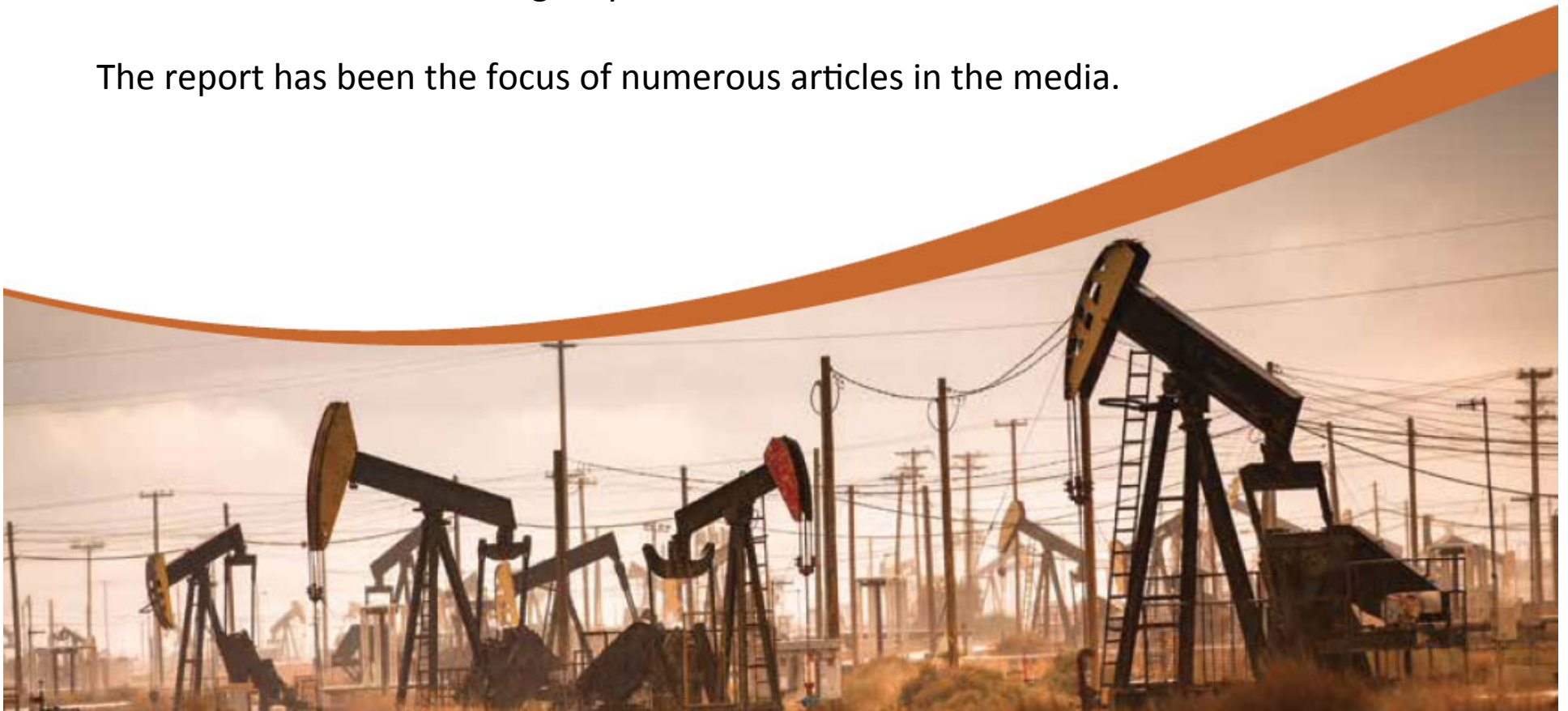
WELL STIMULATION TECHNOLOGIES

Report completed and released in July 2015. There were many wide-reaching rollout activities and broad interest from policymakers and journalists.

CCST participated in briefings of top-level policymakers in CA, including the Governor, Lt. Governor, Legislature, staff of the California delegation to Congress, and executives in the National Resources Agency and EPA.

The report has been the focus of numerous articles in the media.

WELL STIMULATION TECHNOLOGIES

The Governor is developing an interagency working group to address the report recommendations.

The Legislature also introduced legislation addressing the report recommendations.

CCST is presently looking for opportunities to do follow-up reports in the area of well stimulation and more broadly in the realm of oil and gas production in CA.

SCIENCE & TECHNOLOGY POLICY FELLOWS
SCIENCE & TECHNOLOGY INFORMING POLICY

The 2015 Fellowship was extremely successful. The 2015 Fellows staffed and analyzed over 100 bills and hearings. This was a delightful class and all have decided to stay in policy in one way or another.

2015 FELLOWS

✧ Debra Cooper – Senate Office of Research

✧ Vivian Ericson – Office of Assembly Member Garcia

✧ Christine Hochmuth – California Department of Finance

✧ Andrew Kosydar – Office of Assembly Member Daly

✧ Estevan Santana – Office of Assembly Member Bonilla

✧ Scott Sellars – Scripps Institution of Oceanography

✧ Angee Doerr – Center for Ocean Solutions, Stanford University

✧ Jane Mantey – University of California, Davis, NIH Career Program

✧ Shannon Muir – Senior Program Associate, CCST

✧ Laurie Harris – Senior Program Associate, CCST

November 1, 2015 marked the beginning of the 7th year of the Science Fellows Program.

2016 FELLOWS

Erin Arms, *Senate Office of Research* PhD in Genetics from UC Davis

Emily Berry, *Assemblymember Cooley* – Ph.D. in Cell Biology from the UCSF

Dan Brumbaugh, *Senate Environmental Quality Committee* – Ph.D. in Zoology from the University of Washington.

Sarah Carvill, *Senate Transportation & Housing Committee* – Ph.D. Environmental Studies from UC Santa Cruz.

Matthew Dumlao, *Senate Natural Resources Committee* – Ph.D. in Soils and Biogeochemistry from UC Davis.

Diana Lin, *Assemblymember Quirk* – Ph.D. in environmental engineering and science from Stanford University

Esha Mathew, *Assemblymember Medina* – Ph.D. in Cellular and Molecular Biology from the University of Michigan-Ann Arbor.

Gabby Nepomuceno, *Assemblymember Bonilla* – Ph.D. in Microbiology UC Davis.

Renita Polk, *Assemblymember Gipson* – Ph.D. in Human Genetics and Molecular Biology from Johns Hopkins University

John Thompson, *Assemblymember Obernolte* – Ph.D. in Materials Science and Engineering at Northwestern University.

CCST FELLOWS BY THE NUMBERS

7 YEARS FELLOWS PROGRAM IN EXISTENCE

69 CCST SCIENCE & TECHNOLOGY FELLOWS & ALUMNI

100% OF FELLOWS HOLD PHDs OR PHD-EQUIVALENTS
- SCIENCE
- ENGINEERING
- MEDICINE

700+ BILLS IMPACTED BY FELLOWS

40% OF FELLOWS STAY IN THE CALIFORNIA LEGISLATURE OR STATE AGENCIES AFTER THEIR FELLOWSHIP IS OVER

Post Fellowship Placements

27% California State Legislature – 16
12% California State Agencies – 7
22% Academia – 13
12% Non-profit organizations – 7
9% Private Sector – 5
3% US Government – 2
3% Advocacy groups – 2
3% Research Institutes – 2
2% National labs – 1
2% Local Government – 1
5% Other – 3

The primary focus of the Alumni Network recently has been on a new partnership with the Capital Science Communicators.

7th year placed in Legislature & recruiting is underway for the 8th year

GBMF has provided $350K over two years to recruit and hire a Major Gifts Officer. This has enabled us to advance building our Culture of Philanthropy.

2015 Philanthropy summary:

Total raised: $989K

$629K were new/current gifts

$360K pledge payments

Annual Giving Program brought in more than $150K

– more than the past three years combined.

COMMITTEE CHANGES

ADVISORY COMMITTEE

New additions:
- Robert Dynes, President Emeritus of the University of California
- Bernadette Glenn, Executive Director of the WHH Foundation
- Paul Gray, Executive Vice Chancellor and Provost Emeritus, UC Berkeley
- Dharia McGrew, Consultant with The Assembly Health Committee (Fellow Alumni)

Stepped down:
- Dick Atkinson, Former Director, NSF and past President University of California
- Octavia Diener, President Densmore Engines
- Ed Penhoet, Former CEO Chiron, Past President Gordon and Betty Moore Foundation

SELECTION COMMITTEE

New additions:

- Malaika Singleton, Program Coordinator, CA Alzheimer's Disease Centers, 2011 Fellow

- Erika Bustamante, State Government Affairs, Stanford University, 2012 Fellow

Stepped down:

- Michael Rodemeyer, Retired, University of Virginia

SUSTAINABILITY

Pat Callahan, our Major Gift Officer, started January 18th

Philanthropy program now includes:

Annual Giving

    Affiliates and Partners

    Mail, online, individual giving

Major Gifts

    Foundations

    Family foundations

    Individuals

PLANS FOR 2016

Complete the GBMF Match Challenge with $260K new funds: $740K has been raised towards the $1M match

Increase our end of the year giving by 25-50%

Focus on major gifts; increase our number of prospective donors and strengthen relationship with current donors

Identify and secure new funding for CalTAC

Complete funding for Science Fellows

Add new funding to develop a Rapid Response Research Fund

Topic Selection and Engagement Criteria

The following criteria guide selection of topics and engagement activities:

- **Need** – Clearly identified need for science-based input to inform policy
- **Relevant Expertise** – CCST has access to relevant research and expertise through its network
- **Consistency** – The opportunity advances CCSTs mission and is well matched with its core strengths
- **Probable Impacts** – CCST can make a critical and tangible impact to the policy or policy process. The cost-benefit ratio is favorable.
- **Timeliness** – CCST can provide useful and relevant information in a timely manner.
- **Urgency** – Action in the near-term is critical to improve decision-making.
- **Significance** – The issue has a significant effect on the sustainability of ecosystems, communities and the economy.

PROJECT IDEA WORKSHEETS

- Project Title
- Lead Staff
- Council Experts
- Problem Statement
- Goal/Solution
- Scope & Description
- Project Status
- Client in Policy/Academic Leadership

- Additional Audiences
- Potential Funders
- Budget Range
- Proposed Timeframe
- Format
- Council Engagement
- Next Steps
- Background and Notes

CURRENT PROJECT IDEAS

Antibiotic Stewardship: Given that unrestrained use of antibiotics leads to resistant supermicrobes, determine if there's a need and path for CCST to report on the status of antibiotic stewardship efforts.

Biomethane: Evaluate biomethane heating values and options for delivery of biomethane to public gas pipelines, such as impacts to cost, volume of biomethane sold, equipment operation, and safety.

Computer Science Education: Engage CalTAC to lead an initiative developing strong collective impact in digital education by developing middle-school level computer science coursework in California, serving as a framework to develop additional critical coursework in the K-12 system.

CURRENT PROJECT IDEAS

Computer Science Policy: Conduct a study to evaluate the implementation of legislation from 2014 that broadly called for supporting and looking into additional math and CS coursework in post-secondary education with a broad goal of informing policy surrounding CS education in high school and higher education.

Cybersecurity – NIST: Disseminate the report on cybersecurity risk and protection for small and medium enterprises (SMEs) from the National Institute of Standards and Technology (NIST) and engaging with the Community College system to train students on career and technical education (CTE) issues related to cybersecurity.

Cybersecurity – Task Force: Help put the state in touch with the best experts in cybersecurity solutions.

CURRENT PROJECT IDEAS

Fossil Fuels: Provide an independent assessment of the state's plan to reduce greenhouse gas emissions by 80% by 2050, with a focus on the fossil fuel production process.

Grand Challenges: Increase awareness among decision makers about the importance of research to California's economy by creating a science and technology roadmap for California to identify "grand challenges" that are important to our society and why research is important for driving innovation.

Pharmaceutical Pricing: Given that the rising cost of pharmaceuticals in California is becoming unfeasible and leaving people without treatment, determine if there's a role for CCST to play in informing the Legislature about effects of price fixing on prescription drugs.

CURRENT PROJECT IDEAS

SB 1281 Data Assessments: Working with DOGGR during their collection of data pursuant to SB 1281 on water in the petroleum industry, conduct a parallel assessment to identify key questions and whether the data being collected answers those questions.

Transportation Workshops: Support the Institute for Transportation Studies in developing a workshop on transportation issues in California.

Water Information Systems: Identify study areas and data that we need in order to fill in holes on a 2-, 5-, or 20-year water planning horizon and identify best practices and potential pitfalls for the state's water information systems.