

**California Environmental Protection Agency
Department of Toxic Substances Control
Green Chemistry Initiative Science Advisory Panel
January 10, 2008 Meeting
San Francisco, California**

Meeting Notes

Meeting Participants

- Dr. Paul Anastas
- Dr. Nicholas Ashford
- Dr. John Balmes
- Dr. Eric Beckman
- Dr. William Carroll
- Dr. Gail Charnley
- Dr. Richard Denison
- Dr. Daryl Ditz
- Dr. Michael Dourson
- Dr. Ken Geiser
- Dr. John Graham
- Dr. Neil Hawkins
- Dr. Lauren Heine
- Dr. Vistasp Karbhari
- Dr. John Peterson Myers
- Dr. Mary O'Brien
- Dr. Barry Trost
- Dr. John Warner
- Dr. Michael Wilson
- Dr. Katy Wolf
- Anne Baker, DTSC
- Kathy Barwick, DTSC
- Maureen Gorsen, DTSC
- Don Owen, DTSC
- Jeff Wong, DTSC
- Emerson - facilitator

Visitors:

Robert Reinhard, Morrison Foerster
Claudia Polsky, California Department of Justice
Arlene Blum, UC Berkeley
Paul DeLeo, The Soap & Detergent Association
Diana Graham, Keller & Heckman
Greg Gorder, Technology Sciences Group
Nancy Noe, Johnson & Johnson
Ann Blake, EPHC
Virginia St. Jean, San Francisco Department of Public Health
Jennifer Harris, XenoPort
Joanne McFavlin, SULG
Meg Schwarzman, UC Berkeley/COEH

Randy Fischback, Dow Chemical
Joe Gregorich, ACA
Sandy McDonald, UC Berkeley
Fareed Ferhut, CIWMB
Caroline Scruggs, Stanford University
Ansje Miller, Center for Environmental Health & CHANGE
Dana Smirin, Consultant
Andria Ventura, Clean Water Action
Andrea Lewis, Cal/EPA
Luis Cabrales, CCA
Sara Schedler, Friends of the Earth
Neil Gendel, Healthy Children Organizing Project

Meeting Objectives

- Finalize the mission/vision statement
- Hear from DTSC about stakeholder input received and understand the next steps.
- Hear about the Cal/EPA Environmental Education Initiative.
- Allow for public comment to the SAP.
- Hear reports from the five SAP subcommittees.
- Understand the SAP work process through June 2008.

Welcome/Introduction

- DTSC Director Maureen Gorsen welcomed everyone to the meeting and introduced SAP Chair Dr. John Warner and Vice-Chair Dr. John Balmes.
- John Warner welcomed participants reviewed the challenge presented to the SAP; John Balmes followed by saying a few words about the desire of Californians to see an improved chemicals policy. Dr. Balmes also referenced the new University of California report authored by SAP member Dr. Michael Wilson, entitled “Green Chemistry: Cornerstone to a Sustainable California.”
- Participants introduced themselves.
- Meeting notes from the November 27, 2007 SAP meeting were reviewed, amendments suggested, and approved with the recommended changes. Recommended changes included:
 - Adding Dr. Carroll to the list of attendees
 - An editorial revision with respect to relative toxicity
 - Nonsubstantive editorial revisions
- Today’s meeting agenda was reviewed; no revisions were made.
- Emerson reviewed the ground rules for today’s meeting.

Review and Approval of Mission & Vision Statements

- The revised mission/vision statement was reviewed. Additional changes were made to the wording, and the mission/vision statement was approved with the requested changes.

Presentation and Discussion: DTSC Director Maureen Gorsen

- Director Gorsen gave a brief presentation, entitled “Next Steps.” Included in the presentation was a specific set of questions to the SAP, as follows:
 - What is the state of the science of producing green chemicals?
 - What is the state of the scientific training related to the design, production, and use of green chemicals?
 - How would you incorporate the following into the policy framework:
 - Data
 - Alternative Analysis
 - Research and Development
 - Ph.D. Programs
 - Education and the Environment Initiative
 - Community Colleges
- The discussion included a number of topics and ideas, including:
 - The need to fully exploit the significant talent present on the SAP;
 - Scoping issues;
 - Further clarification of the goals of the SAP, pursuant to Director Gorsen’s need for advice;
 - Reconciliation of the work conducted to date by the SAP, particularly with respect to the subcommittees, to the further clarification of the goals presented by Director Gorsen;

- More clarification by Director Gorsen with respect to the development of a variety of green chemistry frameworks; and
- The possible role of the SAP in reviewing the DTSC's green chemistry options report.

Other comments included:

- An observation that much of the discussion has been around the supply aspect of green chemistry and the need to also focus on demand.
- Acknowledgment of the political context of this effort.
- The potential to develop "First Principles" for evaluating green chemistry options.
- Several observations from SAP members regarding their desire to contribute meaningful and helpful advice to Director Gorsen.
- A SAP member proposed a possible structure or framework for the SAP's work including these basic ideas:
 1. willingness to change, bolstered by knowledge of alternatives;
 2. opportunity or motivation
 3. building capacity for the movement to green chemistry
- Proposal to establish another committee to build a policy framework, noting three policy frameworks suggested to date (UC report "gaps;" supply/demand framework; and the three items noted above).
- A request from agency staff to help us develop a baseline, and to help identify not just the "what," but also, who, when, where, why, etc.
- Possible need for a problem statement.
- Observation that "the industry" is not monolithic.
- Observation that the term "green chemistry" isn't quite right; that this effort also includes chemicals policy; and a suggestion to include this on a SAP meeting agenda.

With respect to the Options Report, Director Gorsen responded with a request to the SAP to think further about *frameworks* for green chemistry, and noted that the options report could be used as background for this effort.

Presentation: Andrea Lewis, Assistant Secretary, Cal/EPA

Ms. Lewis presented information about the state's Education and the Environment Initiative, and encouraged SAP members to contribute to the effort.

Public Comment

Visitors were invited to present their comments to the SAP. Emerson reviewed the ground rules for the public comment portion of the agenda. The following is a list of commentors and a summary of their comments.

- Paul DeLeo, Soap & Detergent Association: Mr. DeLeo suggested that the SAP should recommend relevant metrics (public health metrics, such as biomonitoring).
- Randy Fischback, Dow Chemical: Mr. Fischback's comments focused on the need to have a comprehensive, rather than piecemeal, chemicals program. Noting that the Dow Corporation considers Green Chemistry as including energy, toxicity, waste reduction, renewable resources, transportation security, and efficacy, he noted and approved the

movement within “green chemistry” from a narrow focus on toxicity toward “life cycle analysis.”

- Andria Ventura, Clean Water Action: Ms. Ventura stated her appreciation of DTSC and Cal/EPA in establishing the Green Chemistry, and her respect for the expertise of the SAP members. Ms. Ventura stated that she is concerned about the role of the SAP, and whether or not it would be called on to establish the framework for California policy. Ms. Ventura suggested that any policy should be based on the needs of the environment, protecting public health, and growing a sustainable economy. There is concern that California is losing its competitive edge in this area, due to progress in Europe and other countries.
- Robert Reinhard, Morrison & Forster: Mr. Reinhard noted that the Federal Trade Commission has issued a warning regarding “green” labels on products. He noted that it is a challenge to explain science to the public, and asked for the SAP to help explain the outcome of the Green Chemistry Initiative process to the public, in order to refrain from creating unrealistic expectations.
- Claudia Polsky, California Attorney General’s Office: Ms. Polsky would like to see the SAP establish principles for intellectual independence in green chemistry research, noting that public funding is scarce, and that there is the need for public/private partnerships. A second suggestion was that the SAP not apply any political filter to its work. Ms. Polsky’s third point was to answer the question of whether the SAP should engage in broader public policy issues (as brought up in earlier public comments); her response was, yes—DTSC should give deference when appropriate (e.g., with respect to scientific issues). Finally, there was further discussion with the SAP about “intellectual independence.”
- Dana Smirin, Consultant: Ms. Smirin encouraged the SAP to bring the conversation to the financial industry. Ms. Smirin that green chemistry is an aspect of compliance for the portfolio companies within funds such as CalPERS. There is a need to reach out to the design community. Ms. Smirin noted that the United States is behind the curve with respect to green chemistry, but that its strengths are that it is “risk capable” and has a culture of innovation.
- Ansje Miller, Center for Environmental Health and CHANGE: Ms. Miller noted that the SAP is advising a public agency on a path forward. Ms. Miller asked the SAP to think about its role as “science in the public interest” and not in the interest of any represented company’s bottom line. The focus should be on science. Ms. Miller noted that a framework was submitted to the SAP by CHANGE and requested feedback on that framework.
- Gretchen Lee, Breast Cancer Fund: Ms. Lee expressed support for earlier comments, and expressed respect for the work of the SAP. Ms. Lee expressed some confusion about the role of the SAP and recommended that it be clarified, suggested that the SAP consider the most important things to address, suggested that the agency’s questions for the SAP be consistent, and expressed concern that the SAP’s advice might be overly weighted.

There was some general discussion about the SAP’s work with respect to policy and science.

Subcommittee Reports

The SAP discussed the established subcommittee framework and how to move forward. Each of the five SAP subcommittees reported to the SAP. The short descriptors below do not necessarily reflect the full scope of each subcommittee, as work had just begun.

Subcommittee 1: Data & Related Themes

Drs. Carroll and Denison have been designated as co-conveners. The name of the subcommittee is revised to *Subcommittee on Data Needs and Availability*. The group will focus on what data are available, and who has access to data.

Subcommittee 2:

Drs. Ashford and Dourson have been designated as co-conveners. The name of the subcommittee is revised to *Advancing Green Chemistry and Engineering through Alternatives Assessment*. The group will be looking at relative risks, benefits and costs, and the issues of moving from full characterization of risks to looking at achieving functionality at lower risks and costs. The group noted a link to Subcommittee 3's work (barriers/incentives).

Subcommittee 3:

Dr. Daryl Ditz was designated as the chair, with Dr. Bill Carroll as assistant chair. The name of the subcommittee is *Advancing Green Chemistry Through Evaluation of Incentives and Barriers*. The group is starting with a review of existing information, and discussions about what works, and what doesn't, regarding the advancement of green chemistry.

Subcommittee 4:

Dr. Kenneth Geiser will chair this subcommittee, which is called *Advancing Green Chemistry through Education and Information Dissemination*. Initial discussions included the possible addition of business schools to the topic, and the need for a "world class informational portal" for green chemistry information.

Subcommittee 5:

Dr. Paul Anastas will chair this subcommittee, called *Advancing Green Chemistry Through Science and Technology*. Initial discussions included the need to identify short-, mid- and long-term objectives.

Review of the SAP process

Dr. Balmes reviewed the SAP process, including the work of the subcommittees, and the potential for a "writing group" to work on the final SAP product. A crosscutting group to integrate subcommittee work was established and titled the "Synthesis Committee" (subcommittee #6), with membership consisting of the leadership of each subcommittee. The SAP agreed that the work of the Synthesis Committee should begin immediately, in order to organize and coordinate the subcommittee work.

Adjournment

The meeting was adjourned at 4 pm.