JUDICIAL COUNCIL OF CALIFORNIA
ADMINISTRATIVE OFFICE OF THE COURTS
455 Golden Gate Avenue
San Francisco, California 94102-3688

Report

TO: Members of the Judicial Council

FROM: Science and the Law Steering Committee
Hon. Ming W. Chin, Chair
Rod Cathcart, Committee Counsel, 415-865-7834

DATE: January 10, 2006

SUBJECT: Judicial Branch Education: Recommendation for Judicial Education on Science and Technology (Action Required)

Issue Statement

The rapid and consistent evolution of science and technology and their impact on society are creating new challenges for the California judiciary. Maintaining and improving the professional competency of the California judiciary requires that the judicial branch, in its leadership role in education, take the next step by establishing and administering a statewide judicial education plan on science and technology.

Recommendation

The Science and the Law Steering Committee recommends that the Judicial Council establish a statewide judicial education plan on science and technology by

1. Approving the following guidelines for judicial education on science and technology, congruent with the ethical standards applicable under the California Code of Judicial Ethics:

   A. Judicial education on science and technology should be made as widely available as possible to the California judiciary, including appellate justices, trial judges, subordinate judicial officers, and judges participating in the Assigned Judges Program, to assist them in their evaluation of scientific evidence and expert testimony, and to further the administration of justice.

   B. The focus of judicial education on science and technology should be on increasing the "science literacy" of jurists in subject-matter areas that arise in the courtroom and court administration, including, but not limited to, the following key areas:

(1) Computer Science and Digital Technology—education to assist in the evaluation of technological evidence, the presentation of evidence in the courtroom, and the use of computers in case and court administration.

(2) Medical Science—education to assist in the evaluation of medical evidence and physician testimony.

(3) Pharmacology—education on drugs to assist in the evaluation of addictive disorders and treatment issues.

(4) Genetics—education on DNA and related science such as biochemistry and molecular biology as it relates to identification, privacy, predictive behavior, and other forensics issues.

(5) Environmental Science—education to assist in the evaluation of environmental issues, including the California Environmental Quality Act (CEQA), land use, and water rights cases.

(6) Agricultural Science—education on agronomy, genetically modified foods, and agricultural engineering.

(7) Science and Business—education on commercial applications of science, such as biotechnology, nanotechnology, and other high-technology industries, as well as privacy issues implicated by certain applications.

(8) Physics and Engineering—education on science underlying failure analysis, accident reconstruction, and forensics.

C. The educational framework for study of each of the key subject-matter areas should include the following components:

(1) Glossary and vocabulary builders.

(2) Primers for scientific literacy on the application of concepts and principles relating to life science, physical science, and technology.

(3) Explanation and analysis of the scientific method, such as the use of observational data and mathematics (e.g., probabilities and statistics) as it relates to judicial inquiry (e.g., admissibility, burden of proof) and legal issues that arise in cases (e.g., causation).

(4) Compendium of cases and statutes.

(5) Case management practices, tips, and techniques.

(6) Judicial ethics and fairness colloquy.

(7) Codes of ethics and conduct for physicians, scientists, engineers, and other scientific professionals (e.g., bioethics and medical ethics).

(8) Case studies and applications for different court assignments (e.g., civil, criminal, juvenile, family, probate and collaborative courts).

2. Directing the Science and the Law Education Committee, appointed by the Governing Committee of the Center for Judicial Education and Research (CJER), to:

A. Establish an ad hoc panel of judges and scientists to identify and consult on emerging issues in science and technology.

B. Develop a process for identifying and recruiting educators in science and technology who are able to communicate balanced information in plain English.

C. Liaison with the Judicial Technology Education Committee on judicial education.

D. Adopt a blended delivery mechanism for judicial education on science and technology.

E. Develop an online Science and the Law resource and Web site to give the judiciary access to a wide variety of materials.

F. With guidance from the Office of the General Counsel, build partnerships with scientific organizations and institutes of higher learning to maximize beneficial educational opportunities. Key considerations include the following:

(1) Potential partners share values consistent with those of the courts.

(2) Partnerships are structured to avoid actual or perceived conflicts of interest that could result from partnering with an entity

(a) That currently is, or is likely to become involved, in litigation before the court;

(b) That does or seeks to do business with the court; or

(c) Whose interests or the interests of its funding sources currently are, or are reasonably likely to come, before the court.

(3) Ethical considerations under the California Code of Judicial Ethics for judicial officers attending co-sponsored educational opportunities.

G. Cooperate and coordinate with the federal judiciary on judicial education.

Rationale for Recommendation

In February 2005, Chief Justice Ronald M. George established the Judicial Council Science and the Law Steering Committee to evaluate the general needs of the courts, including guidance in developing effective education strategies and pertinent educational content on a variety of projects. In addition, the Chief Justice appointed Judge Michael T. Garcia to chair the Science and the Law Education Committee, whose members were appointed by the CJER Governing Committee to oversee continuing judicial education in science and the law with guidance from the Steering Committee.

Both committees planned and produced California's first Science and the Law Conference, held on October 6–9, 2005, at the Salk Institute, which is summarized in the attachment. Prior conferences held in 1999 and 2002 were co-sponsored with the Einstein Institute for Science, Health and the Courts with a more restricted focus on genetics and the courts.

At the California Science and the Law Conference, data was collected from approximately 100 participants who met in 10 focus groups to discuss the type of science education that would be most beneficial to the California judiciary, and the ways of delivering that education most effectively, given limited state resources. Clearly, science in the California courts is broader than genetics alone.

In support of the recommendation, the Judicial Council is asked to consider the following arguments:

1. Scientific issues are increasingly affecting the courts with regard to types of cases, evidence, and quality of expert testimony.

2. Policies that influence judicial education on science and technology should be coordinated across the California judicial branch.

3. Judicial education in science and technology enhances public trust and confidence in the judiciary by assisting the courts in meeting challenges created by the rapid and consistent evolution of science and technology, while managing expectations created by TV pop culture.

4. Judicial education in the use of courtroom technology in case management and the presentation of evidence creates efficiencies and cost savings.

5. Foundational education on science generally, and in specific subject-matter areas, will counterbalance a "fear factor"—the pervasive discomfort reported by many jurists concerning science and technology.

6. The goal of increasing the "science literacy" of the bench is consistent with the California Code of Judicial Ethics.

   A. Jurists have different knowledge and experience levels about science and technology.

   B. Jurists need education on their ethical responsibilities about their understanding of and ability in science.

7. Jurists reported science's issues in the courtroom for criminal, civil, family, juvenile, probate, mental health, and collaborative court assignments.

8. The initial subject-matter categories reflect what jurists reported as the types of cases they have handled during the past year that brought science into the courtroom.

9. The California and federal judiciaries share common goals with respect to judicial education on science and the law.

Alternative Actions Considered

The Science and the Law Steering Committee evaluated California's participation in the Advanced Science and Technology Adjudication Resource (ASTAR), a multistate consortium of the judiciaries of California, Maryland, and Ohio. The goal of ASTAR is to provide "resource judge certification" to a limited number of judges in advanced bioscience and biotechnology. After considerable thought and analysis of the consortium model, the Steering Committee decided to move in a different direction than "resource judge certification." The focus group data from the Science and the Law Conference indicated that the California judiciary's immediate educational need was to support foundational education on science in key subject-matter areas.

Comments From Interested Parties

We have received input from the Science and the Law Steering Committee, the Science and the Law Education Committee, presiding judges, and 10 focus groups held at the 2005 Science and the Law Conference in October. Additional input will come from three regional roundtable discussions on science and the law planned for 2006, which will include participation by the judiciary, attorneys, academics, scientists, and forensic experts.

Implementation Requirements and Costs

A plan for judicial education on science and technology can be phased in and funded through the existing funding structure for the Education Division/CJER of the Administrative Office of the Courts.

Attachment

2005 California Science and the Law Conference
October 6-9, 2005
Conference Agenda

Thursday, October 6

REGISTRATION
11:00 a.m.–1:00 p.m. ■ Hyatt Regency La Jolla Foyer

"BASIC GENETICS"
1:00–1:50 p.m. ■ Aventine Ballroom, Sections D–G
Linda Ashworth
Geneticist, Biology Department,
California Polytechnic State University

"BASIC BRAIN"
2:00–3:00 p.m. ■ Aventine Ballroom, Sections D–G
Thomas D. Albright, Ph.D.
Professor, Vision Center Laboratory, The Salk Institute

Shuttle to the Salk Institute ■ 3:00–4:00 p.m.

"SCIENCE AND THE LAW CONVOCATION LECTURE"
4:00–5:00 p.m. ■ Salk Institute Amphitheatre
Hon. Ming W. Chin
Associate Justice, Supreme Court of California

Reception ■ 5:00–6:00 p.m.
Salk Institute Brick Courtyard

Dinner With Keynote Speaker ■ 6:00 p.m.
Salk Institute Foyer

WELCOME REMARKS ■ 6:00–6:10 p.m.
Inder M. Verma, Ph.D.
Professor, Laboratory of Genetics, Salk Institute; Member, National Academy of Sciences

KEYNOTE LECTURE ■ 6:10–6:30 p.m.
"SCIENCE AND THE COURTS"
Hon. Ronald M. George
Chief Justice, Supreme Court of California

Shuttle to the Hyatt Regency La Jolla ■ 7:30 p.m.

Friday, October 7

Shuttle to the Salk Institute ■ 8:00 a.m.

BIOSCIENCE AT SALK—THEME LECTURES
9:00 a.m. ■ Salk Institute Amphitheatre

"PITFALLS AND PROMISES OF GENE THERAPY"
9:00–9:45 a.m. ■ Salk Institute Amphitheatre
Inder M. Verma, Ph.D.
Professor, Laboratory of Genetics, Salk Institute; Member, National Academy of Sciences

"NICOTINE AND ADDICTION: WHAT DOES IT DO TO OUR BRAIN?"
9:45–10:30 a.m. ■ Salk Institute Amphitheatre
Stephen F. Heinemann, Ph.D.
Professor, Laboratory of Molecular Neurobiology, Salk Institute; Member, National Academy of Science

Refreshment Break ■ 10:30–10:45 a.m. ■ Salk Institute Amphitheatre

LAB TOURS BY POSTDOCTORAL FELLOWS
10:45 a.m. ■ Salk Institute Labs

Box Lunch in Seminar Groups ■ 12:00–1:30 p.m.
Salk Institute Amphitheatre

Shuttle to the Hyatt Regency La Jolla ■ 1:30–2:00 p.m.

JUDICIAL EDUCATIONAL NEEDS ASSESSMENT—SEMINAR GROUP ACTIVITY
2:00–3:15 p.m. ■ Hyatt Regency La Jolla Breakout Rooms

Break ■ 3:15–3:30 p.m. ■ Hyatt Regency La Jolla Foyer

"FORENSIC DNA IN THE 21ST CENTURY"
3:30–5:00 p.m. ■ Aventine Ballroom, Section D–G
Hon. George W. "Woody" Clarke
Judge, Superior Court of San Diego County

Saturday, October 8

Continental Breakfast ■ 7:30 a.m. ■ Hyatt Regency La Jolla Lobby

Shuttle to the Salk Institute ■ 8:00 a.m.

LAB EXPERIMENTS LED BY POSTDOCTORAL FELLOWS
9:00 a.m.–12:00 p.m. ■ Salk Institute Amphitheatre

Lunch ■ 12:00–1:30 p.m. ■ Salk Institute Amphitheatre

BIOSCIENCE AT SALK—THEME LECTURES
1:30 p.m. ■ Salk Institute Amphitheatre

"STRESS: THE GOOD, THE BAD, AND THE UGLY"
1:30.–2:15 p.m. ■ Salk Institute Amphitheatre
Wylie Vale, Ph.D.
Head, Clayton Foundation Labs, Member, National Academy of Sciences and Institute of Medicine

"GENE DOPING—NUTRITION AND DIET"
2:15–3:00 p.m. ■ Salk Institute Amphitheatre
Ronald M. Evans, Ph. D.
Gene Expression Laboratory, Salk Institute

Refreshment Break ■ 3:00–3:30 p.m.

"HUMAN BRAIN IMAGING"
3:30–4:15 p.m. ■ Salk Institute Amphitheatre
Geoffrey Boynton, Ph.D.
Neurobiology Laboratories, Salk Institute

Sunday, October 9

Continental Breakfast ■ 7:30 a.m. ■ Hyatt Regency La Jolla Lobby

Shuttle to the Salk Institute ■ 8:00–8:30 a.m.

RESULTS OF SATURDAY LABS
8:30–9:30 a.m. ■ Salk Institute Amphitheatre

CLOSING LECTURES
Salk Institute Amphitheatre Foyer

"THE STANDARDS FOR DETERMINING THE ADMISSIBILITY OF EXPERT TESTIMONY"
9:30–10:30 a.m.■ Salk Institute Amphitheatre
Edward J. Imwinkelried
Edward L. Barrett Professor of Law, University of California at Davis

Break ■ 10:30–10:45 a.m.

JUDICIAL RESPONSE PANEL—STANDARDS FOR ADMISSIBILITY OF EXPERT TESTIMONY
10:45–11:45 a.m**.** ■ Salk Institute Amphitheatre
Hon. Mark B. Simons
Associate Justice, Court of Appeal, First Appellate District, San Francisco

Hon. Carol A. Corrigan
Associate Justice, Court of Appeal, San Francisco

Adjourn ■ 11:45 a.m.

CONFERENCE EVALUATIONS
Summary Highlights

- Great idea to have study groups led by judges and scientists/postdoctoral fellows. The instruction by postdoctoral fellows—experts in their fields—is very important to a complete understanding of the science and the processes used to produce the data they ask judges to accept during a trial. The postdoctoral fellows were a wealth of information and added significantly to the dialogue on science and the law. Instead of just judges teaching judges (not that there is anything wrong with that) the scientists also had an opportunity to learn what we do as judges. The exchange of information was invaluable.
- The DNA lab work was a tremendous learning experience and, frankly, just a lot of fun. Very good in helping to understand the exacting accuracy required in the technique, and in understanding that not all experiments work out the way one hopes. Many of the issues we hear deal with the lab methodology and basic scientific method. The labs helped me understand why the lawyers cross-examine about the actual performance of the test. It was apparent there are times during tests when the procedures are vulnerable to contamination.
- The lectures could, in some parts, have been more basic. Each started off with some simple concepts, but the concepts got more complicated, and the time constraints prevented a more in-depth presentation of these more complicated processes.
- It is difficult to blithely assert that the lectures were at the appropriate level—because these scientists operate at a level of scientific intellect, philosophy and intensity that is beyond most of us. That was, frankly, part of the extraordinary nature of the conference, because each of us was required to reach to a level of intellect that many of us, unfortunately, bypass amid the day-to-day work of life. And the fact that by the end of the conference we were each able to comprehend much of what we learned was a true accomplishment. I think there are times in life when one must reach to comprehend, and to have "dumbed down" the program would in my opinion have lessened its impact.
- I was really astounded at what great communicators these folks were. I came to the conference fearing that they would be brainiacs in lab coats, unable to explain anything in lay terms. In fact, what I learned is that the best scientists have to be able to move across all groups of people, and these people could do that. They clearly know their fields. Prepared…engaged…great materials.
- Would be nice to have the opposite view, I mean, to encourage the PhDs to learn more about the law, visit the court, and learn about how science can be of help.
- Please keep the focus on challenging us to be inspired by the works of others and our ability to grasp, to the best of our abilities, a little bit of the vision of these amazing people. We have lots of training opportunities where we get to focus on how to

manage our courtrooms, but very few that really take us to another place. Thank you for the inspiration I took away from Salk.

- Cover more basic science in other disciplines. For example: engineering, chemistry, psychology, physics, and computer/electronics. I thought that some of the most helpful stuff was the basics of the science as it gave us a good idea of what the issues/questions were. What about a topic like what is "science" knowledge as opposed to "expert" knowledge. It might also be helpful to have a discussion of "junk science" from a legal perspective.
- Maybe the CJER Institute model would work for future science and law programs. If a week-long institute was set up, a number of different scientific disciplines could be invited to present lectures. These could be complemented by panels of judges, attorneys, and/or legal scholars who would discuss the various legal issues raised by the cutting-edge of science.
- The Science and the Law Conference was one of the most interesting judicial educational programs I have attended in over 25 years on the bench. In baseball, a grand slam!
- Look to issues that are in courts now to mix with some of the more cutting-edge lectures. Maybe try a mock Kelly/Frye hearing using some of the scientists or the seminar groups. The concept of each of us learning to "understand" the thinking process of the other is invaluable, and I think having the conference at a location such as Salk adds to the feeling of dedication in one's participation on the program. I would be more than willing to dedicate any time and talents I possess to planning a future conference such as this. My thanks to Justice Chin and all who assisted in the process.