



American Chemical Society

OFFICE OF THE PRESIDENT

Joseph S. Francisco
President-Elect, 2009
President, 2010
Immediate Past President, 2011

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February 16, 2009

To:

Henry Chesbrough, UC Berkeley, Haas Business School
Charlie Kresge, Vice President, Research and Development, The Dow Chemical Company
Pat Confalone, Vice President of DuPont and ACS Board of Directors
Robert Grubbs, Department of Chemistry, CalTech
Michael Lefenfeld, SiGNa Chemistry, President
Chad Mirkin, Department of Chemistry, Northwestern University
Kathleen Schulz, ACS Division of Business Development & Management
Tim Swager, Department of Chemistry, Chair, MIT
George Whitesides, Woodford L. and Ann A. Flowers University Professor, Harvard University

Dear Colleagues:

Since 2008, more than 20,000 jobs have been lost in the chemical enterprise in the United States, and more layoffs are forecast for the immediate future. Data show that chemical industries with more than 500 employees are showing significant decreases in new graduates hired, while employment is increasing in small businesses. ACS can help address unemployment issues by helping to foster more small businesses in the chemical enterprise. As you know, to strengthen our commitment and advance this process, I am appointing a Presidential Task Force on Innovation in the Chemical Enterprise: New Technologies for Society; New Jobs for Chemists. I am now formally asking that you lend your expertise by serving as a task force member.

The task force will consider actions that will stimulate innovation, especially innovation that leads to new companies and jobs, across the chemical enterprise. The goal of this task force is to ensure that the American Chemical Society is a leader in fostering new job opportunities for chemical professionals through support for entrepreneurial members who are passionate about starting viable new businesses, thereby increasing the number of small businesses in the chemical enterprise. A charter is attached for your information. Specifically the task force will:

- Identify current ACS programs aimed at entrepreneurs and understand their impact
- Promote the creativity and ingenuity of our future generation by providing appropriate training for those starting new businesses in the chemical enterprise
- Support the success of new and established entrepreneurs
- Facilitate networking to advance entrepreneurship

Distinguished Harvard Professor and ACS Priestley Medalist George Whitesides has agreed to chair the task force, and our Executive Director and CEO Madeleine Jacobs will serve as staff liaison, with support from David Harwell and Sam Toba in the Division of Membership & Scientific Advancement. We anticipate that most of the work of this task force will be accomplished by teleconference, with one

face-to-face meeting. Madeleine will be in touch with you soon to set up a time for the first teleconference.

The ACS Congressional Charter obligates the Society to aid in the development of our country's industries at a time where the material prosperity of American citizens is challenged by the loss of jobs. We appreciate your willingness to serve on this important task force and look forward to your thoughtful contributions.

Sincerely,

A handwritten signature in black ink, appearing to read 'Joseph S. Francisco', with a long horizontal flourish extending to the right.

Joseph S. Francisco

cc: Denise Creech
David Harwell
Madeleine Jacobs
Flint Lewis
Samuel Toba

TASK FORCE ON INNOVATION IN THE CHEMICAL ENTERPRISE: NEW TECHNOLOGIES FOR SOCIETY; NEW JOBS FOR CHEMISTS

TERMS OF REFERENCE

REPORTING

The task force will consider actions that will stimulate innovation, especially innovation that leads to new companies and jobs, across the chemical enterprise.

It will provide a written report to the President and Board of Directors of the ACS. The report may ultimately be disseminated more broadly, in some form, to industry, government agencies, foundations, and universities.

PROBLEM

Many of the most important problems in society—both practical (climate change, management of carbon dioxide, generation, conservation, and management of energy, providing potable and agricultural water, curing or preventing major diseases, reducing the costs of healthcare, stabilization of developing regions, green technologies) and intellectual (the nature of life, the origin of life, complex and dynamic systems, materials by design, the basis for sustainability)—depend on chemistry for their solutions.

In this period of opportunity, chemistry (considered broadly to include all professions that have a major component of chemistry, including molecular chemistry and biology, chemical engineering, materials science and engineering, medicinal chemistry, environmental science, and others) has become conservative and risk-averse:

- Large companies making up the chemical industry no longer consider innovation and the introduction of new classes of products to be part of their business plan and are focused on relatively near-term financial metrics, on regulatory compliance, on industry consolidation, and on managing capital.
- Innovation leading to small startups is not a significant part of the culture of chemistry.
- The pharmaceutical industry finds it increasingly difficult to develop new, profitable drugs.
- Universities, their sources of support, and the peer-review system are, in general, also conservative.

As a result, the chemical enterprise is less successful than it might be at

- providing society with technical options for solutions to some of its most important problems,
- creating new opportunities and jobs for scientists and engineers,
- generating new, high-margin, proprietary business areas,
- creating new jobs across the economy.

THE TASK FORCE WILL

- define impediments to innovation in chemistry, and especially to types of innovation leading to the creation of new jobs in new companies or business areas. This definition should consider education training, cost of capital, governmental influences through tax, regulation, and patent policies, and the structure and culture of the research enterprise in universities, national laboratories, and industry.

- recommend changes that will encourage invention and early-stage innovation in research laboratories, and mechanisms for translating the resulting innovations into commercial reality.
- provide examples of areas and enterprises in which innovation and creation of new jobs have been successful.
- suggest the status of the United States in innovation in a globalized world, especially in innovation, translation of knowledge into jobs and products, and recruiting technical talent.
- suggest areas of chemical science where innovation may be especially fruitful.
- suggest metrics and incentives for innovation.

OUTCOMES

The task force will propose practical, implementable actions that will

- identify and help to train potential young entrepreneurs in chemical sciences in the processes needed to translate chemical science into new products and commercial chemistry.
- suggest possible mechanisms to provide seed funding for their activities.
- suggest methods of introducing societally important problems into the chemical enterprise.
- assign/suggest specific tasks for the American Chemical Society and for other organizations (the American Chemistry Council, international chemical companies, government agencies, foundations such as the Gates Foundation, and venture capital groups) concerned with stimulating or using innovative solutions to important problems based on chemistry.

METHODS AND TIMELINES

The task force will have two or three meetings and conference calls as needed. It will call on experts in relevant areas as required.

This report will be based on the collective wisdom of the task force and those who work with it rather than a detailed collection of validated data.

The report will be completed and submitted to the President of the ACS by July 1, 2010. Revisions, briefings, external review and comment, and other activities may follow at his request.