



Dr. Katie Hunt, 2007 President of the American Chemical Society — 2-15-07

Dr. David Lemberg: Welcome to SCIENCE AND SOCIETY — our world, our well being, our future. SCIENCE AND SOCIETY is made possible, in part, by the generous support of the Chemical Heritage Foundation.

Our first guest is Dr. Katie Hunt, 2007 President of the American Chemical Society, the world's largest scientific society. The American Chemical Society is a non-profit organization chartered by the U.S. Congress with a multi-disciplinary membership of more than 158,000 chemists and chemical engineers. ACS publishes numerous scientific journals and databases, convenes major research conferences and provides educational science policy and career programs in chemistry.

Dr. Katie Hunt is an employee of Rohm and Haas in Spring House, Pennsylvania. She is leader of Technology Partnerships, Emerging Technologies for Rohm and Haas, and her background is in catalysis and in organic chemistry. In her 23 years in industry, Dr. Hunt has applied her background in these two areas across a broad range of electronics, materials, catalysis, hydrogen and healthcare. An ACS member since 1977, Dr. Hunt has been involved in numerous Society activities, including the divisions of analytical chemistry, industrial and engineering chemistry and in organic chemistry. Welcome, Dr. Katie Hunt.

Dr. Katie Hunt: Well, David, it's great to be here today.

Lemberg: Katie, thank you so much for being with us on Science and Society. And, of course, congratulations. Katie, you had mentioned in your article on becoming President in the [C&E News](#), you talked about chemistry being at a crossroads. Could we start with that? Tell us what you mean.

Hunt: Well, when I say chemistry is at a crossroads, I mean that if you just look around you or if you read, "The World Is Flat," by Thomas Friedman, you can see that globalization is upon us, and there's no turning back. And for me, I'm not ready to turn back. I'm really ready to go on because I think we have so many exciting issues and problems that chemistry can help us address, from energy, food and water that I think it's time for us to look forward, rather than look back. And so, what I've been telling our members is it's time for us to re-ignite our commitment to science and technology.

Lemberg: Yes, very much so. And so, backing up a bit, if we're looking to the future, of course, we need more chemists and chemical engineers and more scientists, all together. So, could we talk about science being really a requirement, not an elective for students and for all citizens?

Hunt: Yes, it's really important for us to understand how science impacts our daily lives. It's in everything from nutrition and making good food choices, in the medicines we choose. And right now, when I look at it, I see federal funding going away from the physical sciences. And when that happens, the students go away from the physical sciences. And so, that's really the problem and the solution and why I think we need to re-invigorate our communication with students about the importance of science.

Lemberg: Katie, thank you. Could you say more about federal funding being part of the solution?

Hunt: Well, as I look it, when I go to Capitol Hill and I talk to legislators, I say, "Well, you know, I have a 15-year-old son and he's interested in science. And I'd love him to have a job in the U.S. in science, if that was his choice."

And in order for that to happen, we need really from all levels, from the legislators, to the media, to the public, to recommit to investing in science and to see that it is an investment, in that it pays back. And one of the groups I work with is called the Council for Chemical Research. And we've done a study, which actually shows that work that's done in academic institutions is built upon by industry and turned into the commercial products we use today, from the Internet, which started with funding from DARPA, the Department of Defense, to some of the wonderful medications that we're using today.

So, what we're looking at is talking with federal agencies, talking with legislators and reinvesting in our premier research agencies, like the Department of Energy, like the National Institute of Health, like the Department of Defense because they do do very, very interesting research. Again, I sort of harken back to the information technology research that gave birth to the Internet.

Lemberg: Katie, thank you. And could you say more about how the U.S. can stay competitive with other nations who are, in some ways, they're ahead of us, certainly in science, math education, like India and China.

Hunt: Well, certainly. I'm sure some of your listeners are with the "Rising Above the Gathering Storm" Report.

There are a number of CEO's, some retired. Norm Augustine, for example, who got together and said how can we address the gaps that are developing here? And it really started by looking at education, you know, K-12 education because if you don't get the kids when they're young, you don't get them into science usually. So, you need to get them when they're young and then, bring them through high school and through college and through graduate school. So, it's investment in education, it's also investment in partnerships between industry and academia because what's happening in the industrial world, well, anyone who invests in the stock market wants fast

returns. And so, usually, chemical research and medical research takes a long time to come to fruition and be profitable. So, it's important for us to partner with the government to put that funding in and build a solid foundation.

Lemberg: Katie, thank you. So, let's look at the students, and I understand you frequently visit science classrooms. Could you share with us what you'd like students to know about chemistry?

Hunt: Oh, well, first of all, I want them to love it, not just like it. And I want them to see how it's applicable to their daily lives. And a lot of people will say to me, "What do you tell them when you go in?" And I say, "Well, I really don't like to do as much telling as doing, and to really engage them in hands-on experiments."

So, one of the things I work on, which usually gets all kinds of reactions is I start with baby diapers because the first thing I worked on over 20 years ago at Rohm and Haas was super-absorbent polymers, which are actually in baby diapers.

And so, what we do with the kids is we take the diapers. Once they realize they're unused diapers, we take them apart and we get out the gel that's inside. But, we have them wear safety glasses and goggles and understand that they need to respect the materials they're working with. But, when they understand them, there's not a fear involved. There's a familiarity and an understanding.

And I loved it when the kids can then make the jump to how these materials could be used elsewhere. I said, "Do you guys ever go on vacation? Who waters your plants?" And you can take that super-absorbent polymer and mix it in small amounts, into your potting soil. And that will enable the dirt to stay moist and the plant to cause the potting soil to become salty when it's dry and, therefore, release the water while you're gone. That's to really help them see how things they have around them can be used in many different ways. And then, I ask them, "How else could this be used?"

Lemberg: What kinds of things do they say?

Hunt: Well, actually, one thing we did was we put this gel in a vial, in a little bottle, and we added water. And when it did that, the polymer swells up. And then, when you add some salt, it releases the water. And in one case, when we added one of the salts, it caused the bottle to get cold, which is an endothermic reaction. And one of the boys in the class said, "Wow, is this what happens when you break those packs open and you have those cold packs, if you sprain your ankle?"

And I said, "That's exactly the phenomenon that's happening here." It's probably not this exact reaction, but it's that exact phenomenon of an endothermic reaction that requires heat. And it was the heat from your hand that made that reaction go.

Lemberg: Katie, thank you. Let's talk about chemists and really the possibility of chemists as individuals and as organizations, educating the public about chemistry and really taking on some public relations activities.

Hunt: Yeah, well it really hit me when I went out and talked at a local Science Honor Society, just eight miles down the road from me here in Spring House, PA. And as I was speaking to the parents and the students, and certainly, these students are already predisposed to science or they wouldn't be in the Society. But afterwards, after I had talked maybe 15 or 20 minutes about the work I do and the partnerships I build and how our teams are involved, and alternative energy and how Rohm and Haas sells resins to purify water . . . there were 800 scientists here at the location where I work.

The parents came up to me afterwards and said, "We had no idea that so many things were based on chemistry. We had no idea there was so much opportunity. We've been trying to talk our daughter out of being a scientist. And you've convinced me we shouldn't do that." So, I look at that and say if all 160,000 of our members went out and talked to people about science, what an impact we could have.

And then imagine if we collaborated with sister societies like the National Academy of Sciences and the American Institute of Chemical Engineers. We could have a huge impact.

Lemberg: Katie, this is a great opportunity. So, if I may, I'm wondering what kinds of action steps are being taken to make that real.

Hunt: The ACS has national meetings and we get about 15,000 attendees to meetings like that. We have one in Chicago this year and one in Boston. And we're reaching out at those meetings to these other societies. At the same time at our regional meetings, we're trying to develop the same kinds of collaborations, and with the idea of going as teams and writing letters. So, maybe not everyone can go to Washington, and maybe not everyone's going to go to their Congressional office. But, they could also write letters. And we actually have on our ACS website something called our Legislative Action Network. And there, you can go in and put in your ZIP Code and generate a letter to your legislators on important topics in science that they have under consideration right then and there.

And I have to say that when I go into Washington, when I go out and talk to people, I ask them how many of them write letters to their Congressional representatives? And there are always a few. And I say, "Well, I'll tell you what, when they hear from you, it makes a difference because you don't write. So, if you start now . . ."

For instance, in January, there were over 1000 letters written to the President, asking him to include science and technology in the State of the Union. And last year for the first time, the White House invited ACS to come preview the speech. So, it makes a difference. And I think we have some wonderful innovation and competitive legislation up this year. And so, if there was ever a time for us to get together and speak up, that time is now.

Lemberg: Yes, that time is now. Katie, thank you. Well, I understand that one of your topics at the upcoming ACS meeting in March in Chicago is sustainability of energy, food and water. I mean, these are critical issues across the board. Could you say more about this?

Hunt: Well, I'm really excited, if you can't tell from my voice, about this upcoming . . . this is Presidential programming that we're putting in place. And on Sunday, we're going to do a session on Sustainability – A World View. And we're inviting people from government and industry and academia to come and speak to that this is not just an issue . . . for instance, water is not just an issue in developing countries. It's an issue right here in the U.S.

And it's a global issue. Or, maybe I should say it's a worldwide issue. And it really, I want chemists to realize that they can impact this. On Monday morning, we're doing a session called Pressing Challenges and Technology Opportunities, to really start bringing that home. And then, in the afternoon of Monday, we're going to have Educating For Sustainability.

And I'm bringing in, for instance, Susan Olesik from Ohio State University, who has a program where her student affiliates get involved with local scientists and go into elementary schools to talk about science.

I'm going to have someone from the Center for Water in one of the Illinois universities and someone from the University of California at Davis, Tom Tomich, is going to talk about setting up for the first time, a Center for Sustainability, which goes across the entire university. And I find this especially interesting because I went to UC Davis for graduate school, so just so many good touch points here. It sort of feels like things are converging and coming together, and I'm hoping for wonderful things.

Lemberg: Katie, thank you. So, I'm wondering about action steps after the conference.

Hunt: Excellent, excellent lead in. For the first time, I'm also having a website for the Office of the President at the American Chemical Society, and I'm intending to post videos of these three sessions that I just talked about, along with some others. And then, to start a dialogue. Each of these sessions will have a panel discussion piece, so it's not just all presentation. And the idea is to follow up these questions that we bring forward at the meeting via dialogue over the web, so that we aren't just virtuous, but we're virtual teams.

Lemberg: Could we talk a bit about some additional policy issues that you think are important over the next couple of years?

Hunt: Well, I think that one of the things that we do at the American Chemical Society, we do have a page where we have about 20 different policy statements posted. And we have them referring to things like global warming. And the reason we post these policy statements, one, it's because we believe in them, but two, because the individual members, if they feel they don't know how to put a whole "leave-behind" together, they can go out to the web, print that out and take it in with them. And so, they can have their talking points right there in front of them and good references, good people to call.

So, I think education at all levels, I think collaboration to make sure that the funding opportunities that are out there were together collaboration. So, I especially like it when I see funding opportunities that require you to have industry and academia involved because it brings that continuum together. And then, of course, it's all about innovation. I like to think that I've

survived, you know, different cutbacks at Rohm and Haas by reinventing myself, by always looking ahead and developing and looking for new ideas. So, when I started out as an inorganic chemist, as you stated in the beginning, I've done things from polymer chemistry to healthcare, to electronics materials. And so, for me, it's all about what chemists do is find gaps and find solutions.

Lemberg: Katie, thank you. So, education, collaboration, and innovation, these are really the three pillars upon which you're basing your term as President of ACS.

Hunt: Yes, absolutely. And I use the term, "education," broadly. It's, in some sense, engagement, engagement of a set of legislators, of the media because I see folks like yourself as being people that we can talk to who can help us get our message out. And the public because I think it's important to them. And then, especially for me, having a 15-year-old son, the next generation. And looking at sustainability and the sustainability of our planet. And leaving this world in a better way for our children in the next generation.

Lemberg: Katie, this is great. Thank you. Well, time for a last question.

Hunt: OK.

Lemberg: If you look from the future, backward, if you look back on your term as ACS President, what are the things that you're most proud of accomplishing?

Hunt: Oh, I think if I look back, what I like to see is that what I did was sustainable in every way. Not that I just put new programs out there that lasted for one year, but that when I look back that I will see that chemists and chemical engineers and scientists and technologists at all levels have been encouraged to communicate with their legislators. And that the image of chemistry is a positive one.

Lemberg: Katie, thank you so much for being with us and thank you for a terrific conversation today.

Hunt: Well, it was a pleasure speaking with you.

Lemberg: Thank you. Our guest is Dr. Katie Hunt, 2007 President of the American Chemical Society, the world's largest scientific society. Thanks for being with us on Science and Society.