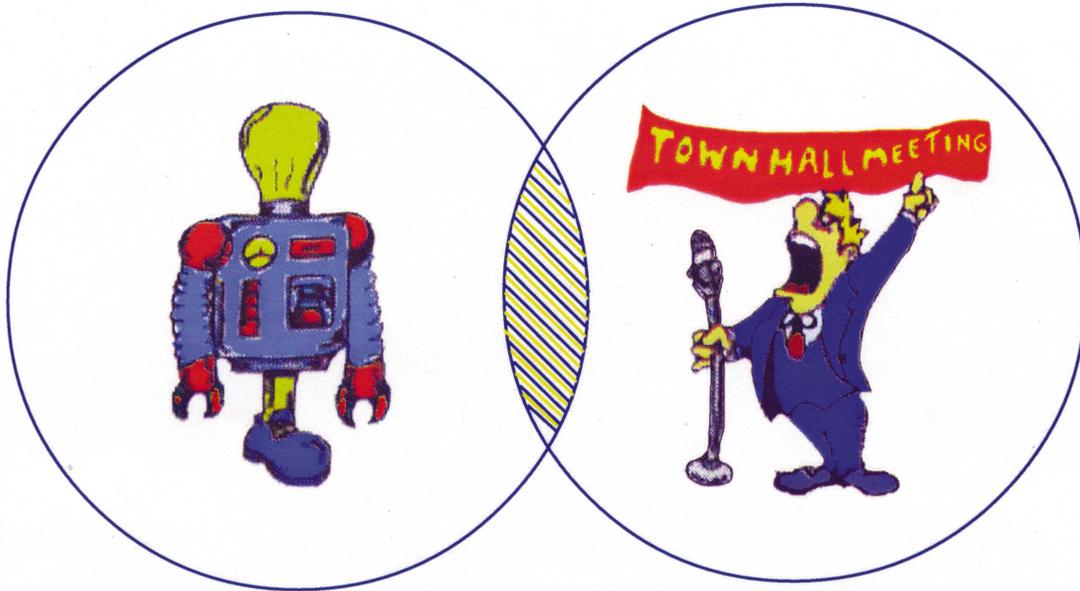


**“WHEN SCIENCE BECOMES CIVIC:
*Connecting Engaged Universities and
Learning Communities*”**



*Proceedings of the Second Annual
California Communities
Coordinating Conference*

**September 11 - 12, 2001
University of California, Davis**



UNIVERSITY of CALIFORNIA
**Agriculture &
Natural Resources**



UNIVERSITY OF CALIFORNIA

The University of California prohibits discrimination against or harassment of any person employed by or seeking employment with the University on the basis of race, color, national origin, religion, sex, physical or mental disability, medical condition (cancer-related), ancestry, marital status, age, sexual orientation, citizenship, or status as a Vietnam-era veteran, or special disabled veteran.

The University of California is an affirmative action/equal opportunity employer. The University undertakes affirmative action to ensure equal employment opportunity for underutilized minorities and women, for persons with disabilities, and for Vietnam-era veterans, or special disabled veterans.

University policy is intended to be consistent with the provisions of applicable state and federal law. Inquiries regarding this policy may be addressed to the Affirmative Action Director, University of California, Agriculture and Natural Resources, 1111 Franklin Street, 6th Floor, Oakland, CA 94607-5200. (510) 987-0097.

This document is published by the California Communities Program (CCP). The CCP is housed in the Department of Human and Community Development, Cooperative Extension, and it is a state-wide unit within the University of California's division of Agriculture and Natural Resources. The CCP provides useful information to citizens and local leaders about important issues of community governance, leadership, and economic development. Additional copies may be obtained by contacting the program:

CALIFORNIA COMMUNITIES PROGRAM
DEPARTMENT OF HUMAN AND COMMUNITY DEVELOPMENT
COOPERATIVE EXTENSION
UNIVERSITY OF CALIFORNIA
1 SHIELDS AVE.
DAVIS, CA. 95616
(530) 752-3007

© 2002 REGENTS OF THE UNIVERSITY OF CALIFORNIA

This report may also be viewed on the California Communities Program web site
<http://www.ccp.ucdavis.edu>.

Editor, cover design, layout, and photographs -
Jeff Woled, Cooperative Extension, Human and Community Development, UC Davis

TABLE OF CONTENTS

<i>Welcome and Opening Remarks</i> David Campbell, Director, California Communities Program	1
<i>“Becoming Scientists of the Age of Noise”</i> Mike Fortun, Assistant Professor, Department of Science and Technology Studies Rensselaer Polytechnic Institute	4
Reaction Panel/Audience Questions and Comments	13
Lois Wolk, Yolo County Board of Supervisors Ellie Rilla, Director, UCCE Marin County Jim Grieshop (moderator), UCCE, Dept. of Human and Community Development, UC Davis	
<i>“Youth Civic Engagement: Membership and Mattering in Local Communities”</i> Connie Flanagan, Professor of Youth Civic Development, Pennsylvania State University	20
Reaction Panel/Audience Questions and Comments	26
Carole MacNeil, Director, 4-H Youth Development Program, ANR Fe Moncloa, UCCE Santa Clara County Stephen Russell (moderator), Dept. of Human and Community Development, UC Davis	
Panel: Case Studies of Science Becoming Civic/Audience Questions and Comments	32
Dennis Pendleton (moderator), Dean, University Extension, UC Davis Kathleen Eagan, Truckee Watershed Coordinated Resource Management and Planning Cecily Majerus, Clavey River Watershed Project Gary Nakamura, ANR Area Forestry Specialist	
Conference Wrap-up	37
Mike Fortun, Rensselaer Polytechnic Institute Connie Flanagan, Pennsylvania State University Al Sokolow, UCCE, Dept. of Human and Community Development, UC Davis Bill Lacy, Vice Provost, UC Davis	
Photographs	42
List of Registered Participants	43

Welcome and Opening Remarks

David Campbell

David Campbell is a Specialist in Cooperative Extension in the Department of Human and Community Development at UC Davis. He is also the Director of the California Communities Program.

NOTE: The tragic events of Sept. 11 were still unfolding as the conference began and there was a campuswide question of whether or not normal campus activities, including this conference, would continue. Several registered participants were absent because of air travel difficulties or they simply chose not to attend because of these events. We decided to proceed with the conference as planned, and were grateful for the opportunity to find comfort in being together, and to reflect on the deeper meaning of our work.

Good morning and welcome. Obviously this isn't the kind of day we had in mind for doing this, but we decided to plow ahead. Also, we are a much smaller gathering than we had anticipated. We had 75 people registered and perhaps there are a few more who would have liked to join us, but probably they decided to stay home today or couldn't make it here from other parts of California. I think all of our speakers and presenters with maybe one exception, Jonathan Kusel, will be here. Most of them arrived into town yesterday. We will do the best we can. There have been TVs set up downstairs so that during the breaks you can get caught up on the unfortunate events of the day.

This is the second annual California Communities Conference Colloquium. Last year we called it "The Four Cs" and we haven't really played on that theme this year. This event is sponsored by the California Communities workgroup and the California Communities Program here at UC Davis. Last year we looked at demographic change which was actually interesting since we did that before all the census data came out; we previewed some of what was coming ahead. This year we're tackling this big theme of "When Science Becomes Civic" about which I'll say more in a minute. Next year tentatively we're planning to look at community economic development, particularly in rural and/or low resource communities in our state. We will be talking to more folks as we work on that theme.

I want to start with a few introductions and thank-yous - Jeff Woled who is the main person responsible for all the logis-

tics, thank you Jeff. If you have problems or questions during the day you can grab either him or me and we'll see if we can help you. Jim, Al, and Joan will you stand up please? Most everybody here knows them. These are my three Cooperative Extension Specialist colleagues in the Community Studies Unit. Normally I would thank them for all their help in planning this, but they didn't do anything [laughter]. We are going to work them a little bit today and you'll see them in various roles throughout the day including Joan who's helping to take care of our tape recorder. Stephen Russell and Gary Nakamura, will you stand up? I don't know whether Dennis Pendleton is here yet. Stephen and Gary were very influential, Stephen connected us with Connie Flanagan, and he's going to help us with one panel this afternoon, and Gary, who with Dennis, arranged the case study panel for this afternoon.

If you noticed on your yellow sheet, the back has an evaluation form. If you'd like, you can fill it out today and give it to Jeff or leave it on the table. We're also going to send this out by e-mail next week or in a few days. If you would just rather wait for the e-mail version to come along, you can do it that way.

Just a few thoughts about our conference theme before we introduce our first keynote speaker. This is a big topic - When Science Become Civic: Connecting Engaged Universities and Learning Communities - and everyone we mentioned it to said, "Oh wow. That's kind of neat," and then they would go on to say what they thought it meant and then I realized that it can mean a lot of different things. It conjures up a lot of different ideas, when people first hear it. The first caveat of the day is that we are dipping a small ladle into a big river flowing past. It's going to require that you have an active imagination as participants, to try to connect with the perspectives that you get from the various speakers who are going to approach this from some very different angles, and I encourage you to offer your own perspectives and angles and thoughts as we get a chance to talk during the day. Actually it's nice in a way that we're a small group and we will have plenty of time to hear from folks.

As I've lived with the theme for the last year or so getting ready for this, it's presented me with frustration, hope, and questions. Let me just give you one example of each of those as a way of setting the stage for our conversation today. The frustration I will relate is in the form of a story. As some of

you know, Joan and I are evaluating civic engagement in Prop 10 planning in California counties. Lois Wolk is here as chair of the Yolo County Prop 10 Commission. We've been going to a lot of public meetings. I was at a public meeting in San Mateo County, and I'll pick on them because they are big and rich and they don't get picked on enough probably. This was early in the Prop 10 planning process. San Mateo County received \$10.5 million to spend in their first year of the tobacco tax money. This money is supposed to be devoted to kids ages 0-5 and their families. It came with pretty loose mandates, as most state programs go, but with one sort of main prescription and that was that in deciding on how to spend this money, the county commissions were required to spend a lot of time talking to the public and getting their input. There was a big push for civic engagement in this activity. San Mateo County took this very seriously. In a six month period, they organized a process in which 3,000 people in the county were contacted through a variety of methods: focus groups, surveys - they even did things like posting people at laundromats or at day care centers in order to capture parents on their way in and out. They went into jails or prisons and interviewed teen parents who were incarcerated to get their views and perspectives. This was really a very well done process.

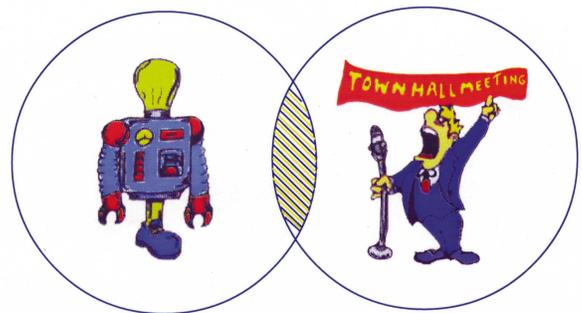
I was at a commission meeting where this input was presented to their Prop 10 commission. The woman who gave the presentation did a very nice job, taking 15 to 20 minutes saying "here is who we talked to, here is how we did it, and here is what we heard" outlining some of the main themes. When she finished, there was a chance for the commissioners to respond. One of them, a very learned man, mustered up his full authority and said, "Well you know, that's all very fine and well, but you don't have a random sample here and this information has a pretty limited validity. How do we know that these public perceptions have any relationship to what the facts are?" Well, this comment landed in the gathering like a lead balloon. I don't know whether I was more frustrated by the fact that he chose to say that, because obviously from a certain type of narrow technical understanding of the world, he had a point that had some validity itself, but I was very frustrated by the fact that nobody in that room had a good response or reply for him. Nobody was able to say that those 3,000 people represented an investment in relationship-building and an investment in the potential building of political partners in the work that commission needed to accomplish. It was a striking incidence of science being pigeonholed into this one little mode, as if all inquiry had to be like those phone calls we get at suppertime to figure out what we think about things.

A couple of months later they published their strategic plan and if I was frustrated before, I got a little more frustrated again because in they said in their strategic plan that, "This

plan contains 99% of everything we heard from those 3,000 people - it's all here;" as if democracy did not require judgment and deliberation and winnowing down of things. So there's a lot of frustration. I'm sure you could add lots of your own stories, but we're not here today to recount stories of frustration. We're here to look for the hopeful signs of where science and democracy are interfacing in ways that are more productive and useful.

One example is the green sheet you've been given. This editorial appeared in the *Minneapolis Star Tribune* a couple of weeks ago about some things that are going on at one of our fellow land grant universities, the University of Minnesota. I direct your attention to the fourth paragraph. The editorial starts by saying, "There is a fiscal crisis. The legislature does not want to fund these universities anymore and the University keeps trying to justify itself in economic terms as a part of the economic engine of the state." And here they say, "Really there's another way it might think about justifying itself. The University can dedicate itself to strengthening the democratic way of life. It could teach the skills needed for civic participation, and conduct research to solve public problems, disseminate knowledge, and share human and physical resources with those who need them the most. It can nourish pluralism and enter partnerships with others committed to the public good." Actually, they have an active task force at the University of Minnesota for civic engagement that is having discussion about how to move this work forward within their particular university.

I think there's one major question that I'll pose on which to frame our discussion. Is this push towards the engaged university just another academic fad that really just impacts on the margins of the university, or is it really going to be something that enters into the mainstream discourse of how universities do their business - how they think about training students, how disciplines work and function in connection with the rest of the world and with other disciplines?



There's a lot of rethinking and recrafting that would have to go into the long-term, serious work that's going to take more than slogans and words and whatever. I don't know how

that's going to fall, out, but I have a guess as to one indicator of whether that discussion is moving in the right direction and it involves the organization that most of the people in this room work for - Cooperative Extension. And I say that because this is the nice little diagram that Jeff dreamed up on the computer for our science and civics intersecting. Somebody pointed out that the science figure has only one leg and there may be some symbolism in that, also notice that nobody's listening to this guy who's talking in this public meeting. I'm worried about that part in the middle. It occurs to me that Cooperative Extension is one of the few institutions in our society that for its whole history has existed right there at that intersection of science and civics. It was deliberately put there by its founders as part of its mission. The indicator that I have in mind about whether things are moving in the right direction is whether the profile and the understanding and the support for Cooperative Extension is being raised or not. If we are serious about the work of civic science, I think institutions like Cooperative Extension are going to have to flourish and thrive. Partly that means, those of us in CE have to do a better job about talking about the things that we're already doing well, but partly it means that as Cooperative Extension, we're going to have to do what we do a lot better, rethink our own craft, and be connected more fully with what's going on in our own community. This includes the great resurgence of interest in community-based research, science shops, participatory action research, and a number of other things which we are going to hear about today.

Our first speaker is someone who has been thinking about these themes for a while. Mike Fortun and is a historian of science. Most of us know only one historian of science, Thomas Kuhn, whom you probably read in graduate school. Mike was telling us last night that most historians of science don't work on current topics, but he does. His dissertation looked at the human genome project in the United States. He's doing work now on genomics work in industry and how this is progressing in the world, particularly one case that he's looking at in Iceland. He's put some of his thoughts together recently with a colleague in a book called *Muddling Through: Pursuing Science and Truths in the 21st Century* which I was immediately attracted to because muddling through is part of the title of one of the most famous articles in political science by Charles Lindbloom called "The Science of Muddling Through." Mike even cites this article in his book and uses it well. So I thought, here is a historian of science that knows political science, so he must be a good guy. Mike is currently an assistant professor in the Department of Science and Technology Studies at Rensselaer Polytechnic Institute in Troy, N.Y. He spent last year at Princeton University at the Institute of Advanced Studies on a fellowship. Also important to us is that he's one of the founders of a group called ISIS, the Institute for Science and Interdisciplinary Studies, at Hampshire College in Massachusetts and he'll tell us how ISIS operates and how it is one of these innovative institutional efforts to link science and civics in a more productive way. Mike's come a long way to be with us, we're very glad he's here, and we look forward for what he has to say.



Becoming the Scientists of the Age of Noise

Mike Fortun



Mike Fortun is an assistant professor in the Department of Science and Technology Studies at Rensselaer Polytechnic Institute in Troy, N.Y. He spent 2000 at Princeton University at the Institute of Advanced Studies on a fellowship. He is one of the founders of a group called ISIS, the Institute for Science and Interdisciplinary Studies, at Hampshire College in Massachusetts which is an innovative institutional effort to link science and civics and a more productive way. Mike is co-author with Herb Bernstein of Muddling Through: Pursuing Science and Truths in the 21st Century.

Thanks Dave and Jeff who've both made efforts to make this all go smoothly. It's a real pleasure to be here and that's good because I might be here for a while. Somebody asked if I was going to say anything about the events this morning. I'm not going to say anything directly. I'm going ahead with what I've prepared, but I think you'll hear echoes that resound throughout. I've titled this talk, *Becoming the Scientists of the Age of Noise*, and that should be the first echo that we hear. I've learned to take language seriously, and in the first of a series of contradictions that my words today will revolve around, taking language seriously means taking it playfully.

was to a keynote speaker who takes language seriously playfully. In the history of Western philosophy – which, despite the deservedly bad rap it has received from a host of critics, including me, is still a very cool invention in so many ways – in the history of that Western philosophy that also undergirds the Euro-American scientific project of the last four centuries, *becoming* as a concept has always been something of a problem. *Becoming* has habitually been downplayed, trivialized, or swept under the rug of *being*, a supposedly much more reliable, trustworthy, and stable concept, if not downright eternal and universal.

I certainly didn't plan to first write and now talk about becoming; I just came to the word as it came to me from this guy Dave, whom I had never met, who had heard though someone else about a talk I had given at another conference in Oregon through someone else, who then read the book I sent him that I had written with my physicist partner-in-science-crime, and who liked enough of what he saw to invite me to speak to another group of people I had never met, and whose work I knew next to nothing about. And so I came.

And it is vital that you do not overlook or forget this series of indirect, long-distance, static-plagued, noisy connections. You have to remember this series of chance encounters, anonymous or at least ill-identified personas, and risked, open invitations. Don't overlook it because it testifies, I think, that somehow we are all part of a series of widespread events that are happening around the different sciences and around the different communities that we work and think and play within, and that series of events is happening without our full knowledge and without our full, direct connection. It's that series of events, that ensemble of becomings that we're undergoing without fully knowing it, those becomings of the sciences as they become civic and those becomings of communities as they become scientific, that should give us some cause for great hope for the future – the ever-becoming future.

Let me start again with this becoming business and why it's a difficult and disturbing concept in Euro-American thought and science. Yes, science is becoming civic, but becoming may not mean what we automatically think it means. If you think it automatically, meaning if you think

it without thinking, “becoming” usually means something like “the sciences will one day, in the future, come to *be* civic.” They’ll arrive at civility, they will coincide with the civic or with the human, the sciences will come to be a fulfillment of human and civic needs and desires.

That automatic way of thinking about what becoming means may be automatic for a good reason - that it’s right. Sometimes I believe it myself, but other times this promise of arrival and *being* carries the scent of death, boredom, stasis, and, frankly, terror. That’s what a number of feminist, post-colonialist, and other badly named thinkers and writers on the margins of that Euro-American tradition have caught a whiff of as well, and so try to keep us open to another, more difficult if not downright maddening set of meanings to “becoming.”

“When science becomes civic” would translate into something like “Science is *and* isn’t civic.” Or “science is not civic, *and* is not *not* civic.”

The history of science shows that it always has been civic, and always will be civic. Science has always been connected to the political and the common good, and science has always been a means of improving the polity, public life, and space. However, the history of science also shows that science never simply *is* civic, and never will be – and never should be. If it were, if there were ever a simple identification between these two terms “science” and “civic,” our world would either be boring or scary. The difference is important to maintain, for reasons that are very hard to state explicitly. Call it a creative tension. That’s what Thomas Kuhn called it, actually. Becoming anything needs a creative tension, becoming needs difference, becoming needs contradiction. If science ever were civic, if these two things ever collapsed into each other, becoming would stop. The difference is difficult and sometimes dangerous, but necessary. There’s an identity *and* a non-identity between the two terms, science and civic, and if normal logic can’t tolerate that kind of contradiction – well, then there’s something wrong with normal logic.

I’ve learned this through being a historian of the sciences, or becoming a historian of the sciences. I’ve learned this through becoming an anthropologist of the sciences, particularly the life sciences and within that, contemporary genomics and biotechnology. My current research is on deCODE Genetics, a U.S. company with a wholly-owned Icelandic subsidiary and generous ongoing funding from the Swiss multinational pharmaceutical company Hoffmann-LaRoche. I’ll talk some about that, if only as an example to be avoided in making science become civic – a very bad becoming. I’ve also learned about becoming, contradictions and their productivity through my work in

ISIS, the Institute for Science and Interdisciplinary Studies, and in watching, being involved in, thinking about and writing about its various projects, from community involvement in toxic remediation at U.S. military installations, to assisting the Secoya in rainforest Ecuador in developing aquaculture and negotiating over oil exploration and production, to analyzing the social and ethical implications of my physicist co-author’s work in quantum information theory.

I’ve learned about the becomings of science, in other words, from watching and working with people like you: scientists, citizens, farmers, engineers, government workers, academics, all of you working on the ground in the midst of multiple contradictions where the best, most interesting science happens.

Herb Bernstein, the physicist with whom I work, and I started ISIS in 1993 as a place to run, observe, write about, and gradually refine these various experiments in science-becoming-but-not-being-civic. The name we eventually gave to that experimental process of becoming was Muddling Through. It was a name that everyone was dissatisfied with – us, our publisher, our editor, our friends and colleagues – and that seemed somehow appropriate and right and actually gave us a great deal of satisfaction. The phrase came from the work of the theoretical biologist, feminist theorist, and historian of the life sciences Evelyn Fox Keller:

Just because we are finite beings, located, situated, embodied, we can, and can only, muddle through — sometimes with more success than at others. Scientists muddle through with staggering success. Only their success is rather different than they imagine. It depends not on any possibility of translating thought into action, but on the conjoining practices of a colluding community of common language speakers. Our task...is to make sense of the successes of science in terms of the particular linguistic and material conventions that scientists have forged for their sorts of muddling through.

As a practicing scientist and a historian of the sciences, Herb and I thought that “muddling through” was a more truthful, more honest, and simply better description of what the sciences were and how they actually proceeded than the stories a number of scientists were telling at the time (and still are) as part of the so-called “Science Wars.” This was the tired old schtick about science being totally disinterested, grounded in straightforward facts and observations, utterly independent of historical and cultural context, completely neutral and objective once sufficiently

So - the first part of our book reads the history of science, a number of contemporary episodes in the sciences, and the writings of a number of scientists themselves, from Gregory Bateson to Wes Jackson to Rita Levi-Montalcini, to argue for a different set of truths about the sciences, which I'll quickly summarize here in four simple statements, each with a little parenthetical complication:

- Facts are not found; they're made.
(But they're not made *up*.)
- Theory and language don't reflect or mirror the world; they refract and perform it.
(*That* statement is a refraction.)
- The sciences are never neutral; they're always charged, moving in dynamic electropolitical fields.
(But high voltages will kill you.)
- Ambiguities, uncertainties, and muddles are ineradicable; judging (rather than certifying) is the central demand, principle, and method.
(Judging is not a science, and not *not* a science.)

Contrary to what the people we call the Science Purists say, such a set of truths doesn't leave you floating in some postmodern atmosphere where anything is just as true as anything else and science doesn't *become* civic because it already *is* civic or political and *only, totally* civic or political: the old "might makes right" or "mob rule" accusation that anyone who questions the objectivity of the sciences is immediately subjected to. Such truths about the sciences don't entail, as someone once famously said, that "all that is solid melts into air," but it does put you in the risky, difficult, but also kind of energizing place that Mark Tansey evokes in his painting called *Coastline Measure* that we were lucky enough to put on our cover. It's a place where differences meet, where contradictions slam into each other with some degree of violence and beauty, and



where people nevertheless muddle through to carry out interesting, important, and even precise work. It's a place, I suspect, that you all know well. I particularly like the repleting, kind of fractal structure you can see at multiple levels where the same kind of repeat. I like to view that image.

That analysis of the sciences takes up part 1 of our book, and in part 2 we describe the kinds of projects that we've pursued at ISIS that exemplify that view of the sciences. I want to talk a bit about some of those now, but through the device of what we called "Experimental Principles of Muddling Through" that we set out in part 3.

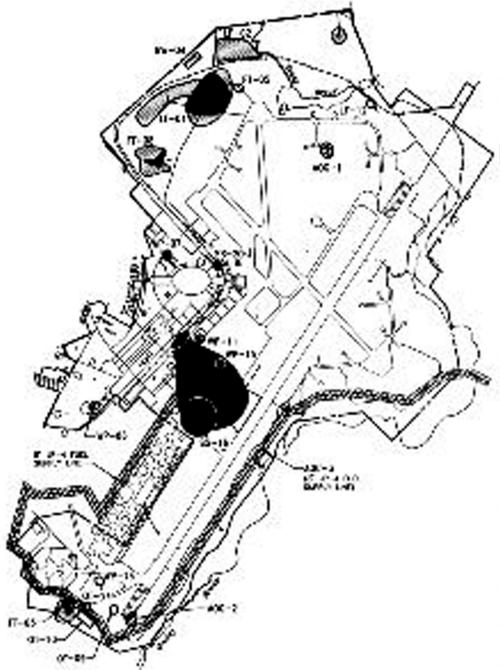
Let me start with my personal favorite of these: "Become a responsible hole-ist."



The ISIS logo gives a nice picture of this principle. It looks a little yin-yangy, but I prefer to think of it as a grungy, Soundgarden-inspired "Black Hole Sun" kind of symbol. It's a reminder that any system – a science, a politics, a culture – always has a hole: something you've overlooked or repressed, a gap, a flaw that could easily be fatal, a stain that eventually spreads to the entire fabric. All too often we've seen a kind of easy and reassuring holism set up in critical opposition to the supposed reductionism of the sciences. Don't go for it. Perfect harmonization is not only an illusion, it's potentially dangerous. Always look for the hole in your best laid plan, try to pay attention to the blank or black spot in your most cherished scientific certainty or your most firmly held political principle, because it's sure to be there and it will come back to haunt you if you delude yourself into thinking that you have the perfect holistic system, whether that system is scientific or political.

Many of the pictures that I'm about to show as illustrations of some ISIS projects I chose because they have holes in them somewhere. I think of them as iconic of the kinds of projects ISIS is engaged in.

This is a map of Westover Air Reserve Base in Chicopee, Mass. You can't really see the holes, but there are twenty-some holes in the ground which are monitoring wells for testing if there is any kind of ground water contamination and then where it's going. The Air Force says, or rather their contractors say, that the few plumes of fuel and other contaminants are minor and these are flowing in toward



the middle of the base. Very convenient. We recruited two geology professors at local colleges to take their undergraduate classes to the base to check the contractor's data and analysis and to do their own studies which involves measuring of the ground water levels, conducting various kinds of sonar and seismic tests, a whole range of things. We describe all the complications fully in the book.

In summary, the terrain here is so level, the seasonal and other variations in the ground water levels are so understudied, and other factors combined to make the situation very hard to characterize with any certainty. It's not clear if the water is going in towards the middle, it's not clear if the water is going north up towards a creek that runs along the northern edge of the base. It's just really hard to tell what's happening, but that hasn't kept the Air Force from saying there isn't a problem; that's how they interpret that. We've asked for more holes, more monitoring wells on the borders of the base. They've tended to cluster them on the south and fewer up in the north where we suspect where the problem might actually be, but that hasn't happened

yet due to budgetary reasons or that is the reason given. In the meantime, there seem to be new questions and new concerns every month that demand one's attention and time.

At Westover, in the Military Waste CleanUp Project, ISIS has played the role of "neutral" technical advisor and mediator, working between the military and the local activist group, Valley Citizens for a Safe Environment. This is not because we believe in neutral expertise, but because the role works. The role works because the deeply entrenched military culture of expertise believes in neutrality, and because Valley Citizens' plays the activist/radical advocate role very well, so there's no need for us to make those same kinds of arguments.

We try to do good technical work in a very traditional social role that we might otherwise critique, while paying attention to potential problems with the model. Those include: 1) It's not clear that our experience and knowledge transfers to other military installations, where the environmental problems are far more serious and where citizens are really angry about what's happening, and 2) It's not clear that our experience and knowledge transfers easily to other sites where the population is more diverse - folks around Westover are almost all white, predominantly Polish - or if our experience transfers to where there is no organized group of citizens at all. We expect to learn more about these added complications as we continue to try to build what we call a National Technical Experts Network, with U.S. EPA funding, that would connect citizens groups to scientists, engineers, and social scientists at universities, colleges, and community colleges near military bases around the country. We're just really now starting that effort. I can talk a little bit about it if people have questions.

Here's a nice shot of an actual hole in the rainforest of Ecuador. This hole was drilled by Occidental Petroleum, and some Oxy employees are standing here looking at this hole which is an exploratory oil well. The other people in the photo, the two people in the middle, are Secoya, a group of people who I always feel uncomfortable in calling "indigenous" since they have been missionized, Christianized, colonized, hybridized, modernized, and marginalized for a very long time. Calling the Secoya "indigenous" tends to romanticize and exoticize them, and this is no time and place for romanticism. Although you can find a more romantic image on the opening web page for the project, and it's one of the reasons why we're now changing the name from the Secoya Survival Project, which suggests a kind of timeless, changeless culture that has to be preserved against modernizing forces, to simply the much more straightforward and open-ended "Secoya Project."



resolved, how seismic testing will be done, and so on. Jim Oldham, the project director, describes that very complicated and very difficult process in the on-line ISIS newsletters, and I'll say a bit more about that in just a minute, but first let me mention the one other part of the Secoya Project, which is aquaculture.

Here's Jim staring down a different hole, a PVC pipe that will be used in one of the new fishponds for "indigenous aquaculture," with "indigenous" again something of a misnomer. The Secoya never had traditional "indigenous" methods of fish farming for the simple reason that they never had to farm fish in human-constructed ponds before oil development messed up the rivers. It's as new to them

Let me go back to the messier, holey-er picture – the better picture. Oil exploration and development in Ecuador has



as it is to us. The process is not so much science becoming civic, but more one of ISIS and the Secoya becoming-scientific together. Jim and the Secoya – and while it tends to be Secoya men that get involved in these kinds of projects, that too, is changing – are developing new methods of record keeping and analysis and experimentation with different breeds of native and non-native fish that will, everyone hopes, result in a new science of aquaculture suited for these local natural and social conditions.

This kind of becoming-science is exciting, but what's *really* exciting to me is Jim's refusal to get too excited about all this. Let me read you an excerpt from an email that Jim wrote from Peru to Herb and I to critique a fund-raising letter going out with the most recent ISIS newsletter. You've probably all had to write these kinds of things for your funders or for your publics, and you're probably familiar with the demands of the genre, so I think you'll know what Jim was reacting to. This is from his email:



a complex, nasty history that I won't go into other than to say that we first came in contact with some of the Secoya when they visited the U.S. as part of their legal action against Texaco which, to summarize crudely, had dumped crap all over the place. It's things like that which have made many "indigenous" groups in the Amazon region (most famously the U'wa) and the nonprofit organizations that increasingly work with them, take a very hard line; a very simple, very non-negotiable stance: no oil development. The Secoya, in collaboration with ISIS and other organizations, made a different decision which was to negotiate a "Code of Conduct" with Occidental that gives the Secoya 1) money, and 2) meaningful involvement in decisions about how many test wells will be drilled, where, how oil workers will be transported, how disputes will be

My concern is that the letter reads much too much like a deCODE press release. We should tone it down in the newsletter and get in more of that marginal appreciation of our ignorance. As I tour

aquaculture projects here in Peru, I realize more and more how little I know on the subject of Amazonian aquaculture and how much has already been done. We might have a little to say about the philosophies and attitudes that drive different projects and the kinds of outcomes they might lead to, but in no way are we inventing Amazonian aquaculture. Unfortunately, I can't easily tell you what needs to change in the letter; there aren't specific claims that bother me so much as a triumphalist tone that it is bad enough to have to use for funders; I prefer a different tone for the newsletter.

For example, I would not say that the “ground-breaking Code of Conduct and agreement for oil exploration with Occidental Petroleum have given the Secoya exceptionally strong footing in their dealings with the oil company.” Instead, perhaps “have given the Secoya greater leverage” or “have strengthened the Secoya.”

On the monitoring, the problem is that what one means when we say the work is “to be halted and addressed” is somewhat fuzzy. Halted for a day? Halted officially? Addressed with a promise to change? With an explanation of why things have to be the way they are? I'm not saying the monitoring accomplishes nothing; it is important and does make things better. It however is complex and imperfect, a small step not a giant leap.

I wish we could brag about how willing we are to make mistakes, how we and two partners are trying to look at each others' projects warts and all to make them all better, how we don't want to provide one answer for Amazonian aquaculture, but rather a series of questions and possible answers. The same goes for the code, which is an unfinished and imperfect document. That others are coming to us for help in writing their own codes is a chance to collaborate to make it better, to get new perspectives (perhaps work with communities in a stronger position to reject oil rather than just negotiate for better terms), to start again knowing more about oil company objectives and tactics and our own strengths and weaknesses. The claim we should make is that the code is a tool that helps. We made it happen and we know we can make it better because we know better than anyone all that is wrong with it. We are experts in our own limitations.

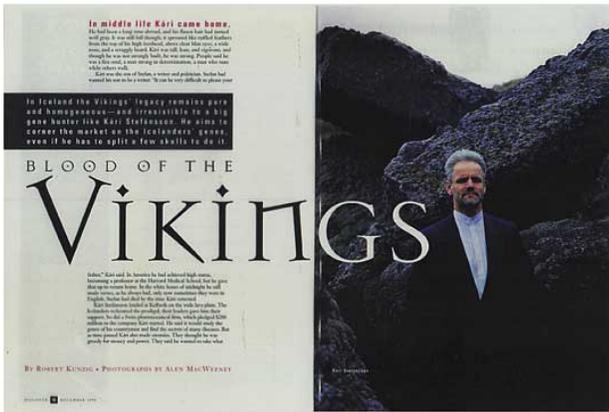
Jim's a great employee to have.

A second principle that we add to “Become a responsible hole-ist” is “Kludge another unusual assemblage.” Some of the best science and engineering happens through kludge jobs we say, because when you or your science is *becoming*, you don't know where you're going or what will work once you're there, so you have to kludge things together. As I hope you can see, individual ISIS projects embody that principle: anti-military activists kludged to Air Force colonels kludged to college geology classes; fish kludged with oil wells kludged with trickled-down multinational corporate wealth kludged with a small band of humans trying to continue *becoming*, rather than disappearing or being absorbed. Kludge jobs are both clumsy and clever, shaky and reliable, pathetic and admirable.

We've tried to make ISIS as a whole a kind of kludge job, and I want to very briefly describe two other areas of work that we've hammered on to the military toxics and Secoya projects. The Secoya and military clean-up projects are more or less in the familiar technical-assisting, doing-good, science-and-communities non-profit vein. However, Herb's work in quantum physics and my work on the history and anthropology of genomics are both also concerned with the sciences becoming civic, although on different levels than the other ISIS projects.

I'm sorry to have to skip even a brief description of the quantum physics work in the interest of time, but I'll give you the two-sentence version, though. Does Herb's abstract work in theoretical quantum physics make him guilty of collaborating with the National Security Agency in developing new cryptographic technologies, the twenty-first century version of the German enigma coding machine? How does abstract curiosity-driven theory become civic practice without anyone directing it to do so? What does it mean for a scientist to act responsibly when he or she doesn't know the future civic consequences of their scientific work? We actually staged a trial, a kind of mock trial of Herb, at Hampshire College to watch the guilt assigning responsibilities break down.

My own work on genomics is currently focused on Iceland, where a series of old and contemporary Viking myths have been invoked by deCODE Genetics and its volatile CEO and founder Kari Stefansson, pictured here (and this is in *Discover* magazine) to make the science of genomics become very civic indeed, and in a very unbecoming way. These myths, particularly the parts depicting the supposed isolation and homogeneity of Iceland and its population (and I can say a lot about that), have been reiterated consistently in both the Icelandic and the international media, and have been vital to deCODE's efforts to leverage itself into the competitive global genomics economy. Let me just say that Iceland is not isolated and it is not genetically pure.



Let me give you a very brief encapsulation for those few of you who may not be familiar with the deCODE Genetics saga. Often called an Icelandic company, deCODE is, in fact, a Delaware-incorporated U.S. corporation. It came to international attention when it received a 5-year promise of up to \$200 million in research and milestone payments from the Swiss company Hoffmann-La Roche in February 1998. At that time, it was billed as the largest deal ever between a genomics company, which didn't even exist five years ago, and a major pharmaceutical company. In March 1998, legislation was introduced into the Icelandic Parliament, legislation which now, thanks to the Icelandic equivalent of the Freedom of Information Act, we know to have been drafted by Stefansson and deCODE's lawyers rather than the Ministry of Health or any other legislator that would normally be presumed in the drafting of legislation. That legislation would establish what was called a Health Sector Database comprised of the medical records of every Icelander, which had been obtained by the national medical system during the last seventy years, and it would grant a 12-year exclusive monopoly license to one anonymous licensee, which everyone knew to be deCODE. After a long and tumultuous parliamentary and public debate, the Health Sector Database Act passed in December 1998. That was like a 9-month long social, political, cultural, and media upheaval.

The Health Sector Database, which it is important to note has yet to be built and that will be really hard thing to build, will also be combined into what is called the deCODE Combined Data Processing capability (DCDP). This means that this deCODE will cross-link the health records that are official government records and are now officially licensed to a private company, with two other databases which are 1) a computerized version of the well-maintained genealogical records of Iceland, and 2) a database of newly produced genetic information from blood samples gathered from Icelanders in collaboration with Icelandic physicians, at least some of whom are deCODE shareholders.

A book could be written about the complexities of these events, which is what I'm currently doing, so I just want to pull out one strand that says something about how genomics is not becoming very civic in Iceland, and how we might do a better job of it.

The Health Sector Database is going to operate on a new principal, one which you probably didn't know existed, of "presumed consent" rather than the traditional "informed consent." In "presumed consent," every Icelander, living and dead, was presumed to have given their consent to place their medical records in the database, and individuals were then granted the new right to "opt out" of the database, although you cannot opt out your dead relatives, even though they share some of the same genetic information that you do. About 20,000 people now, or close to 7% of the population which I think is 282,000 and counting, (a very small society; a journalist I talked to compared the case, in political terms, to Rhode Island. It's a small, bare-knuckles gloves-off kind of political fight in a very small community which happens to be a nation state) have formally opted out for a variety of reasons: because they believe the database won't protect their privacy, because they believe that one company should not be given monopoly rights to what is, in effect, a national resource, because they believe that these things shouldn't be commercialized at all, or because they believe that they should have the opportunity to give or withhold their informed consent each time deCODE wants to use their biosamples and bioinformation in a new project. As it stands now, it's kind of unclear, but once you presumed to have consented, you have consented to anything they decide to continue to use your samples and information for. You can see the most dramatic change comes in July 1999 when people mistakenly presumed that they could no longer start to opt out. The media did nothing to disinfuse them of this misperception, the government didn't really help, and there was a dramatic decline in the number of people opting out. It's unclear what that curve would have looked like had the community actually had better information about their options and the different kinds of procedures.

The chart of opt outs and the web site on which it appears are maintained by a population geneticist, Einar Árnason, who is one of the leading figures in a new civic group called Mannvernd which means human protection. It's an association for Icelanders for ethics in medicine and science. Mannvernd is made up of geneticist, psychiatrists, nurses, doctors, scientists, historians and philosophers of science, and other citizens of Iceland who are working to make the science of genomics or are trying to make the science of genomics become civic in a different way in Iceland. They are using diverse strategies to try to make that happen; public education, lawsuits to challenge the constitutional-

according to the distributed ratings wisdom of the entire nomadic pack.

That strategy works for a while, too, and Senator Bambakias, after his return from a complete nervous breakdown, calls to congratulate Oscar saying, “We no longer hope that science will give us utopia, or even a real improvement. Science just adds more factors to the mix, and makes everything more unstable. We’ve given up on our dispossessed, too. We have no illusion that we can employ them, or keep them docile with more bio-bread, or more cyber-circuses. And now you’ve brought these two groups together and they’ve become a real coalition” (p. 475).

Oscar explains the strategy to the Emergency Committee back in Washington and says, “[I]t was a question of symbiosis. And symbiosis was doable. Having boldly cut its ties to the conventional rules of political reality, the Collaboratory’s new hybrid population could float indefinitely within their glass bubble. They had no money, but they had warmth, power, air, food, shelter; they could all mind the business of living...and since they were also ignoring federal oversight, they could all concentrate on their favorite pet projects. They could get some genuine scientific work accomplished, for once. This was a formidable achievement, a Shangri-la almost, and it was there within their grasp. All they had to do was come to terms with their own contradictions” (p. 370).

But even if no one quite knows exactly what this coalition is supposed to do, and how exactly it is supposed to come to terms with its contradictions, there is a sense of real possibility and change. As Greta states, “I really understand it now. Science truly is going to change. It’ll still be ‘Science.’ It’ll have the same intellectual structure, but its political structure will be completely different. Instead of

being poorly paid government workers, we’ll be avant-garde dissident intellectuals for the dispossessed and that will work for us because we can get a better deal from them now than we can from the government...It’ll be like a new academia, with some ...feudal elements. It’ll be a lot like the Dark Ages, when universities were little legal territories all their own, and scholars carried maces and wore little square hats. Whenever the university was crossed, they sent huge packs of students into the streets to tear everything up, until they got their way, except it’s not the Dark Ages right now. It’s the Loud Ages, it’s the Age of Noise. We’ve destroyed our society with how much we know, and how quickly and randomly we can move it around. We live in the Age of Noise, and this is how we learn to be the scientists of the Age of Noise.”

I’m here today because I’m a student of the sciences in all their forms, so now I’m looking forward to learning more from all of you about how real science is done today in real settings, really loud, really noisy settings. Because I sincerely, absolutely know - not believe, but know like the hard-won knowledge that comes from years of careful observation and trial-and-error experimentation – I absolutely know that you represent what the sciences are becoming. You *are* the sciences becoming civic. You are becoming the scientists of the Age of Noise. You are the sciences becoming more intimately and crazily connected to local conditions, needs, demands, and wishes of dispossessed peoples. You are what the sciences will and must continue to become: involved, on the move, impure, noisy, full of desire, and, most importantly, loaded with all their glorious and maddening contradictions, contradictions that you must constantly try to come to terms with. I hope a few of my terms may help in that process, and I look forward to hearing the terms and practices you’ve invented as part of your own becomings.

REACTION PANEL

Ellie Rilla, Director UCCE Marin County
Lois Wolk, Yolo County Board of Supervisors
Mike Fortun, Rensslear Polytechnic University
Jim Grieshop, UCCE, UC Davis (moderator)

Jim: To my right is Ellie Rilla who is the county director for Cooperative Extension in Marin County and who is also the community development advisor in that county. She's been very involved with issues of science in society and science in the civic sectors. Lois Wolk is a friend and a longtime resident of Davis. She is a former member of the Davis City Council, and currently she is on the Yolo County Board of Supervisors. We are going to ask Ellie and Lois to comment and we will then engage Mike and then the audience.

Ellie: Overall, I was very intrigued when I read Mike's presentation. Lois and I had the opportunity to get a copy of his speech last week and read it prior to this session. I've loved the inquisitive and searching nature of both his questions and some of his answers from his life experiences and of course the humor and the word play.

I'm a practitioner of science and I'm engaged in the community of Cooperative Extension primarily around natural resources and community development issues, some agricultural some not, in the county of Marin which is north of San Francisco. I think very much in terms of how science can be civic and how it can be of assistance in solving important community problems as a member (me being a member) at that table of interest, and what kinds of models that might be useful in helping truly civic science in the natural resources management policy-making realm. I think, on another and related level that Dave mentioned, about the intersection between the robot and the politician, I'm also thinking about how the University is becoming engaged and connected to the community. For me and probably for other Cooperative Extension people, we feel that Cooperative Extension sits right on the fence between the community and the university. We are in a very unique setting. My bias is that many times I feel like the campus family, of which I am a part although I am sort of a distant cousin (sometimes I get mail and sometimes I don't), is only a engaged with and among themselves which isn't necessarily bad, but it is removed from other worlds that I and perhaps other Extension people walk in each and every day. You could say that my bias, and some Extension colleagues' bias, is that possibly we are too grounded in that other world of issues. The trick for me is to bridge those two worlds - bringing the science to help solve today's issues and involving Cooperative Extension. Since we are all talking to one another today (I think there's two of

you from the outside world), this is a great conduit for us to do that.

I also believe there are myths about campus that the community has and vice versa that can disable our mutual abilities to share and enhance that common pool of knowledge that we have at our fingertips. The words "isolation," "distance," and "disconnected" come to mind. Mike's guiding principles for working that intersection, being holistic, and kludging an unusual assemblage, really struck a chord, especially when it's underpinned with truths about science that he purports, although I'm not sure whether these are certifiable or judgment or a bit of both.

I am currently working on issues around watersheds and organic farms, and with the mystery disease that's killing thousands of oak trees in California called Sudden Oak Death. What I've found is that we actually have more questions than answers and that scientists and scientists' roles in all three of these issues and settings, especially in Sudden Oak Death, is very charged, and as Mike described, is also very dynamic. In some ways, the scientists' roles do not consider the political and social ramifications of these issues which I think has gotten us into trouble, but we are muddling through. It's also that intersection, or those relationships that is definitely helpful to those issues. Sometimes this is very limiting because science tends to be much more specialized instead of generalized or whole systemized, and it does tend to be more reductionist instead of more expansionist. Sometimes, especially with Sudden Oak Death, there are so many pieces to the puzzle that we are still trying to figure out how can we pull a team together that will support the specialist yet also includes a need for those general questions that will help us find solutions. We have, at this point, about 26 University researchers working on Sudden Oak Death and other issues in Marin County. This project is very popular, probably because UC Berkeley is just right over the bridge and UC Davis is not too far away.

Mike's description of muddling through, for me, as Dave mentioned, brought up my old days of political science and Charles Lindbloom's work of almost 40 years ago, "The Science of Muddling Through," which is the interpretation of this sticky intersection between science and policy, that interaction between government and non-government players

in policy making that we've all been scratching our heads about for many, many years no matter what role we play.

Flash forward to today and you see political scientists like Matthew Cahn, who is with California State University, Northridge and who is talking about the same topic as Mike spoke about today. He has a new book coming out from MIT Press titled *Linking Science to Decision Making in the Environmental Policy*. His view about this is that we need to maximize the cross-disciplinary decision-making and to broaden the stakeholders to include not just scientists talking to each other or interest-based players doing the same, but to find a place where that civic engagement is encouraged hand-in-hand with people like science advisory panels. Again, these are examples of the work Mike's done in ISIS with his colleagues. In his book, Matthew talks about one case study of marine protection areas where the groups actually sat down with the scientists at the very beginning. In many cases, for those of us who have worked on all kinds of policy making, we've noticed that typically people will get brought in somewhere along the way, but usually not at the beginning of the process. When we think about science we scratch our heads and we try to figure out what the question is that we want to answer, we usually don't do that in a room full of other interest groups. Matthew describes these examples where this very mixed group of stakeholders actually framed the problem at the beginning. As Mike states, bringing these areas together is trying to kludge this unusual assemblage that we are not used to. In Matthew's situation, when science and stakeholders link their analytical approach, he notes that stakeholders have approaches and scientists have approaches and somehow when that intersection happens, good stuff usually emerges.

We can think of a lot of other problems that are going on. I know that Mimi Sen is probably dealing with issues around the glassy winged sharpshooter, reduction of pesticides, and a lot of political and social ramifications of what happens in local communities when they decide, "Well that's all great and good and we like our grape growing industry but hell no, there won't be any spraying in their local community." How do you respond to that? Do you bring this unusual assemblage together? Do you stonewall? What do you do? We all know about these situations in our own world where some of these ideas may be very helpful.

I'd like to add Matthew's experiences with the marine protection act to Mike's list since he gave the opening in this problem solving puzzle that he describes at ISIS. They both talk about the importance of this facilitative process to their success. I'd like to talk little bit about that. Again, my biases and experiences are that we should be willing to not always to be seen as the experts in this problem solving puzzle, but as an integral part of the puzzle and its solution, and probably

some humility and modesty thrown in for good measure would be helpful. Scientists need prerequisite training, (we probably all do) in engaging and connectivity. That's that intersection - where do people get that? Do you just experience that or do you actually get it when you go to school? Primarily process skills, whether you use them or not, you at least can have that knowledge set. Also, we should acknowledge that no facilitator, no matter how effective, is wholly neutral and you should know that about yourself before you begin to work with a group. In Mike's case, probably working with military bases, that you may be neutral about the content, but you are certainly not neutral about what constitutes effective group process or vice versa. Also, most important for getting things done in civilization is agreement, the foundation that understanding is the main ingredient for agreement. Science and universities, and Cooperative Extension as well, have an inherent responsibility to make ourselves understood, to make our work understood not just between one another. So if Mike says that we're in the Age of Noise, I think we as Cooperative Extension staff and university faculty need hearing aids. We all need listening devices so that we receive those messages from society. I think that as practitioners, campus researchers, specialists, generalists, issue-driven, commodity-driven, we are becoming connected and engaged with one another with these grand experiences. It's not that were not connected, but we haven't arrived, and we're trying to become each day as we break through some of these myths about one another and we start to experiment together. On the other hand, we are members of a giant organization, but like other giants, it might make some sense to figure out how do we link campus and community, whether or not it is through Cooperative Extension and how we do that communicating so that we can put together a more holistic unusual assemblage.

Lois: I very much enjoyed this interface between the public and science. That crosshatch line is actually much more complicated, that's where I find myself most of the time, and I want to talk about that in detail. I especially enjoyed the notion of muddling through which is something that my colleagues and I do regularly when we meet. We certainly did muddle through at the Davis City Council as well, (for those of you who are regular watchers of that body) and I was very proud to be a member of the Council.

The basic underlying idea of this conference which I find fascinating, and have always found fascinating before I was in elective office, is that science can inform decision-making, how it does that, and how it interacts with public decision-making. That entire process is truly fascinating. The idea that somehow science and the university have a role to play in improving public life that is some kind of civic role, I think is one of the grander ideas of the American experience. It's not the American-Euro experience. It is a key difference about American educational philosophy as distinct from the

European approach to higher education, this notion that there is a practical, utilitarian role to play. Knowledge and science in the public sector is truly, I believe, a uniquely American contribution. I think the Cooperative Extension is an example of that. The land grant institution, the land grant university is a prime example of the entire philosophy of that approach.

I'm speaking today as an elected official. The buck does stop with me and my colleagues. I decode much of your knowledge somehow and I try to translate that knowledge into what are sometimes very tough policy choices that result in the allocation of resources. I'm where the rubber hits the proverbial road. That's why I like this, that middle part, because that's where I'm involved. I want to tell you that the journey along that proverbial road of decision-making is a quite varied and there are a number of things that go into that road or that are a part of that journey. It's true that one of them is research. As Ellie said, it is only part of the puzzle, just one part of the puzzle. Public input is another part and I understand the example Dave gave of his frustration with San Mateo County. However, the fact is that those 3,000 folks who spoke may only have been a part of whatever the truth is about the commission and the direction for the children ages 0 to 5.

Another part of that proverbial road of decision-making involves my colleagues and the filter of experience that each one of them brings to the table when a decision is made. That too, is quite varied. It's also a question of available money. We have a grand notion that somehow the right answer will be provided, that the truth will come out of this, when in fact it's often a policy choice based on the amount of resources that are available. These are the fugitive things that determine these decisions. I hate to disappoint you, but it could be as ridiculous as one member not liking the previous decision and the vote against him or her, and deciding that on this issue he or she absolutely is not giving a vote to that person - it doesn't matter whether they like them or not, or whether the issue is right or wrong. It can be as fugitive as that. It can also be that decision-making road has disagreement as to the goals and the vision or direction on this road.

I'd like to talk about three very, very successful efforts in which the interaction of science and public policy has been positive for our community. In every case, the end goal was shared widely in the community and that was an extremely important part of the process.

The first is a successful 10 year environmental litigation and effort by the University, the Putah Creek Council, and the City of Davis to restore water to Putah Creek, enhance the ecosystem, and preserve the fish and the ecosystem of Putah Creek. Science informed the decision-making at every stage: the legal arguments, the negotiations, the arguments before the City Council, the trial, the eventual settlement, and the

current efforts at restoration. The University's involvement was absolutely essential. The University's experts in fisheries and hydrology, and their involvement in this process informed the public policy in a very, very positive way.

The second example is the efforts of Professor Al Sokolow and Cooperative Extension, and the successful engagement of science (this is personified by Al) in the land use policies of Yolo County that have resulted in some of the most advanced and informed efforts in the Central Valley to preserve agricultural land through easements and other policies. The role Cooperative Extension played here throughout with Al, and perhaps others who I don't mean to slight, was critical in advancing the notion that this land needs to be preserved in Yolo County and that we have to figure out ways of doing it. Good minds and intelligence can be brought in to solve those kinds of problems.

The third effort is the one that Dave referred to, the involvement of the University, research scientists, and the community planning efforts that have surrounded the Proposition 10 efforts in Yolo County, the Children and Families Commission. We have a strategic planning process, Charles (Lacy) was instrumental in getting that together, and Dave and Joan are evaluating it. The end goal was absolutely certain from the beginning and that was to improve the health of children ages 0-5 in Yolo County. In order to achieve that, we needed to do extraordinary outreach. The University was instrumental not only by bringing information to the table, but helping us formulate and evaluate the process of bringing in the community to ask the questions that we needed to ask. We had a small event similar to the one Dave described in San Mateo. In the end, the decision-makers didn't always agree with what they heard in the community and they took somewhat different positions. That happens.

As I look a lot of these efforts that have been so successful in advancing the goal of a better society and improving the quality of our lives, I have some general conclusions about the role of knowledge as I've seen it. First of all, knowledge is power. The person who has more of it has an advantage. They may not use it and it may not be successful, but it is a clear advantage in every one of these situations that I've experienced. Knowledge is also uncertain and changing. The notion in the environmental area of adaptive management is that conditions change, you have to be flexible, and you don't make decisions forever. Science imbues that changing reality is another certainty, and that frankly, there is no certainty and that change is the way things are.

Lastly, and with everything happening in New York today, one thing that is absolutely clear is that knowledge is not a substitute for values. It's a servant and thus it is a servant of

policy. It's not a substitute for good judgment. The example that I'll use was something that appeared in the *New York Times* a couple of days ago. An academic, probably not a professor but perhaps an associate professor at Columbia University (How many of you read that? It's a good story.) sent a letter on university stationery to many New York restaurants. The letter told them that there had been a case of food poisoning and it was just horrible, that he had spent all night awake, and it was just a terrible situation. It was a study to see what the reactions of the restaurants would be to such a letter. Well, needless to say this caused a lot of hysteria, and it's not clear how it all was discovered. The associate professor, (maybe he doesn't have tenure and he's probably gone now), sent out another letter, not on university stationery, apologizing but not before an extraordinary tumult had come about. So, there's no substitute; the degrees don't result in good judgment all the time. That's a funny example, but the reality about what happened in New York today is when you think about the extraordinary technology and knowledge that had to go into this huge crime, it's rather frightening, mind-boggling. It's important to remember that judgment is really the key. The meshing of knowledge with the political as much as we may not want to talk about the political, is in fact what this is; the interaction between knowledge and public policy, hopefully for the good, is what I take from Mike's presentation.

Jim: To underscore just one thing the Lois has said, is that today's events say dramatically that change is the one certainty because we're now at a point of major change as a result. Mike, I would like to offer you the opportunity to respond, react, or supplement and then we will ask you to be the third panelist.

Mike: I will try to just be minimal because these are great comments on their own terms. One reason why I was so glad to get that picture on the cover of the book because clearly there is this image of what's happening in the middle, in this mesh zone. We all agree that is where it's happening. I think that's the image for what science is and the kinds of science that we're all interested in where it's not the easy, "you-know-you-are-in-the-clear-here," but you're always in that striated coastal difficult zone - but that's fine. People clearly work there, and people clearly do great science and great politics there. That is one of the messages from Charles Lindbloom which was that, even in the place where there is no system, people actually do work "systematically" to come to new decisions and to new types of sciences. I love the image of the mesh. I also like the term "fugitive decisions" which is always a good one to keep in mind and certainly one that I was reminded of constantly in Iceland, where I said, politics is just played out in a very and non-subtle way. Many of the decisions there were enacted on the basis of what's good for

the nation or what's good for the economy. It really came down to just personal interests or personal vendettas.

Jim: Regarding the science and civic logo (Dave said that if you note the science segment has one leg missing and nobody's listening on the civic side) I think one of the challenges for Cooperative Extension in the University is to help put legs on the science and to put some ears out there as well. Some of you may also know Cornelia Flora at Iowa State, a rural sociologist, who talks about one of the rules of Cooperative Extension is to help with the transaction costs - the idea of facilitation. I think that is one of the challenges we may not get recognized for, but that is absolutely vital. I'm also intrigued with the metaphors that Ellie mentioned, the sticky intersection, but it may also be slippery at the same time.

Gary Nakamura is our third panelist.

Gary: I am a Cooperative Extension forester in Redding. I would like to comment on the idea that, not just Americans in particular, but people around the world have this sense that science will save us because it got us to the moon. We didn't muddle our way to the moon. Examples like that, penicillin, cancer research, going to the moon, you just don't do that by random activities.

Mike: I think part of that is an education problem or concern, and in fact, the story we had was a longer version, but that edited down was exactly that - getting to moon, because we were writing it just as the movie Apollo 13 had come out. There was a real kludge job when that system went awry, how they pieced together the various pieces of equipment to build an air filter. It was totally not intended and not part of the plan, but they had to come up with something. Actually, getting to the moon was that kind of the thing, although not just when disaster hit, but getting to the moon in itself was this huge kludge job. It was a great kludge job for a very specific set of purposes. We're not on the moon now. It's had its day for a variety of political, economic, and scientific reasons. I agree that we have that image, and I like the differentiation between (I said Euro-American too quickly), and there is something distinctly American about our attitudes toward what technology and science are, what they're going to provide. I think that really does need to change and I do see it changing in places. Ellie brought up the need for humility, not just because humility is nicer, but it is an essential part of any kind of inquiry project. If you don't have some kind of sense of humility, which is not about being a dissembling person, but it's about listening and paying attention to what you don't know. Our person on the Secoya project, Jim calls it being aware of your own limitations - "if it got us to the moon it can do anything" - it lacks that essential ingredi-

ent that I think it needs to be put there. People are trying to put it there as part of the way that we learn about what science and technology are which are not these miraculous devices. When it is miraculous, it's because of a long series of trial and error experiments, or kludge jobs, or whatever.

Another generalization - there are some truly miraculous astounding and amazing things - there's a question of where the dominant emphasis should lie. It's more on these other kinds of values such as humility, trial and error experimentation, knowing your limits, and knowing that it takes a diverse group and different groups of scientists and politicians and active citizens actually working in this unusual assemblage. I just like the ring of that term. It's not like we have some fetish for the unusual, but again the unusual, like humility, results in an inquiry and projects that are more fitted to the kinds of noisy problems that you are trying to address. If you don't have an unusual, humble assemblage, you are not going to be able to address something like Sudden Oak Death which is not going to succumb to the kind of command-and-control model. It's just not.

Comment: What is the derivation of the word "kludge?"

Mike: The derivation is unclear and I did not make up that word. There are a couple of dictionary definitions and one dictionary says that the derivation is unclear. Probably it is post World War II and it is an engineering term, but also some people in computer sciences say that a kludge job is something like that Apollo 13 image; it's kind of ugly but it works. The one suggested derivation is from the German for clever or it is a combination of clever and klutzy. It's that mesh, that middle zone, that amalgamation of objects as well as an amalgamation of aesthetics. It's beautiful and it's ugly. It works and it shouldn't work. It's a word that we heard a lot of the computer scientists use, but generally in engineering and in the sciences it's both a term of approbation and admiration at the same time.

Jim: I think it's related to the word "snafu" and we all know the origin of that word [laughter].

Comment: It was actually taken from people who do computer programs who would take whole gobs of code that were designed to do one thing, slap them together for something else, and come up with a third thing. There was massive code that didn't do anything for the third purpose. That's one reason why it took so long to figure out how they were going to solve the Y2K problem because that code, in fact, is still running basic systems. There's lots and lots and lots of code that was kludged together, slapped together.

Comment: You have all sort of alluded to how a lot of us have put a lot of faith in science and that science will get us answers. For those in politics, a lot of times that may be the case, but a lot of times that you don't have the time to wait for science to be perfected, or you have competing science or incomplete science, but you still have to make a decision and proceed. I was wondering what do you do for groups that have pinned all their hopes on science to find the answer and they are discovering that maybe it is not the panacea that you thought it was, but yet they still have to make a decision?

Lois: Or where the science was wrong; you find that out, too. There is no easy answer for that. We've had issues with toxics in Davis, where we had to make decisions about whether or not houses should be built in proximity to what had been a toxic area and there was conflicting science testimony. That was the same issue about air quality in building a freeway overpass. There was conflicting science evidence. That's the beauty of being in Davis and being on the City Council. There are so many people in the community who are experts in the same area, that you have to make a decision and they don't always agree. It's a nightmare, a real nightmare when that happens. Which you do is you discount both. You have to make a decision based on other factors and you proceed. With regard to the science I'm involved with now, watershed issues, we don't have all the science yet and we are trying to get money for more information. Where we have to make decisions, we do such things as adaptive management. We allow for change. That makes everyone (farmers, environmentalists, and public policy makers) very nervous because they want certainty and they want to plan their lives. They want to plan their crops and their water regimes around certainty and there is none. There is no answer other than to make people feel even less certain about their lives than they were before. I don't have a good answer for that.

Comment: It just seems that given the topic, it is interesting because science is not helping the civic process.

Lois: Sometimes it does and sometimes it doesn't.

Mike: That's often the most honest answer.

Comment: This is a question primarily for Ellie and Lois. Ellie, in your role as a provider of University science-based information to the Marin County Board of Supervisors and Lois in your role as a target sometimes of that information, when does it work and what does it not work? When does a political body, a very important political body, like a county Board of Supervisors use, ignore, or sweep aside information that comes from a source like that? I can suggest several variables here. Considering the point of development of the issue, is early information better than later information, is it

the case of the relative credibility of the source, or is it the case simply of the other political factors?

Ellie: Your answering all the questions [laughter].

Lois: She's right. You started to answer your question and it was an excellent answer. It does matter when in the process you get that information. Elected officials are not experts and may need time to digest and think about implications. We are not real good at processing complex information quickly in the public eye. When in the process are we allowed to think, reflect, ask questions, admit that we don't understand what was just said? That is really important to us. So, early in the process is important, the credibility of the person who comes before us is absolutely key. How do we determine that credibility? Each of us has our own way of doing that, but it's important.

Ellie: I would agree with both of you that timing is everything. If you have already missed the boat and you show up at the hearing and the decision has been made, forget it. Communication is really critical because you have to develop that relationship with the Board of Supervisors, or whomever the decision and policy makers are so that they learn to rely on you as an information source. They learn to go to you over and over, hopefully in a timely fashion because you are reminding them, "Well, if you just got to me a little bit sooner I could have had that." I can think of situations in our county where the science was really helpful, the timing was perfect, the issue wasn't too complex, and it was good. Science really was very civic. I can think of other situations that were very complex, the timing was off, and the delivery was bad. That's another piece and that is the delivery of the knowledge and the way it's was interpreted is another tough factor. You work with the scientists who's got the knowledge which isn't necessarily embodied in you, but you have the understanding of how politicians think and work. The challenge is for you to deliver that knowledge so it can be useful. Interpretation and delivery are really important.

Lois: Also, it's effective when all of the other factors are sort of pointing in the same direction. If you have an issue and there are 100 people in the audience who don't agree with the science, come hell or high water they don't want you to vote that way. It is too strong of an issue, and there are too many things at stake for them. Sudden Oak Death is probably one of them.

Ellie: No, but coyotes are.

Lois: The stars have to be aligned in order for the right response for science to have its desired effect.

Comment: If you already know the decision of your public is leaning towards, do you do any networking to invite the other group who can give you a complete picture so that the decision is not based on noise being created?

Lois: Yes, if you have the time you try and do that, you certainly do. It is a simple question of time and resources. In a community like ours where you have varying points of view, that is available to you. Nobody is 100% correct.

Comment: Right now there is so much going on in the field of biotechnology that we're not sure about many of the findings. In the European Union, there is a group of scientists and professors who have formed an organization where every time there is a Green Peace demonstration, they make it a point that a scientist is present who can answer questions. I think we, who are scientists, should be more active in those kinds of things.

Lois: That's a wonderful case study of this issue, what's happening in biotechnology and food processing. My reaction when you were saying that was that you will find scientists on all sides of that issue. I am glad that the Yolo County Board of Supervisors has not had to deal with that issue yet.

Comment: I want to thank Mike for a very stimulating presentation and discussion. One thing that really resonated with me was when he said that multiple contradictions are where the best science always happens. I know that my colleagues can appreciate there are many contradictions that are in the division of Agriculture and Natural Resources. When I encounter those contradictions on a daily basis, I usually get angry, frustrated, and confused and I seek support. One of the many things I will take home from your presentation is that I'm going to try to use those as opportunities, and that is helpful to me. The other thing is a little bit of a word play off of Ellie's remark. She was remarking about how all departments in universities can be isolated from communities and civic service. I would like to say that we are not financially isolated enough. To support that claim, I would like to bring to the table explicit strategic alliances between private sector and whole departments within the University of California, implicit support from California agriculture interests, and county support for Cooperative Extension that plays a very big role especially when a scientist gets too civic, and the reliance of the University on soft money. I am a principal investigator and I bring a lot of contracts and grants to the University and that influences what I do and what my staff does. There is an entire shift in the University of California to a very heavy reliance on soft money. This is not just for our research but for much of our staffing. This has a huge influence on our ability to play a fair role. I welcome any comment.

Mike: I am glad that you like the contradictions. It's the mesh. If you think of gears, they only work by friction and it is not as if you can devise a friction-less set of gears that isolate things. The double meaning of isolate is necessary. Yes, things have to be isolated, but they have to be isolated by being connected or you are caught in that space again. That space is the only one in which you can work and the only question is time. It's how long can you operate in that space and it is a question of ongoing work. There is no solution that is going to stop time and end it. It is just ongoing.

Comment: I just want to add a positive thought about the criticism of the financial role. Some of my most effective programs is when I am working in the civic role are when there has been a financial contribution by the decision-makers. Obviously, having early financial partnerships can also enhance your ability to extend information.

Comment: When I think back to the conference logo, I suggest we should add a third circle - the public. Given the level of science and literacy, one of the most important things that scientists and politicians can do, and Cooperative Extension can play a big role in this, is to communicate to the public that science and knowledge are ever changing. When the word comes out about a scientific discovery, people think that this is an end point as opposed to it being one step along

the way. People have a real hard time with change and the fact that change is a constant. The public would know and anticipate that more change will come. That might help us from going back and forth, sort of serve the volley between Democrats and Republicans every four years, so that if there is change, we can go back in four years. There may be some more stability to the public.

Comment: I am stimulated a lot by the conversation that was just going on and especially some of the comments about where funding comes from and the research that we do. It brought me back to Mike's comment that facts are not found, they are made. I found that really disturbing and I began to think about that. He talked about two sets of scientists coming to the County Board of Supervisors and saying, "Here is the truth." That really just points out how really important it is for us to be aware of our own biases. What I learned in graduate school is that there is no such thing as unbiased research, we really need to keep that in the forefront, and we need to be so self aware and reflective about our own biases and what we are putting forth and publishing as truth. That truly is truth through our own eyes. I found that disturbing today.

Jim: Facts are made and so is lunch [laughter] so I'll ask you to join me in thanking Mike, Lois, and Ellie.



Lois Wolk, Ellie Rilla, Mike Fortun, Jim Grieshop

Youth Civic Engagement: Membership and Mattering in Local Communities

Connie Flanagan



Connie Flanagan is a Professor of Youth Civic Development at Pennsylvania State University where she is involved in Youth and Family Education, Extension Education, Comparative and International Education, Human Development and Family Studies, and Women's Studies. She is a William T. Grant faculty scholar and a fellow of SPSSI, the Society for the Psychological Study of Social Issues, Division 9 of the American Psychological Association. She co-chairs the social policy committee of the Society for Research in Child Development. Flanagan has conducted research on youth political socialization, focusing on the factors in families, schools, and communities that promote a sense of membership and civic values among young people and has published many journal articles and book chapters.

Thank you Stephen, that's a very kind introduction. I should, however, dispel one myth. You can call yourself anything you want to on your business card. The only reason why I'm the only professor in the country of youth civic development is because my department chair asked, "What do you do? Can you capture it in a phrase?" I said, "I do youth civic development," and he said, "Put it on your business card." So, you create these images easily. I also want to thank Dave and Jeff and all the other organizers whose names, I'm sorry I don't know. This is really an exciting topic. The presentation I'll give will be at the other end of the spectrum from what Mike said, but I have a sense that this group can handle it and will be able to make sense of it. The other thing that I want to say as a disclaimer is that I actually do a lot of research which I am embarrassed to say to an audience like this.

Second Annual California Communities Coordinating Conference

I do get out a lot with the public, but the discussion panelists have more real life knowledge than I have and can put some real meat around what may sound like a lot of theory. I picked up several handouts since I got here that focus on topics such as realizing the engaged university and the Woodlake Pride project. These projects and the earlier discussion suggest that you are already doing a whole lot of youth civic engagement. Maybe what we need to do is to focus more attention on such work.

I'll start with some historic quotes about land grant universities. By the way, six years ago I didn't have any idea what the land grant universities were. When you start to do civic work, psychologists abandon you and groups like land grant universities pick up on you. There really is a civic mission in the historical foundation of why land grant universities exist, as you all know. I've chosen a few quotes to begin and end this presentation. This quote is from the philosophy of the land grant university:

Probably the biggest thing that adult ag extension and 4-H club work are doing for individuals and for the nation is not so much the growing of better crops or the rearing of better livestock or the making of better kitchens, but rather the giving of actual experience in the practice of democracy and it has done so not by telling people about democracy, or preaching about it, but by practicing it.

I think that this shows meaning in the work that people here. I'll note also that in 1908 when President Theodore Roosevelt pulled together The Commission on Country Life, he asked that they make recommendations for rural renewal, and not only did that Commission recommend Cooperative Extension Service and 4-H clubs, but they thought of education in a particular way, as a reciprocal process between universities and communities. So, the engaged university that we've heard about during the last 5-6 years is not a new thing. It's simply that we've gotten far away from it and we've really forgotten our historical roots. I want to emphasize the message of reciprocity that was part of the early land grant philosophy - that the information and the knowledge does not rest in the university. There was really a sense that the public and the communities knew a lot and brought different knowledge to the table.

I'm going to talk specifically about youth and I'm going to start with a very relevant study from the sociological literature called *Voice and Equality*. It is a book by Verba, Scholzman, and Brady which talks about adults that are engaged in their communities - the one thing that distinguishes them from those who are not engaged in their communities and in the problem solving of their communities. The authors note that when these engaged adults were young people, they were engaged in some type of youth organization. It could have been in extracurricular activities at school or community organizations and 4-H figured prominently among them. It is not clear why that relationship exists, but it may be that people are "joiners." It may be that simple. However, I think that the reason is that voluntary youth organizations develop a real civic ethos in a young person and it becomes part of who you are.

In this regard, let me draw from Alexis de Tocqueville (we never heard of Alexis de Tocqueville until about five years ago and now he is all over the place, sort of like he's our second cousin), but he did observe what he called "schools of democracy" and I think that is an apt phrase. Youth organizations, civic clubs, associations, and NGOs are the ways in which we learn about democracy and practice it. I've come to be very fond of this quote from Michael Walzer who is a political theorist and philosopher who said, "A citizen is most simply, a member of a political community is entitled to whatever prerogatives and encumbered with whatever responsibilities are attached to membership." I'm fond of this definition because it takes what it means to be a citizen into real life activity and it makes the notion of citizenship real for people who study human development. It removes the concept from the political science realm of voting behavior and into everyday life of growing up. What we've emphasized in our work is notions of membership, of rights, of prerogatives, and of responsibilities. What I want to illustrate today is the ways in which being a member of an organization like 4-H or any other youth organization helps you develop a sense of citizenship, your rights, and your obligations.

Now that I am a full professor, most of my presentations are cartoons because I think they actually illustrate what the points are. The first point I want to make is that we pay so little attention to what children and youth know. We rarely ask them for their opinions. I want to quote something that Jane Addams said a long time ago and that is, "The sense of the uselessness is the severest shock that the human system can sustain. If persistently sustained, that uselessness results in atrophy of function." If we don't include youth, there is a chance that they won't have any practice in doing the work of citizenship. Historically, 4-H has a very proud legacy of patriotism. Youth organizations are political organizations. The whole issue with the Boy Scouts revealed where they stood in terms of specific principles and the organization of democracy and I'm proud to say that 4-H has been very

strong on issues of inclusion. During the two world wars, 4-H was quite prominent in drawing attention and putting a spotlight on young people, largely through projects like victory gardens. I understand from Stephen Russell, their early days were here in Davis. During the war, the kinds of work that youth were already doing became very useful work in the interests of the country because adults essentially weren't present. 4-H members through their victory gardens grew crops; they did what was called Food for Freedom which was the 4-H slogan. They produced enough food to feed 1 million soldiers serving in the armed forces during World War II. Interestingly, and this is an important point, after each World War membership in 4-H grew exponentially. The prominence of what it is this organization does civically was apparent. And the outlet it is for youth's enthusiasm and capacities, once revealed, results in increased membership in the organization.

I'm now going to talk a little bit like a psychologist, although these are quotes from a political scientist. Jean Elshtain has talked about the notion of "democratic dispositions." The notion of democratic dispositions is in the old Cooperative Extension's historical legacies. A democratic disposition means people are ready to be passionate about what they believe in, have strong convictions, but also listen to others with different perspectives. So the notions of negotiation, perspective-taking, and possibly compromise are essential qualities of people that make democracies work. It doesn't mean that passion goes away, but it does mean that good judgment is used as well. Emphasizing the notion of perspective-taking, Sally in this *Peanuts* cartoon strip notes that she is starting a public opinion firm and she has written down everything about what she thinks [laughter]. Charlie Brown then asks, "What do other people think?" Sally responds, "Who cares?" I want to note that in things as simple as club work, the fact that peers hold one another accountable as to what they said they would do, is an aspect of democratic practice. If you don't show up for meetings, and if you don't do what you said you would do, your friends get mad at you. If you don't listen to other people's points of view and to go back to Walzer's quote, if you don't have a voice, you're not going to stay in the organization for very long. The idea of having a say and having other members listen to you is inherent in the organization's sustainability, and it is also what enables people to solve their community problems.

The other issue about working with a group, it is that political goals are not something that you can obtain alone unless you are quite powerful. If you're George Soros or Ted Turner you may be able to accomplish political goals by yourself. But for most of us run-of-the-mill citizens, you can't accomplish much all by yourself. So learning how to work in groups to accomplish goals is essential political practice. Now settings like school or families have hierarchies of power. Adults are in charge. We hope that the adult leaders in youth groups

will take a back seat and that they facilitate rather than be in charge. I think it's really in these nonformal youth groups that egalitarian sorts of relationships evolve and the way you accomplish goals together are learned.

I want to use this *Peanuts* cartoon to illustrate a concept that Harry Boyte has used a lot which he calls "free spaces." In this cartoon she says that, "The school board has canceled my play because it was too controversial. How can it be controversial when *I didn't even get it?*" "Free spaces are places where there is a measure of autonomy, where citizens set their own agendas. They are places of relatively free exchange of ideas, debate, and information." The role of adults, I would argue in those free spaces if we think of our clubs that way, is that they are not in charge. It has to be the young people who are in charge, and that's news to some adult leaders, as you may know. I think that's an image which we really have to promulgate, that adults should facilitate and step in when there are instances, for example of intolerance, and to reinforce that there are certain principles which we live by, but it is necessary for the kids to make mistakes. It's necessary for them to negotiate. It's necessary for them to express their ideas even if they are controversial. The other thing about free space is, according to Boyte and Kari, and this is an area that we really need to work, publicizing the positive images of youth, is that "They render what is otherwise invisible activity visible in public. Such that what it is that young people are doing as contributing members to their society becomes publicly acknowledged and valued." And we don't want and wait for a world war to make that obvious. We want to illustrate and make it public through the media that many young people are not problems to their communities, but rather they are contributing members. We can argue whether they're becoming citizens or actually are citizens which is debated in the literature. They clearly don't have all the rights of adult citizens, but they clearly can make as big a contribution.

I want to say more about why I think youth organizations are essential to democratic society. Vertical relationships between what they called "patrons and clients" - the king gives you things or bestows things on you and you owe allegiance without any voice - are not the relationships that make democracies work. Yet, families and schools essentially are hierarchical organizations. They can have some elements of democracy, but in fact adults are in charge. Youth organizations are the only place we can provide a safe and public and free space for kids to be in charge. There aren't enough chances in their lives to do that. I urge that we encourage horizontal relationships in our youth groups, egalitarian relationships between peers, and that doesn't happen by default. There are bullies; there are kids who talk more than other kids. There are gender differences in power. Thus, there is a role for adults to say, "We don't do it that way, we're not an organization that tolerates bullying." In some of our research with

teachers, we looked at what in political science is called "diffuse support for the polity." The idea in lay language is that democracies cannot be secure unless you have a fairly broad diffuse belief in the population that people in general in society are getting a fair deal, that justice is distributed fairly evenly across the population, and that the principles that we live by are the ones that we want to live by. The notion in the old political socialization theories is that early in life kids developed a sense that leaders such as the president, the governor, and the police, were good guys who had our best interest in mind. The concept was one of a benevolent leader. If you believed in the benevolence of these leaders, you then said, "OK, I'll go along with the rules of the game. I'll support this polity." Since Watergate, the belief that leaders are benevolent has plunged precipitously, not just among adults, but among young people and even young children so that now confidence in leaders is really quite low. What we've tried to do in some of our work is say diffuse support is something we really need. We can't have a society where nobody trusts the institution and nobody believes that others and leaders have their best interest in mind. But maybe diffuse support occurs through other local kinds of experiences. What we have found is that, particularly with teachers, but I think this would apply to leaders of youth groups, community agents, and police, when young people feel that they are following fair rules, that they treat everybody in a similar way, and when young people see teachers intervene in acts of bullying (and that was a specific thing in our studies - the teacher not letting kids make fun of each other), these sorts of beliefs were highly related to the young people's beliefs that America was a fair society, and, in fact were related to their beliefs that they wanted to contribute and to give back to America. Thus, there is a role for adults in youth organizations despite the fact we want to provide free spaces. Free space does not mean that there is a laissez-faire policy or anything is all right. And adults should be available and attentive to ensure this ethos.

I'm now going to shift to talking about social trust. This is a different cartoon in which he says, "Dad, should I trust people or are people out to get whatever they want no matter who they hurt?" Dad turns it over to his wife and says, "Could you handle this one?" Although this is an amusing way of thinking about it, social trust is one issue that I am rather concerned about. On the next overhead you will see three classic items that are used in national surveys with adults and with young people to measure the notion of social trust. Social trust has to do with giving others, and those others are unspecified - people who are out there - the benefit of the doubt. It is items like 1) Generally speaking, would you say that most people can be trusted or you can't be too careful? 2) Would you say that most of the time people try to be helpful, or mostly they are looking out for themselves? 3) Do you think that most people would try to take advantage of you if

they got a chance or would they try to be fair? The idea about social trust is that it underlies the way democracies work and in particular, diverse democracies. We don't know everybody out there, but for democracy to work we need to have a sense that most other people wouldn't harm us if they had the chance; that most other people (like us) operate in the best interest of one another, are committed to a common good, and thus would be benevolent, not malevolent.

Next, let me show you some trend studies. These are from 1976 through 1995 on those three items: Can most people be trusted? Would you say most people are helpful? Would you say most people are fair? As you can see, the line, particularly on the latter two issues, has declined during the last 20 years. These are from the General Social Survey done mainly with adults. The decline of the youngest people in these surveys, the 18-25 year-olds, is even steeper. Something is happening and there is not really any good explanation for exactly why. Something is happening to younger generations who are answering in these national probability studies about "most people" out there. If we believe that social trust is a kind of glue underlying democracies, then these are trends that we should worry about.

I want to make the case that participation in youth organizations and participating in community groups enables young people to develop higher levels of social trust. There are national data that show there is a reciprocal relationship between joining civic associations and social trust. People who join those associations have higher levels of social trust than others who don't join, and by being in those associations it appears that they develop more trust. It stands to reason that by hearing other people's opinions and by seeing them face-to-face and interacting with them in common problems, one gets a basic sense that most people are pretty fair, that most people are not out for their own gain, but it's the stereotypes that we see on the news, or the endless focus on the negatives of human nature that makes us believe maybe people are out there for their own good and they are not like us, benevolent and trusting people.

In 1981 in his farewell address President Jimmy Carter said, "America did not invent human rights. In a very real sense, it is the other way around. Human rights invented America. Ours was the first nation in the history of the world to be founded explicitly on such an idea." Here is where 4-H comes out looking very good in terms of standing for certain principles that our society is founded on such as tolerance.

This next overhead illustrates the level of anger that is out there around issues of inclusion and tolerance. The picture shows a group of adults demonstrating against extracurricular activities at school because kids wanted to found a club for gay youth. The next overhead cartoon raises a broader

issue concerning the way in which we think about "us" and "them." As you can see, Linus is playing with some small snow people and Lucy whispers, "I'm worried that he's hanging out with the wrong crowd." The "wrong crowd" category pervades much of our work in prevention. In the prevention literature, there is a very strong bias that some kids will get into trouble and the best way for us to teach our young people is for them to see the signs of those other people getting into trouble and then to get away from them. Most of the adolescence textbooks, and I haven't taught adolescent development for quite a while, but at least when I was teaching, had all these chapters on regular development and how kids went from age 11 to age 18. Then there was the chapter on "them" [laughter]. What was put into "them" was everything from crime, drug abuse, juvenile delinquency. Race was also in that chapter on "them." Despite the fact that we are a diverse society, the everyday experiences of our young people (in their neighborhoods, clubs, and schools) are rather homogeneous. We really have to work at notions of inclusion, not just because it is the right thing to do, but because it enables certain kinds of civic capacities; that is to take others' perspectives and to understand what compromise means, to see the world from a different point of view, from the very sheltered one that you've known, and to see that most people are benevolent and deserve the benefit of the doubt.

I will mention just one thing from Robert Putnam's book and I know that his book has caused a lot of argument about whether he is right or not. He makes a parallel between the end of the last century and the end of this century in terms of the kinds of issues and problems that we have to deal with such as large immigration, massive disparities in income, and demographic shift in communities. He makes this important point for those of us who work in communities and work in youth development. He uses the term "civic inventiveness" and lists a huge number of organizations or associations in this country that were invented within a period of about 15 years at the turn of the century. Putnam notes that people confronted the changes, assessed the need, and formed organizations to deal with the changes. The organizations that were invented in this period of civic inventiveness include most of the youth organizations that we can think of. It may be that we are in an era today where we need more civic inventiveness.

The basic models of our youth clubs have a lot of value, and we may need to take the essence of those organizations and adapt it to what the changing needs are of our young people in communities today.

I have some other things to say about groups and these are paraphrased from John Dewey who asks that we assess our clubs on two dimensions: how numerous and varied are the

interests which are shared within group, i.e., you don't come together just for one thing? Rather there is heterogeneity in the ideas and interests that are brought together. Second, Dewey says, "To the extent that the interests of the members are numerous and varied, it would be more likely that every-one would play an integral role in the group. It is less likely that few would take charge." In sum, it is really important to note the exposure to other points of view in the way in which we organize our groups and the way in which we organize their activities.

The whole notion of civic development and civic engagement has been reduced in many debates to the idea that kids do community service and that's fine. We know that service is part of the heritage of 4-H, and it has always been there, albeit what people do varies across the board. It is one way in which we can enable kids to see the issues of their community and to take an active role in having a voice in those issues and addressing them. There is a difference between civic work as charity and what Harry Boyte calls "public work." We really need to get away from the notion that you are doing good for others and it can't be just random and when you feel like it. If you go back to the Michael Walzer quote, that a citizen is a member of a political community with rights and with obligations, there is a notion that you can't just do it when you feel like it. Random acts of kindness "when you feel like it" does not constitute a civil society. Consistent with what Harry Boyte contends - if we really want kids to understand the notion of community service, of how they are a member of the public, how they are not just doing good for others in need, but that the needs of those others and the needs of themselves are linked. We really have to emphasize public spaces and public parks and the whole sense that there are public goods that we share in common. We are not just doing something out of a sense of noblesse oblige. Rather, integral to our membership in communities is the obligation to preserve and improve those goods that are shared by the public.

A few months ago, I was at a meeting and a guy who studies moral development noted, "Character education is out there like kudzu. It is just everywhere and it's choking us." The pervasiveness of character education suggests that people are worried about the direction of our youths' values and that may be a good thing. But let me be hard on character education for a moment because some of the methods used in character education are actually at odds with developing civic engagement in young people. One of my criticisms of character education is the premise that good character is just being good, is staying out of trouble, and doing what you are told. I want to argue that if we really care about developing civic competence, this is precisely the wrong way to go. Doing what we are told does not mean that we will be prepared to make informed judgments. Character education also seems to have a rather negative view of children as if they have the

mortal sin on their souls that needs to be erased [laughter]. The assumption of many programs is that the kids need to be "fixed." If you take the very opposite view of kids as assets to their communities, and offer them opportunities to act as assets, you are much more likely to see their true character revealed.

Another criticism of character education is the use of rewards for good behavior. The programs state that in order to bring attention to good deeds, children should be given rewards. This strategy is diametrically opposed to all of the literature on intrinsic learning which shows that the quickest way to kill anything is to recognize it with some sort of external reward. I'm going to be hard on the Josephson character education model which has been adopted pretty widely by Cooperative Extension. Before I go on I should note, in fairness to people using it, that you can use elements of Character Counts without adopting the whole program. But listen for a moment to what David Brooks who is at their Center for Character Education said, "We are in the advertising business. The way you get people to do something, whether it's buying Rice Krispies or becoming a trustworthy person, is to encourage conformity through repeated messages." Selling virtues as if they were the latest flavor of candy or cereal reaches the point of self parody in the following next quote from their curriculum packet: "There is new product on the market called Considerate Cereal. Eating it makes a person more considerate." The kids are then supposed to design a label for the product. There is a set of videotapes called Character Counts, and I thought I should actually educate myself about Character Counts before I started blasting away at it, so I sat down and watched all of the tapes. Among the various things that you could critique from a civic perspective is Josephson's statement that, "If you want to teach character, you should stick to the six pillars of character." Further, he warns, "Don't go into areas where reasonable people could differ [laughter]." What else is this meeting about, right? I would like to submit, and I am probably preaching to the choir, we haven't seen anything yet in terms of what our children and grandchildren are going to have to deal with in terms of reasonable people differing. What kids really need is not a didactic approach to being good, but ample guided opportunities to face dilemmas and to argue them out, opportunities, in other words, to exercise their collective and individual judgment. We don't really do enough of that. In fact, we shy away from that in schools.

Let me illustrate the point about the kinds of citizens democracies need by drawing from one of our studies in which we asked young people to tell us what they think are the characteristics of a good citizen. I'm going to use quotes from this project to illustrate the errors of some approaches to character education. This first overhead is the set that we called the Lowest Common Denominator of Citizenship, e.g., a good

citizen is someone who doesn't steal or kill, in the most basic sense, someone who doesn't do anything wrong. The observations that fall in this category add such things as a good citizen is one who keeps a steady job and minds his/her own business. But now, let's proceed to a higher level: a good citizen works for themselves and others, is not afraid to stand up for what they believe, cares about their country and community, and is willing to do something about it. I'm going to show you a picture from David Halberstam's book, *The Children*, which came out about two years ago in which he follows the lives of the people from the Student Nonviolent Coordinating Committee (SNCC) who were active in the very early days of the Civil Rights Movement in this country. They were very young people who, incidentally, came largely from agricultural colleges. They were kids, many of whom were right off of the farm. One of them, John Lewis, is still in Congress and he came right off of the farm. He was the first in his family to go to college. These kids were risking a lot and really stood up for something that they believed in. To do what was law-abiding in those days would *never* have been to participate in a sit-in.

A major critique of civics education in this country is that we try to avoid controversy even to the point in some elementary schools of acting like the Civil Rights Movement was a friendly integrated experience. I am not kidding. We teach two things when we do that. First of all we lie about some of our history. Second, we act like history is a done deal, like there hasn't been controversy in which people took different sides. The Truth and Reconciliation Commission in South Africa is an extremely poignant example of my point. By facing the horrors of their history of apartheid, they were able to move forward to build a democratic society with the pledge to never let the past be repeated. We really do kids a disservice by not telling them all of the facts of history, all of the truth. Instead, when we tell them only the good parts and acting like history is settled, the results is that young people see no reason to participate and to take a stand.

I want to turn next to a brief consideration of trust and begin by pointing to some observations drawn from literature on social movements. That literature notes that when working for social change, people are likely to experience some anxiety, uncertain because of the indeterminacy of their situation. Will there be a payoff? Will you realize the cause that you had been working towards? Will you actually suffer some serious personal consequences? But the literature indicates that by being together, people develop a collective identity or solidarity, and that gets them through the uncertainty. There is something about working toward an end and or a cause, and I think this applies to civic work as well, that allows us to deal with the fact that we are not sure and we are scared. We are not quite sure what might happen, but we are in it together. What occurred to me during this morning's discussion is how low our trust in institutions is in this country. We

don't trust doctors, I am not sure about scientists, and we certainly don't trust politicians. If you look at the police and most of the institutions of government, there is a rather low level of trust among the citizens. It may be that what needs to replace that mistrust, is these kinds of local civic activities we've been discussing at this meeting in which people develop trust in one another and in what they are working towards which allows us to deal with the uncertainty of life.

I'm going to conclude by making a case for the need for values. In one of our studies, we tried to learn what young people think it means to be an American and what they think holds us together as a people. So, we asked them in a number of ways, "When do you feel like an American?" "What values you think we have?" "When you feel like a member of your ethnic group?" and "What values do you learn from your family." One of the questions was, "What does it mean to you to be an American?" A couple of kids, and this was not very many, said it meant to go shopping [laughter]. This would never have occurred to me until I looked at newspapers on the 4th of July or on Presidents' Day. You can pick any newspaper across the entire country and deduce that what you are supposed to do as your patriotic duty is to go shopping to take advantage of all the sales on those days. I use this example to illustrate a point. The point I want to make is that we really need to stand for common good values because market values are out there big time. They surround kids. In fact, the market is appropriating symbols from our religion, our cultures, and our politics. I've collected a few examples on the following overheads. In this one, Omnipoint I think, is a telephone company, is selling their product by appealing to free speech. I actually saw an advertisement for some cereal, which said to exercise your freedom of choice by buying cereal. Here is another which I picked up from *Forbes* magazine which says, "Capitalists of the world unite." The illustration takes symbols of the Cultural Revolution in China. No matter what you feel about that revolution, this is another example of the market appropriating, in this case a cultural symbol, to sell a market concept.

I would like to end with a few quotes. The first, from Thomas Jefferson says, "If all we do is pursue money, the future of our republic will be bleak and tyranny won't be far behind." The second is from Václav Havel, who as you know was the first president of the Czech Republic. He says, "The best laws and the best conceived democratic mechanisms cannot in themselves guarantee legality, freedom, or human rights unless they are underpinned by certain human and social values." I'll finish with a quote about the legacy of Cooperative Extension in developing the values of the next generation. This comes from Barrett who said, "Extension work is a social and welfare movement based on the idea that we are founding a democracy which is not a form of government, but the expression of the souls of men and women. Extension work is not intended primarily to make better crops or animals but better men and women."

REACTION PANEL

Carole MacNeil, Director, Statewide 4-H Youth Development Program

Fe Moncloa, 4-H Youth Development, Santa Clara County

Connie Flanagan, Pennsylvania State University

Stephen Russell, Human and Community Development, UC Davis (moderator)

Stephen: I'm going to introduce the panel, do a little bit of a moderating, and I will also make a few points. This is very exciting for me and I think it is exactly what a lot of us are thinking about. I am joined by Carole MacNeil, the Statewide Director for the 4-H Youth Development Program in California and Fe Moncloa, who is a 4-H Youth Development Advisor in Santa Clara County. I'm Stephen Russell, a Youth Development Specialist in the 4-H Center for Youth Development in the Department of Human and Community Development at UC Davis.

We were talking this morning about science *as* civic and maybe this afternoon we'll be talking about the science *of* civic and how we understand how that happens and develops in communities. One of the nice things about Connie is that she does some of this modeling of what we are supposed to be doing in our community by gently and kindly offering some suggestions, ideas, and strong criticisms of the ways that can happen. She does that in a nice way and I've always appreciated that.

I'm going to start by telling two stories. The first story is a short one that Fe shared with me. We were at the State Leadership Conference which is an annual conference for 4-H youth. We were doing a session on teen pregnancy. Discussing a topic like this was unusual. It was the first time a topic like that had been on the agenda at the State Leadership Conference. We met with eight young people and we asked them what they thought were the causes of teen pregnancy. One of the very first things that somebody said was there is no sex education and that there wasn't enough sex education. We asked how many of them have had sex education. One young man from a high school in Los Angeles said he had never had any conversations about sexuality in his church or in his school; he did not specify about his home. He said he was there that day because this was something he would like to talk about. Wow! [laughter] This is a sixteen year-old!

The second story, and a more moving one for me, was when I was at another regional youth conference. The joke about my title is that I'm a Youth Development Specialist who doesn't get to spend very much time with youth. I was asked to speak about the challenge of change. I had just finished a paper about changing demographics of the youth population in California. I wanted to talk with young people and start

them thinking about what this means for leadership. The communities that they are growing up in are very different communities from the ones their parents' grew up in, and they will be very different from the communities that their children will grow up in, assuming that they will continue to live in California. We talked about how amazingly diverse California is becoming, and that this may an opportunity to become the first place on the planet that may be multicultural and not just multiethnic. A young man came up to me afterwards and said, "I am concerned that I may be racist." I was very, very surprised to hear him say that. How do I respond to that as the professional expert adult? He said, "I am really concerned about this. There is tension at my school between groups of kids that have different ethnic identities and I am concerned because I become angry and there is no one I can talk to. I have never said this to anybody. I can't talk about it."

A point that was brought up this morning is that there are more questions than there are answers, and that science leads us to more questions. The question for me is how do we engage young people in the issues that are so critical to them, that are defining issues for them. Culturally we have often dropped the ball in the past in such fundamental ways for young people and we are continuing to do so. The challenge for us now in youth development in California, and ought to be the challenge for all of us regardless of where we live, is how we deal with diversity and an understanding of difference in areas where consensus is not clear. When I appreciate so much about Connie's work is her steadfast commitment to articulating that this is the basis of democracy. We have to be serious about that. We have to understand that and make it clear in our communities. Who matters is very important and that we have to recognize that the playing field is not even. We matter in different ways. I appreciate that Connie brought up the issue about the Boy Scouts. A lot of you may know that a large part of my research is about sexual minority youth, gay and lesbian youth. One of the reasons that this is so interesting for me because it is such an interesting cultural space for civic engagement, for understanding how young people become part of their peer group and parts of their communities. This is an issue where reasonable people disagree, as some might say. What we have done, in terms of thinking about youth, is that we have abdicated the responsibility of thinking about that. What we have said is that we

will not address those issues in a public way for our young people. What this does is leaves them to figure it out for themselves. You've seen this and it is our history with sexuality. It is an example of the public issue where we have avoided responsibility with young people to engage them on those issues, the issues that really are about themselves and their mattering within the context of their communities. This raises lots of questions. How do we foster an organization that connects young people to discover their mattering, but also continues to be critical and study how that happens, because that is who we are and that is the contribution we need to make?

Carole: Yesterday I had a chance to review a draft of Connie's presentation and prepare a few remarks. I was excited, encouraged, and inspired by some of her thoughts and reflections and by the work in general that she is doing. I continue to be excited and inspired, but somehow the remarks that I prepared yesterday, in light of today's events, just seemed a little less relevant. So, I scrapped all of them, and I thought I would just talk a little bit, offer a few questions, and maybe make a few reflections that respond both at the same time to Connie and her work and also to the events of this morning.

As I watched the news this morning, I was overwhelmed with a sense of helplessness and powerlessness. I thought what can I do to help? I wondered what it is an appropriate response of an organization like ours to the heinous acts that unfolded this morning? What is the role of the 4-H Youth Development in issues of life and death, war and peace? Once thought that I admit crossed my mind was that I needed to quit my job and to go work for a world peace organization. Then I realized that in some ways I already do. 4-H Youth Development is very relevant in the context of today's events. This is where it links back to Connie's presentation. Our role in helping youth to develop and practice skills in civic engagement and democratic participation seems heightened by today's events. We can help youth understand their connection to their community, their country, and the world. You may recognize those phrases because they're in our 4-H pledge. We can help them learn skills to come together with other community members to develop responses to unexpected tragedies or even to address the underlying social issues that lead to such tragedies. We can provide places for them, as Connie stated, to face dilemmas and argue them out. We can hopefully instill in them a sense of hope, that good can win out over evil, and give them a sense of their own power to make sure that happens. This morning's events remind us that there is a great deal of work to be done; to replace ignorance with understanding, and to replace intolerance with respect. Connie spoke of the importance of learning and perspective-taking and a need for diverse environments in order to accomplish this. This is an important charge for us as we look at the demographics of our state and our

various delivery modes. It means that diversity, in each and every 4-H context, is important, not just in the averages across context which are the numbers we tend to look at, but that this diversity allows the opportunity for our young people in perspective-taking as well as skills and healthy resolution of conflict. Creating diverse environments where all members are heard and respected will require us to act with the intention to go into territory that is murky and sometimes downright scary. It will require us to understand diversity as a multifaceted concept, not just simply a question of race and ethnicity. It will require us to address the effects of not only individual discrimination, but also institutionalized discrimination and hate. The events of today illustrated in a horrific way why this work is critical. This is one way that 4-H Youth Development can be a world peace organization. We can learn what Putnam calls "civic inventiveness," and respond creatively to the current realities in the current issues and even the most tragic issues like those of today.

Fe: I'm going to share with you is a story of a project-in-the-making in Gilroy, California. I say it is in-the-making because it is really at the beginning stage. It is a story of youth civic engagement. Gilroy is a city of approximately 50,000 people. I have been working in the community for the past seven and a half years ever since I became a 4-H Youth Advisor in Santa Clara County. Gilroy is south of San Jose and it is very distant socially and psychologically from San Jose. It seems as if there is a wall between San Jose and Gilroy. As far as a youth risks, Gilroy has the highest teen pregnancy rate, the highest high school dropout rate, and the highest youth violence rate in the county. I started getting involved in Gilroy and in this youth group because of all the youth violence that happens there, and because of the strong partnerships with several community-based organizations, city councilmen, and the police department.

It all started in April of this year. There was yet another act of youth violence. A man who was setting up the goals on Saturday for a soccer game the next day was killed in a drive-by shooting incident. Gilroy police believe that this incident was as a result of a gang initiation since the man had no affiliation with gangs in Gilroy. After the incident, the community came together to help the victim's family, conducted a dialogue about the multifaceted issues around youth violence, and identified prevention and intervention strategies. The momentum lasted about two weeks, and soon after the community resumed its daily operations. At this point, community leaders approached me and asked what could we do to engage in a dialogue all the time that wouldn't just last for two weeks, but would be ongoing where people can come together to exchange their opinions and hopefully to reach a common ground. That word rang a bell and I remembered the work that Carol Patterson conducted in Vallejo. The teens in Vallejo attended the Public Policy Institute offered by UC

Cooperative Extension and conducted several community forums. First they framed the issue of teen pregnancy and then they conducted forums. The program was very successful. I suggested that we do something similar in Gilroy, so I presented the idea to my partners a month before the Public Policy Institute was taking place. I said, "This is what I think we should do. What do you think? Do we have buy-in?" I got an immediate buy-in from the principal, the superintendent of schools, the police department, the mayor, and several community partners. The principal identified 10 teenagers who participated in the Public Policy Institute in June. This group of teenagers, at a very young age, were talking to very strong Republicans, Democrats, and people who haven't really made up their mind about their political affiliation. The group was diverse; we had Asians, Native Americans, Caucasians, and Latinos. For those of you who are not familiar with the Public Policy Institute, in the first part teenagers learn theory and how to conduct community forums. Throughout the summer we met and they practiced moderating a forum using the teen pregnancy issue. They did it at a high school and they said, "This doesn't work. We need intergenerational opinions." So, just last week we participated in an issue framing workshop and these teens, responding to the violence in the community largely between the two gangs in Gilroy, wanted to frame two issues. They wanted to frame the issue of racial, ethnic, and cultural tolerance and in order to respond to those issues at the high school where gay or lesbian teenagers are harassed and victimized, they will also frame the issue of sexual tolerance. I say it is a project in-the-making because it is happening as we go, it is new for me as well, and I am facilitating it and learning with them at the same time. This was also the first time for me to participate in the Institute so we're learning together. I hope that this is a model and a productive response to the question that Stephen raised about how do we engage young people in addressing the issues that are important to them.

Connie: We often guard our emotional responses and our passion with kids and that's probably a mistake. It moves them more than anything when we genuinely and authentically react to what moves us. That is why people get politically involved; they go out and get the knowledge if something moves them as being unjust or wrong and then they come to the table. Sometimes these huge high-profile incidents also cause a national soul searching. The soul searching that went on after the Oklahoma City bombings perhaps wasn't long-lasting enough. My daughter teaches eighth grade in a low income neighborhood and it is a mixed race school. After the killings at Columbine High School, the front page of many newspapers across the country asked how could this happen in our community. The kids in her classroom said, "You know what? It's supposed to happen in ours."

One point I would make is that these are our opportunities to engage young people because it's bothering them like it's bothering us and we should capitalize on those opportunities. My only pessimism is that we seem to have a very short collective memory about these things. The presidential election, frankly, brought that up as well. The fact that we weren't sure who won for four or five weeks and that we actually began to examine collectively as a society, the major democracy in the world, how elections aren't exactly even across the board. That was a revelation. The mistakes that happen and the high-profile things are useful ways to have conversations and engage young people and have them be passionate about them.

One thing about Mike's presentation I wanted to bring up, was that I had read a little bit about the Icelandic experiment and I was convinced that they were right, that they are homogeneous population. It was a revelation to me that they are not. It raises an issue for me in that the role of the media and the role it is supposed to play of informing us in a democracy. In fact, it is really very hard to get information that is accurate and to become informed citizens.

We should also be frank that all youth institutions, just like schools or any institutions that we form, are political organizations. The history of the Boy Scouts is really quite revealing compared to the history of the Girl Scouts. It was begun as an organization to make sure that boys didn't lose that sort of rugged and manly "yeah, yeah." It has that type of history so it is not surprising. It was interesting in the Boy Scouts coming out (that was a poor choice of words [laughter]), that they revealed where they stood about sexual identity. Probably all of you have participated in conversations with parents who felt very ambivalent. Their sons were in a nice little troop, they enjoyed themselves, and yet they felt very mixed about what this organization stood for. It actually caused a lot of conversations, some of which meant that troops withdrew. All of these are opportunities to have important political conversations and we need to be as honest as we can. We do represent organizations and institutions, but if the members of those organizations and institutions can't speak about what they believe, then we really have to question the organizations themselves.

Regarding what Fe was saying, sometimes I am embarrassed to speak at these type of programs. I have a really nice job where I'm able to do a lot of research, and it is much harder to be out there doing what she is doing every day. I really feel funny sometimes offering answers when I know they aren't as easy to implement. I thought it was very interesting was that she was inspired by another youth group and how they did things, to publicly acknowledge how Vallejo man-

aged to do things informed Gilroy's decision how to go about things. The other thing that Fe talked about is how kids gain civic practice in day-to-day life. Moderating a forum is civic practice. Making a telephone tree is civic practice. Calling kids and asking if they can come to the meeting tonight - that's a lot of work. That's how NGOs and community associations function and how civic work gets done. The fact they changed what they were doing and said they needed an intergeneration approach is a real good example of learning from civic practice and changing the direction of your route on the way.

We also really need to work at more ways to publicize and share these stories about young people. There are a few organizations have made it their interest to show the public more of the positive images of youth. The Advertising Council did it for a while. I think Disney Learning Partnerships right now is trying to change the public image of teachers as civil servants. The Grant Foundation that Steven mentioned earlier has a whole section on how the public's perception of youth can be framed. Maybe what we need to do is just get more of these stories out there because we obviously learn from them and they can change the way we can think about young people.

Comment: I was really struck by a photograph you have and the caption. It reminded me that one of things that was happening during the Civil Rights Movement was that it became appropriate to challenge power structures. Youth today, in high schools and colleges, are deeply challenging the existing power structures. We've seen that in some obvious places such as Seattle, Prauge, Geneva, as well as Gilroy and other places. We don't get these stories out enough. I did want all the adults here to know that youth are deeply challenging us, carrying on the work that started 40 years ago.

Comment: I might be very naïve, but I think that there is something about injustice that moves young people in particular. Maybe we just get older and we just say to ourselves, "Well, the world is just that way." When something affronts them, they say it's wrong and unfair and they'll move to action because of that.

Stephen: Some of the work I'm doing is in gay-straight alliances in high schools because I think it is such an interesting example of a young people becoming empowered to make change in many communities where the adults are feeling disempowered to do it. The young people are saying we will do this, we will figure out how to do it, and you can either get on board or you can get out of the way. It is an interesting moment to watch that change.

Another interesting thing we need to think about is that it happens so many times because young people are so segregated from one another, our differences are segregated. The

sexual orientation issue is one where, even within a high school like Davis High School were so many of the kids have such similar backgrounds, it can be a source of difference and a source of thinking about justice that wouldn't already be in that natural setting. Connie talks about naturally occurring settings for civic issues to play themselves out and I think it's interesting the way that's happening.

Carole: Tagging on to both of your comments, one of the dangers that I see, or one of the traps as adult, mentors or educators, or whatever, is that we tend to underestimate young people's ability to understand the underlying power issues. We think, "Oh, this is so complex and this is so murky that there is no way. This isn't appropriate for high-school kids, much less a middle school kids." Having done youth activist work for more than 10 years, I was constantly amazed by even middle school kids' ability to comprehend what the underlying power structures were all about, and how that was institutionalized as social issues.

Comment: This last comment about the messiness and the complexity takes me back to the earlier panel where we talked about the messiness of science and how we do ourselves and our students a disservice to just show them science progressing from hypothesis to testing to this nice, clean whatever-it-is end. Showing them that complexity, the uncertainty, and the kludging if you will, of these ideas is a better way to present material to people. Otherwise, they'll have this idea that we got to the moon and it was a straight shot.

Comment: I was struck by the chart that you put up that showed that trust and believing that other people have nothing to hide. The trend had not declined as much as the one about the believing that other people were helpful. I was also struck by the fact that the numbers on the charts were pretty low to begin with. I was impressed by the fact that thinking that other people were helpful was perhaps a way to think about re-engaging civic engagement, to start where there is a ray of light and maybe looking at civic engagement and service, which I got the impression you were downplaying, as a way to begin to think about other people as not being as separate from one another as it is portrayed in our society and in the media. What comes out of this is the demonization of whomever somebody thinks the guilty parties are, or whom the people who represent the guilty parties are. I was hopeful that the trend about believing other people were helpful had not dropped that far.

Connie: I am not criticizing service for the very reason you are saying. One of the theories about trust is if you feel like you are a trustworthy person, you project that onto others. We have painted an image for kids in the last decade which is a global world out there and it will be detrimental to them if you don't maximize their competitive edge pretty soon by getting your kid into the right to day care center, and so on.

We have this image that the world is shrinking, it has fewer opportunities, and this intense competition (as opposed to cooperation) does diminish the notions of trust and benevolence in others. I'm optimistic and I think service does not only have a potential to expose you to issues in your community which then can be dealt with in a public way. Service from the national point of view is supposed to be apolitical so you are not supposed to engage in conversation about these things as public issues. It is also the case that you can have a sense of helping others and they are not so different from you.

Some of the best research on service learning talks about the need not to have private journals. That's the other thing I was thinking about when Carole made her point about today's events. We all get transfixed to the TV, but we do it in isolation and the worst thing about service is that you keep your own journal, to ruminate about how you feel about homelessness, and no one else knows about your feelings. It doesn't raise it at all as a public issue. It raises it to spiritual one, which is OK, but it is more than a spiritual issue. I think what we do is demonizing or acting like these individuals who commit these acts are somehow abhorrent. This was done quite a lot regarding Timothy McVey and the Oklahoma City bombings. It was never talked about very much as a political act; rather, it was psychologized. There's a lot of people who actually stood behind the philosophy that he acted on.

Comment: It has been suggested that we act locally, which I fully support, but I would like to ask you to comment about the global reality of the power of the media. It seems like the only legitimate role it presents to young people and to all citizens is as consumers. We are bombarded with consumer information. What we do? There's no question that we have to act locally and think globally. We have this threat of demonization going on about individuals and society and what's going to happen. I don't have any answers.

Connie: I would like to bring in Mike to hear if he has any thoughts about the power of the media as an information source.

Mike: Again, there's a question of tradition. The media has no tradition of science reporting at all from a critical sense. There is no institutionalized need of the media for a good reporter who covers that beat or a good beat producer. It is a civic tradition that remains to be invented. We're trying to educate people not just to know something, but to be able to ask an unknown series of questions.

Comment: There is a group called Civic Journalism or Public Journalism run by someone whose name I think is Jay Rosen. Does anybody else know about this? These are journalists who want to do this because they seriously want to

inform the public. They are very active in local areas and probably have low-paying jobs because they obviously are not interested on being on ABC as a pretty face. There is an effort in the journalistic community to really work at informing the public locally. I don't know of any experiments using cable television or some of the other sorts of local access possibilities that we have.

There is one other thing with youth; the Annenberg School of Communications has this project called Youth Voices. They are doing things in cities where there have been mayoral elections. This is because they think regardless if you're young or old, local issues is where you can have a voice. We spend all kinds of time on the presidential election, but in fact we have very little power to effect national issues. They go to low-income schools because they are committed to those kids that do not have a voice, those kids who aren't getting represented. They teach the kids how to ask questions in a mayoral election, how to identify issues in your community, and then they put them on public access television interviewing candidates. They called it a win-win situation where the kids are seen as articulate, young, and informed citizens. If the candidates don't take them seriously they really look bad in the public eye. Plus, the parents, grandparents, and everybody else watches this because their kids are on TV, they're wearing a shirt and tie, and they look good. The program is being evaluated now because they've done it in just 3 or 4 cities. It's one of these things that is *ad hoc* because it's necessary to have a local election going on. It is an example of how the local media can be used. What happens is the bigger media (I don't know what that's called) are always looking for a couple of minutes of some coverage so they have this thing given to them from public access TV and they end up showing the kids interviewing the candidates. There are some examples out there, but we should get more creative.

Stephen: Adding to that, let's turn the question around and ask young people what can be done for this specific question of what can we do with young people and the media. Simply asking the question gives youth the assumption that they had some power to do something about it. I don't think we do that enough. The national campaign to prevent teen pregnancy had a huge media summit in which young people framed the questions that they wanted to present to the media. They started this partnership with *Teen Magazine* and ABC and/or NBC where young people are saying these are the issues for us and we don't like your portrayal of us. We are going to stop buying your magazines or chewing your gum, or whatever, if you don't respond to us. We talked about this at the State Leadership Conference where the eight kids in our group asked, "What can we do?" and we said, "We guarantee that if all 300,000 kids in California who are part of 4-H decided that they would have a rally at CBS studios, something might happen."

Comment: There are a lot of media organizations in the San Francisco area. One of them actually has the idea that you should speak up about school reform, so it's ongoing. One of the key organizations that have trained kids who've gone on to work in other venues is Youth Outlook. It is interesting how it started. It grew out of Pacific News Service which originally started printing wire stories during the Vietnam War that weren't making it to the mainstream press because it wasn't politically correct for the mainstream press to print these stories. It was also an accident. They brought in some kids and they thought it would be good to have kids conducting interviews, but they realized that during the 1980s and 1990s that one of the important voices that really weren't being heard were youth's voices. They've gone on to speak at the Capitol, and they were on National Public Radio.

Comment: Even if the terrorism stops now, and we're not sure if it will, think about the way the national debate will proceed, in terms of immigration, security measures, and the lobbies. This is a debate that will continue for months and years. Among other things, it is an opportunity to get kids involved and get them thinking. This is going to turn us to a direction that maybe none of us are prepared for. When you talk about reasonable people differing, many very reasonable people will have a lot of different opinions about what is reasonable about giving up certain liberties and privacy that we would not have had tolerated before.

Stephen: I wonder how many young people will go home from school today and not talk about this, but will be thinking about it all day long. I think about my eight year-old niece in a rural community in North Carolina and what kinds of messages are going to be reinforced or created starting today about how this will be racialized, or what things will

come out of this. Will she ever be encouraged to think about how did we ever get to a point in world history where we, as a society, are viewed with such incredible hatred? How did that happen? Will that question ever be asked? Good, bad, us, them – will we get to that point? If we do ask those questions, what difference will it make to them?

Comment: Fe presented a wonderful example, and experiment is maybe too thin a term, about her project. I am very much of a traditionalist on these matters. I really value the role of information and some degree of structure and it seems to me that in your Gilroy example, there is a story of kids getting engaged by doing in a semi-structured fashion because you have the tool of the Public Policy Institute. Although that is not something that should be religiously followed, it at least brings people to where they have some tool to begin digging into information and deliberating and involving other people. It reminds me of what used to be valued many years ago as civic education in the high schools. About 20 years ago, I was interviewing people in elected office and I was interested in why people ran for public office, especially in rural communities where the economic rewards are very limited, although the cultural and emotional rewards may be greater. I came across a number of people who said they had learned a great deal through their civic education courses in high school, student government, and so forth. I thought that was kind of corny but in fact, it did have an impact on these folks. Certainly, that generation or two ago was a much more simple time. I suspect that what passes for civic education or government education these days in the high schools doesn't go over very well and is not a favorite course with most of the students. At least there is a sense that you can do things with structure and information and by providing a tool.



Fe Moncloa, Stephen Russell, Carole MacNeil, Connie Flanagan

CASE STUDIES OF SCIENCE BECOMING CIVIC

Kathleen Eagan, Truckee Watershed Coordinated Resource Management and Planning
Cecily Majerus Clavey River Ecosystem Project
Dennis Pendleton, University Extension/Gary Nakamura, DANR (moderators)

David Campbell: In addition to Mike's and Connie's presentations, we wanted to offer something that was more grounded in the work that organizations are conducting in California. We have assembled a panel to do just that. As I mentioned earlier, Jonathan Kusel was not able to come here by airplane from Arcata, so Gary Nakamura is going to give his own remarks, and add a little bit of what Jonathan might have said. Before we get to Gary, I will introduce Dennis Pendleton to you and he will introduce the rest of the panel. Dennis is the current Dean of the University Extension at UC Davis; the *other* extension. Dennis is the former director of the Public Services Research Program, working with Joyce Gutstein who is in the audience and who is still involved with that program. I have known him during the period of years that I have been at UC Davis. In my mind, he is the greatest personal example of the engaged University that we have to offer on this campus. He is somebody who takes the ideas of science as it is practiced at the University very seriously, and who also works creatively, aggressively, and in a number of different settings over many, many years to link the University to what is going on in the world. He provides services to public agencies, particularly the California Resources Agency, and many others as well as a wide range of community-based organizations throughout the state. He is an excellent example of putting his money where his mouth is regarding engaged University issues, and he was doing it long before it became a popular term and fad. We're very happy to have him here with us today and he will now introduce the rest of the panel.

Dennis: Thanks very much for that too gracious an introduction. I really appreciate it. It is really a pleasure for me to be here today and I am grateful to Dave and to the others who are responsible for putting this program together and who gave me an opportunity to participate in it. I was among the group of people comprising the steering committee for this program and it is fair to say that there was a diverse array of opinions about how to best use the time for a conference such as this. A lot of credit goes to Dave for distilling those ideas from that conversation and putting together a program that is first rate. I really learned a lot from this morning's program. I thought it was stimulating and there are several things from that I will use later. I love the whole notion of "muddling through." From my perspective, muddling through with energy and perseverance is often the way that things happen

and that's why I like that phrase. I also liked the reference to the idea that there is an importance to the way that we use words. Dave mentioned that I am with the University Extension now; I'm proud of the work and the way we do it, and there is something about the term extension, and even about the term outreach, that implies just one direction – "We're here from the University and we're here to help you." I really like the phrase engagement and I think that's a sense of the partnership that I see at the University, working in partnership with communities. Engagement says that more than extension. I don't see any immediate changes in the way we use outreach and extension and they're OK, but there is something about the words that convey a message that we should be mindful of.

I am mainly providing a preface for the two other people on the panel who are going to talk about the work that's been done at the community level. They are Cecily Majerus from the Clavey River Ecosystem Project and Kathleen Eagan from the Truckee River Watershed Council. I would also like to introduce others from these projects: Lisa Wallace and Kerri Timmer who are working with the Truckee River project, and Glenda Edwards who is working with the Clavey River Project.

I want to give you a sense of history of these projects and then the panel will talk about the real work. These projects have been one of the real pleasures of my professional life. They represent what Dave is talking about, a real partnership between the University and communities. I have some handouts that have quotes from other works which may be relevant and I will use them as a guide. The title of the handout is "Sierra Nevada Counties and Ecosystem Management," but it really should say "Sierra Nevada Communities and Ecosystem Management." The counties term came from the Resources Agency contract that supported this work. I wish that my co-conspirator in starting this project, Greg Greenwood who now is the science adviser to the Resources Agency Secretary, was here. I invited him and he was not able to come. These projects are something that came from conversations Greg and I had a few years ago. The context for it was in the so-called post-SNEP era; what should we do to provide science, resources, and spatial analytical expertise to communities in the Sierra Nevada that want to address ecosystem management and land use planning issues? SNEP is

the Sierra Nevada Ecosystem Project which was a multimillion-dollar congressionally approved project that was accomplished with lots of faculty from the University of California and other experts and it was completed in the mid-1990s. Then the questions were: What do we do to make some sense of the data that was assembled in this really huge project? What do we do to support local communities doing some of this work? These projects are what resulted, and it wasn't the first effort from the Resources Agency to do this. There were several others.

This contract was based in the Public Service Research Program and I'm very pleased that Dave introduced Joyce Gutstein who is now the Interim Director of the Public Service Research Program. Joyce is not only willing to let these projects continue with the PSRP, but she enthusiastically supports continuing this kind of work and has been doing lots of work on her own in many other ways. The likelihood is that these projects which are now more than a year old are "becoming" in a sense and will have a life for a few more years. The idea was that, and I will read directly from the contract, "In recent years, the state has narrowed the gap between state and science regarding biodiversity and ecosystem management and the processes of local government and agencies that affect those concerns through training of Resource Conservation District Boards, supporting some specific on-the-ground projects to the Regional Council of Rural Counties, and improving access to digital data through enhancement of the Sierra Nevada Ecosystem Project web site maintained by the state. While each of these efforts has made some progress, none were sufficient to ensure the integration of existing data and analysis into local processes. It became clear that in addition to generalized and institution-building, the situation requires active participation to locate relevant real-world opportunities within the local arena and work with those processes to bring data and analysis that affect decisions on the Sierra." I read that aloud because the notion is this is an alternative to what had existed before between the state and the University and sometimes in cooperation with the state. Now both entities are going into the Sierra and saying, "We have all this information and we'd love to have you use it."

The alternative in this case was identifying initiatives that were already underway, where people were putting energy, passion, and commitment into work that was ongoing in the Sierra. We conducted a survey at the beginning of this project. Kerri Timmer is in the audience and she was whom we hired to do that work. She did a survey of the Sierra using some simple criteria that we came up with, and these are at the bottom of your handout, as measures of strength and sustainability of projects. Kerri discovered that more than 250 projects, mostly in the northern and central Sierra Nevada, met these criteria. These were watershed partnerships and various kinds of community action partnerships that were

sometimes required by legal mandate, the TMDL process that the Clean Water Act requires. Some projects were related to FERC re-authorization, the Federal Energy Regulatory Commission re-authorization that's going on the Sierra and elsewhere. Sometimes these projects were just community groups that were addressing critical local needs related to ecosystem management or land use planning in the Sierra. Kerri created a database of more than 250 projects.

We then worked with key representatives of Sierra organizations and those are also listed on your handout: the Sierra Nevada Alliance, the Sierra Business Council, the Regional Council of Rural Counties, the Sierra Economic Development District, and the Land Trust Alliance. These are really interesting people who came together and who had strong personalities and perspectives on these issues. That was one of the most interesting parts of this project was that we could use these people in this advisory group to select the first six and then three later pilot projects. It was a very interesting and a very positive process. Afterwards, the people who participated in it also felt that it was worthwhile and a very positive process.

We came up with three projects and one of those projects, for various reasons, did not come together. We ended up with two, the Clavey River Ecosystem Project and the Truckee River Watershed Council Project. The notion was to identify local initiatives and not tell them that we have this information and we'd like you to use it, but rather to say that we have some expertise and resources to offer. How would you like to use it? What's going on within your project that can benefit from spatial analytical resources and expertise? The idea was to provide a substantial resource and that was a halftime person who is a University employee who reported to me, but also reported to the project leadership. This is something we had to persuade the University to do. We said that we were going to create a recruitment committee for these community projects and we're going to hire someone who will report jointly to me and to the community group. The University responded by saying that is not the way we do things at the University, and at first we really couldn't do that. We began to look at ways to persuade our colleagues in the University that it was worthwhile to create to what amounts to a real partnership with the community, and we were ultimately able to do that. The project focused on spatial and analytical technical expertise and not providing project facilitation. The focus was also to provide a scientific connection, someone to be a liaison between the local project and University resources and public agencies, and other sources of information as well.

I have a phrase in this handout and it is not just about science, it's about trust. We approached these projects and said, "An advisory group has selected your project as one that we would like to support and we would like to hire somebody to help you." It is fair to say (and the folks on the panel will have a

chance to speak for themselves) that when we brought this idea to these two projects, initially there was a certain puzzlement as to how this happened. It is also fair to say that there was a certain skepticism of how this would work. Many of the people in these projects had previous experience with the state and/or the University coming to them and had very clear ideas on how information would be provided, what agenda would be addressed, and how it would be addressed. The notion was each of these community projects would have the initiative and authority to make these decisions, but with support and resources provided. We were able to persuade the projects that this was a worthy thing to undertake. Our original idea is that we would find somebody already within these projects who could serve in this role. In both instances that was not the case and each project created a recruitment committee within the project. We put out a job announcement, we interviewed people, and we hired two people to work in this capacity.

From our perspective and I hope from theirs as well (which you will hear about in just a moment), it was a worthwhile experiment and one which the state apparently is very pleased with and perhaps is interested in replicating in other parts of the Sierra. We're going to begin with Cecily Majerus of the Clavey River Ecosystem Project and then we'll hear from Kathleen Eagan of the Truckee River Watershed Council.

Cecily: Dennis is right. Most people when they come to you and offer money, you are a little suspect, especially when you don't know why they are doing that. Actually, it was a good thing and I'm going to explain to you why it was.

Many of you may wonder why we are even working with the Clavey River and you may even wonder where the Clavey River is. It is a watershed, a sub-watershed of the Tuolumne River which is the river that starts by Yosemite and perhaps it is best known for providing the drinking water for San Francisco. The Clavey is just one of the major tributaries leading into the Tuolumne. It turns out that the Clavey is a unique subwatershed, and it is also one of the most unique rivers we have in the Sierra which is why it received a lot of attention, including ours. Right now there is no crisis facing this watershed. It has had some crises facing it in the past when a dam was proposed, and that brought the river to a lot of people's attention. Right now, however, there is no immediate threat or change proposed for the watershed. Several of us thought that now would be a good time to try to develop a management plan for the watershed without any hovering external threat.

I would like to tell you about some of the attributes of the Clavey which makes it so unique. It is a watershed of approximately 100,000 acres. It is entirely located within the Stanislaus National Forest so that almost all of it is publicly

owned; just a few parcels are privately owned. Therefore, many large sections of the watershed have not been that disturbed. Mind you, almost everything in the Sierra has been disturbed but not the Clavey; it is relatively undisturbed. It is one of the longest remaining free flowing rivers in the Sierras. It contains all but one of the Sierra Life Zones. Its elevations range from 1,200 - 9,200 ft. and that includes old growth forests, habitat for spotted owls, fishers, martins, and other little critters. It has one of the largest stands of quaking aspens in the Southern Sierras. It is one of the few remaining rivers with its native trout fish assemblage and it has been designated as a Trout Heritage River by the state. There is potential for it to receive Wild and Scenic River designation. It was identified in the SNEP report as a potential Aquatics Diversity Management Area. Its most recent designation is as a Critical Aquatic Refuge in the Sierra framework which just came out. Besides all those things, it is a really pretty river [laughter].

So what is CREP? CREP stands for the Clavey River Ecosystem Project. Our active membership consists of environmentalists, the U.S. Forest Service staff, off-road vehicle users, an irrigation district representative who is also a retired Forest Service worker, and we will soon be joined by folks representing horse trail riders and cattle grazers. Our wider group, which for some reason is a group that doesn't want to attend our monthly meetings, includes county supervisors, rafters, timber harvesters, Native Americans, state agency folks, and other forest districts. So, we have a small working group and we have the wider group who is following what we're doing.

I want to tell you a little bit about the process of CREP and then tell you about some of our accomplishments. Our mission is twofold: the first goal is to conduct a scientific assessment and analysis of the Clavey River Watershed using the best available science. The second is to make recommendations for on-the-ground projects as well as necessary changes in the Stanislaus Forest Management Plan. Ultimately, we will be developing recommendations to change the forest management plan because it is all U.S. Forest Service land, and incorporating those recommendations to change the watershed in the way that we think it should be managed. Our sub goals are to work cooperatively with a wide diversity of groups to develop a shared vision for recommendations, what the potential projects should be, and how we should change the land management plan. We also want to involve key stakeholders in the local community who may not want to get into the "down and dirty" part of it, but to bring in the wider community and involve them in our work as well. Federal rules and regulations must be followed in order to change a land management plan. Our recommendations will be just one part of that and there will be time for public comment by the end of the project. Ultimately, it is the Forest Service's deci-

sion whether or not to follow our recommendations. They could easily reject them, and that is why we are working so hard to have them at the table with us.

What's different about this project is that the Forest Service said when we started, "Oh, that's how we do things. We always do things cooperatively." We then said, "Let's try to do it a little differently. Instead of your facilitating the process and doing it cooperatively, you sit at the table and you'll be equal to everybody else at the table." They've agreed to that and they are acting that way. They are in full agreement with that method. They are equal, but at the end of the day they are really not equal, although they are behaving as if they are equal. This has been an objective for the Forest Service that has been coming from the Service's headquarters in Washington D.C. for several years. Our Forest Service, in this case, has tried to do this a couple of times with the public. They were "beaten up" by the public because they didn't understand what working cooperatively meant. They were beaten up so badly the last time they attempted to work cooperatively, that when we offered to come in and do it, they said, "Fine, we don't want to do it anymore." We were lucky and I believe that they've seen that this process really works. They are seeing some benefits and it has not been easy for them, especially for a federal or state agency to give up authority. It's not easy for anybody to give up authority. Talking about youth, it's not easy for adults to refrain from saying, "Do it this way." However, the Forest Service is doing very well.

Dennis: As someone from the outside who attended these meetings, this is a transformation that has occurred in the last year and a half. There is quite a remarkable difference in the participation from the Forest Service representatives. The forest supervisor, himself, and the deputy supervisors are coming to these meetings. Even the people who are beyond the line representatives are present at these meetings month after month. There has been a real tangible change in the way that they participate. That is really a very satisfying part of this project.

Kathleen: I think our situation is a lot knottier because there is the Forest Service, one entity that preserves the decision making authority, then there is Placer County, Nevada County, and Sierra County as the land use entities. Then there is the U.S. Fish and Wildlife Service as the regulator for reintroduction of Lahontan cutthroat trout. Interestingly enough, they are approaching the reintroduction of the Lahontan cutthroat trout on a cooperative basis. Their definition of cooperative at the beginning of approach was very different than the way they are sounding right now. I don't mean to make fun of them, but I am saying that they are learning as they go and that you can't stand behind the Endangered Species Act and say, "But I have to do this," and then say you are cooper-

ating at the same time. You really need to be listening. The U.S. Fish and Wildlife Service has some "hammer" opportunity. Certainly the Lahontan Regional Water Quality Control Board, the group who will be implementing the total maximum daily loads required by the Clean Water Act for the Truckee River system within a set period of time, 5-10 years in the future, has authority. They are the 800 lb. gorilla and they are very aware of that. They can always pull that gorilla punch. They are looking at doing the TMDL development, as I mentioned earlier, on a collaborative and cooperative basis. How the words come out verses how it actually happens will be an interesting thing to experience. At least they are talking about it in great earnest and the executive officer is talking about being a player at the table rather than talking about being the 800 lb. gorilla. He definitely knows that the fact that this threat is over everyone is probably what will bring people to the table. The thing that's knotty for us is that it is not just the Forest Service and them giving up their authority, which is one way of looking at it or the notion that they are giving up their authority, but there are these land use entities who don't particularly want anybody tinkering with their authority. There is a very delicate situation of developing consensus where everybody at the end of the day comes out saying, "I thought of that and I have more and better information right now and I'm going to change the way I do things because of that." It is their decision but it is not an easy decision; there is no force behind it, there is no teeth to it. It is ultimately the thing that has the most power in the long run.

Comment: Don't forget that in the background, the watersheds are so litigated that people don't want to go through that again. Some other issues will have to be litigated, but there are other watershed issues and people don't want to do that.

Kathleen: There's another thing, and we have talked about this a fair amount, and I don't know how tenuous this is, but in our community we are together in our isolation and Truckee is just a part of that overall watershed. There is a culture of working together to solve problems. A really good example of that is the incorporation effort on its own which had failed many times before and then was successful by a 75% vote. That was because of a very long, slow, collaborative process. Every objection was validated and every concern was researched. Nothing was shoved aside as being inconsequential or not worth the time.

Another example of this occurred when the newly incorporated town had this \$35 million deferred liability on roads - a huge chunk! Nevada County had not kept up the roads and we assumed this \$35 million road liability. The Truckee City Council started out by doing the research and bringing in science, doing the PSI on all the roads. They determined that

this is the condition of all the roads, we've got a \$40 million problem on our hands, and it's going to increase exponentially year after year. We went to the public and we designed a solution. The Council, along with a consultant, approached the public and said, "Here is a solution," and the public responded, "Get out of town! You're crazy! We won't accept that." The solution was a property assessment. Then we formed a community group to deal with solving this road problem. The Council literally gave up its authority. They didn't say so, but they gave up their authority pretty much and that group came up with a solution. It failed by a small margin. They re-grouped, came back again, and succeeded by having a sales-tax increase approved by a very large margin, and we are now fixing the roads. It wasn't accomplished by anything that the decision-makers or the people who had the authority did; it was done by virtue of releasing that authority and giving it to the community. A culture of that exists to some degree, and I think the community expects it. Now whether the major players can give up their authority, whether it is the Forest Service and a variety of counties or towns on land use kinds of things, is an unknown.

Comment: That's the whole key of what you were saying and this is an example of it. If you involve people as players, this will bring them to the table. That is how you get science and community to work together. I have both a community and an ecological background and precisely by pulling everybody in and having them work as equals on projects like this, you get this transference that you need between science and communities and you can accomplish projects like this.

Comment: My question is for Dennis. You had come up with this idea that you could have a halftime position paid for by both the University and by somebody else and the University said, "No, we don't work that way." I'm curious because I am relatively new to Cooperative Extension and I

have some frustrations working within this organization model that is very set in the ways that it thinks about things including creating community partnerships. How were you able to negotiate this?

Dennis: It is possible that we weren't entirely forthcoming [laughter]. We were making this up as we went along. We said we needed not only to provide just resources, but we also needed to create a connection. Additionally we said it has to be at least a halftime position in order to make a substantial enough difference in these projects. It has to occur over a period of at least one year and we have learned that we may be able to extend it further to a second year and perhaps beyond that. The notion was that the initiative in working with this person, whoever it was and we didn't know who it was going to be at that point, would come from the local community project. However, they would be a University employee. The contract for the project was with the University and it had to be a University employee. So we said, "Let's make it a joint reporting relationship," and we presented that to the Office of Business Contracts and they said, "We don't work that way." Officially, the person reported to each of these two people who worked with these groups and then also reported to me, but de facto, the real leadership for the exchange that occurred and how we chose to work with those people really emerged from the projects in each case. What I said to these two individuals was, "We're going to require a performance review process and all the usual things that go along with University positions. However, if the community group is satisfied with your work, that is the best test as to whether you are performing well." Both persons reported to me, but the way it worked was the leadership from how each person was used and the exchange that occurred between each person and that particular project and the University resources was really at the initiative of the project.



Gary Nakamura, Dennis Pendleton, Cecily Majerus, Kathleen Eagan

Conference Wrap-UP

Bill Lacy, Vice Provost, UC Davis
Mike Fortun, Rensselaer Polytechnic Institute
Connie Flanagan, Pennsylvania State University
Al Sokolow, UCCE, Dept. of Human and Community Development, UC Davis

David Campbell: We're now going to begin the wrap-up panel. It has been a long day. Earlier Bill Lacy had to be involved in the decision making of the day and we want to give him a chance to make a few comments that he had planned to make after Mike Fortun's address. We will also give Mike and Connie Flanagan a final chance to offer any last thoughts they might have, and the last word today is going to go to Al Sokolow to whom I have charged to say something wise and to send us on our way to our reception.

Al Sokolow: It's too late in the day for wisdom [laughter].

Bill Lacy: I apologize for not being able to be here this morning. I was involved with some decisions about keeping the University open and whether this conference would continue. I am pleased that we were able to permit the conference to continue because there were a lot of opinions to close the University. California State University, Sacramento is closed, the state government is closed, and the federal government is closed. We thought it was best to continue with our activities for those people who wanted to continue. We are an academic institution where there is exchange of ideas. We should provide a supportive community where people can talk through some of the issues that they're facing rather than send them away. This is what we should be doing as a community. For those who felt they needed to leave, we provided that opportunity as well. I'll say one other thing, and that is tomorrow we are having a gathering of faculty and staff and the chancellor will be speaking about how we will respond. The campus ministry is also having a program. We're organizing a blood drive to work with the New York City blood banks. We're also offering the campus counseling services to anyone who comes to those sessions tomorrow and to anyone else that wishes to seek counseling services. So, we are trying to respond as a community to a community tragedy, because it is going to affect all of us and we have to learn in these kinds of settings how to respond with compassion and understanding.

This topic we're dealing with is critical to some of the issues for building a community. In fact, I would argue that the ways we generate knowledge, disseminate knowledge, and apply knowledge are the core to power and the core to empowering communities. The kinds of issues that you are wres-

ting with today are essential for moving us ahead. What's interesting, and I think it was spelled out very nicely by Mike's book and his paper which I had a chance to read, was the notion about how this science has become the dominant epistemology in our society. It shapes decisions in our democracy without the participation of the citizens in many ways. The question is how do you make that generation of knowledge a partnership among scientists and citizens? Not only how do you make it a partnership, but when you make it a partnership, at what stage along the course of events do you do that? That's what I'm asking - how does the citizen participation become an integral part of that process from the start?

In many ways, science is legislation, but it is legislation without the electorate playing a key role. It is interesting that citizens generally would not tolerate sweeping legislative changes without due process. Ironically, scientists and their sponsors are able to cause wrenching social change through their scientific findings and new technologies which are often developed without public input and usurp fundamental democratic rights. The topic of this discussion today I think is very critical.

Mike talked about "becoming." He talked about civic and what that meant. He somehow paralleled civic with civility and I was curious about that connection because in a lot of ways he talked about that "becoming" being a part of the creative tension and that needs differences and that needs contradictions. Often that means that we are not quite as civil as we should be in creating a civic science that has that tension. He also talks about science, itself. I thought his quote from Evelyn Fox Keller was a marvelous one: "Success in science depends on a conjoining practices of the colluding community and common language speakers." What we often have is a whole set of communities that don't speak a common language. They don't utilize common methods, and yet they are designated as our experts. The physicist, the soil chemist, the ecologist, and the sociologist all approach different phenomena with their own methodologies. There isn't a unity of science in terms of the general assumptions of science and even the philosophers have begun to abandon some of those fundamental assumptions. At the same time, Mike makes the point that you don't abandon science itself

because science has a very important role to play. We're not arguing about abandoning science. We are talking about making citizens a viable and vital part of that process.

Dennis Pendleton did me a favor because he used some of my quotes from a paper I recently wrote entitled "Democratizing Science for Community Empowerment: Citizen Science in an Era of Expert and Private Knowledge." What is interesting is that we have dual trajectories occurring almost simultaneously. The increasingly fragmented expert science on the one hand, and the increasing privatization and commercialization of knowledge on the other. Both forces operate in some ways counter to the very purpose of this conference. So, we have to find mechanisms 1) to recognize what has occurred 2) look at the ways we can help fill some of the holes are imbedded in that expert knowledge and commercial or private knowledge.

Ultimately, the main point, which I really appreciate in Mike's paper and comments, was the notion about science being judging rather than certifying, that it is a central principle, a central method. Science is really a study of probabilities and they are probabilities at one point in time in one place in this universe. As we make those judgments, different communities favor Type One errors and other people in the community favor Type Two errors. What does that mean? Type One is opposed to false positives and the other is opposed to false negatives. Now what does that mean? Well, if you are in a community with the potential of pollutants in your water system, you would rather err in terms of a cautionary principle. You would rather find a false positive, i.e., that there is a danger to health, and rule on that basis even though there really isn't a health danger because whose health is at stake? Your family, your children, etc. On the other hand, a scientist might favor the Type Two error. Why? Because he does not want to proclaim a truth that is not true. That damages his reputation and embarrasses him among his colleagues. Now, they are using the same data and they are arriving at different conclusions because they are favoring a Type One error versus a Type Two error. That's where the judgement comes into play in science. That's where a citizen science may bring a different priority to the outcomes in that judgment. It is increasingly important that we enhance that citizen science and we enhance the youth participation in their community decision making, and link that role of science to community empowerment.

Mike Fortun: I was glad that Kathleen said that she found some reassurance and comfort in my terms. I guess if I have one skill in life it is to get a laugh and engage in that kind of play that makes people think. The concrete, the direct, the policy is not my forte but those other things are. I am glad when they work. When I was officially Executive Director of ISIS, all the staff also called me the Executive Destructor

because any time somebody got comfortable, I would always disrupt it. I always try to be our projects' most severe critic. Going after people's assumptions and putting that black sun back up in the sky was my job and it would drive people crazy. I'm going to do a little bit of that now, but I don't want to do too much of it.

I do want point out that the faith that I have in somehow keeping those contradictions *as* contradictions and not just as difficulties. You can work through the difficulties, but contradictions are just riveting. They're part of the structure that you try to live well within, but you just undergo them and sometimes they overwhelm us.

I was struck by Connie's invocation of John Dewey and the value of the heterogeneity and how numerous and varied must our social nodules be in these projects that we are doing. Regarding Cecily's description of the Clavey River Ecosystem Project - it doesn't become an ecosystem project until there is this social ecosystem that becomes established; that she hooks up with the people in the university who can also establish connections to funders, to other technical advisers who can do translations between the technical and the social. I am always kind of suspicious whenever there is any sort of too easy parallel between the natural and the social. However, I think that John Dewey was right in saying that our values of diversity and having a diverse social ecosystem engage somehow with our diverse fragile ecosystems is right and it is a requirement. It is a necessary requirement.

The other Dewey value that Connie invoked was the one of free play and how you have this space of free play. The contradiction there is one of the things that we've been talking about is the engaged university. That contradiction *is* the university. It is this space of free play where I can do my literary word image play but also try to be engaged in very practical concrete tasks. Those two things are real contradictions, trying to keep both of those in play at the same time.

Another word that I really liked was character and the question of what character is. I do not want to underestimate the difficulty of that topic. The first thing that I thought of was back before we talked fully about genes, we talked about factors and factors controlled character traits. The question of the character of a person was very much tied up with genetic notions. This made me realize that this was the same time period that Connie was talking about, the 1930s and beforehand, and it was also the heyday of the American Eugenics movement, the Fitter Families photos from various state farm exhibits that I've seen in history textbooks. All of a sudden this connection made me feel very uneasy. The question of what we're doing when we evoke character while we're talking about Fitter Families is that we're in this kind of force field that we don't totally quite control and activating things that we're both affirming and should be affirming but we

should also be left to wonder at the same time what we're doing here. Character is one of the great problems of ethics. The original Greek notion of arete - before there was ethics, there was character and that the virtuous person was the person who had some particular kind of character and there was no way of educating that. It somehow had to be activated, but it was already there, it was inherent. It was a very weird but also a very interesting notion of character.

The other word which I am glad Bill Lacy mentioned was judgment because I heard that throughout the presentations today. The question is how do you educate judgment, how do you build judgment, how do you exercise judgment in scientific projects in social projects and in politics? We don't really have very good vocabularies of judgment and jurisprudence, and analyses of how decisions are made, and how judgment is exercised. What is judgment? How does it work? What systems can be put in place to make people better at judgment? Those are some of the words that struck me from the afternoon's presentations.

Connie Flanagan: On the heels of what Bill Lacy said and what Dave Campbell said earlier, I would like to thank them for going on with this meeting. It wasn't a day to be isolated from one another. I was thinking what Gary Nakamura said earlier - that we preach to the choir and I think this is an issue to deal with. There is a certain sense that we need to periodically stop what we're doing every day and pat ourselves on the back and tell ourselves that we're going in the right direction even if we're preaching to people who are already converted. This issue brings up that we need to enlarge the scope of people who are participating, who are engaging in these conversations or we don't make any headway. I thought the examples of the watershed projects were exactly illustrative of moving beyond preaching to the choir. They are wonderful examples of how to reframe power relationships knowing full well that some people still have more power in decision making, but to force people into new positions in order to see one another on an even plane. That was really interesting. Also, you have been working on these watershed project for a very long time. You talked about the 1990s, but I suspect it was even before that. One thing in dealing with youth is that there isn't an easy satisfaction in a lot of civic work. Examples of people still being there is actually quite moving for all of us who feel that these are things that have to be done.

The other thing to which we alluded often today but never discussed further is the issues that you are talking about are very global. Clearly you had maps about where the watersheds are, but it was quite clear that people down river were affected by the decisions that were made up river. We're noticing in most of the schools that we go to these days that the concept of global citizen, and I'm not sure what they mean

by that, is creeping into language and environmental issues. If you listen to members of the younger generation, these are the kinds of things the pull them together. Today's concrete examples and also the programs that the University is going to do tomorrow apply to this concept. I have some specific suggestions of what you should do with these experiments, and that is to get it out there for more people to read about. The only frustration I have about today is that more people should know what's going on. There is some fantastic work being done, and I'm sure it's true across the states. We somehow just don't get it out and let people know about it.

The other thing we really need to deal with at some point is this disjunction between the rhetoric of an engaged university and the training we do with students. We're making some headway at the undergraduate level. There are such things now as freshmen seminars, classes don't have 300 students, and there are really conversations between professors and students. Service learning is an example where there is an attempt to albeit muddling through and to really move beyond book learning in a classroom. We are still doing a very poor job of training graduate students. They're still getting the message that it is within a discipline, and that they will eventually make their reputation. Therefore, don't talk to people across disciplines, and don't try to do work that's interdisciplinary and learn from other people. You can do that after tenure and after you have made your name. It is a ridiculous way of learning and unlearning and we really, really need to struggle with that a lot more.

Finally, I found the two terms "muddling through" and "kludging" really comforting, that these are examples of the ways we're committed to some ideal. We may not have a direct path to get there, but we know part of the trip is that we should experiment on the way. If we muddle through, so what? It is clear that there are better products in the end such as the two watershed projects and we make mistakes and along the way and we learn from those. That's the nature of learning and science and it's the nature being citizens in a democracy.

I want to end with a quote from Deborah Meyer who some of you may know. She was a New York City public school principal that really transformed her school, along with the other teachers, to a really engaged environment. She talked about two virtues in terms of character that if she had to decide which two things young people should learn, those two things would be compassion and skepticism.

Al Sokolow: I'm supposed to follow that [laughter]? As a throwaway line, I would like to build on what Mike said earlier, and that is the question of what judgment is all about. It seems to me that the other side of judgment, the other side of the coin, is leadership. We may visualize this as judgment

combined with action results in leadership. We can play around with that a lot more. Effective leadership seems to be dependent on some sort of wisdom of which judgment is a part. But then, there's also the ability to do what's necessary at the right time, whether you are doing it by yourself or you're doing in response to what people tell you to do. Anyway, that's a throwaway line.

I would like to concentrate on the case studies and what they tell us about the beauty of our democracy. One of the beauties of our democracy is that processes and issues being played out all the time in so many different places under so many different conditions. These are things such as citizens getting together in collective enterprises tackling common problems, sometimes successfully and perhaps more often unsuccessfully given the nature of the beast. Dennis Pendleton said that his project identified 250 watershed projects in the Sierras that met his criteria. I didn't even know there were 250 places in the Sierras [laughter]. That's amazing! Of course, you can only fund a very small number of these projects. That would produce a fantastic database of citizen activity and the interplay of issues and policies as well as collaboration and mobilization. I just love case studies as a vehicle for learning and doing because they get to the richness of local situations. Case studies provide those of us who try to learn and do these types of projects with a great antidote to much of science which is quite obtuse, quite abstract, and quite unapproachable for many people. Of course there are limits to the case study method. Case studies can become so immersed in the idiosyncrasies of those particular details that you cannot pull out what is important and what's relevant. Then you are just reading local history. There is a way to do case studies in a systematic and comparative basis which means you put a lot of case studies together to arrive at some generalizations.

The watershed cases that Cecily and Kathleen presented were quite instructive. In a sense, watershed issues have certain inherent advantages for tackling community problems. First, a watershed is a clearly defined geographic area. It is an area in which clearly there is some kind of ecosystem and there are apparent relationships between different aspects of the landscape. Issues in a watershed are quite clear and they're targetable. They are amenable to data and when you start working on a watershed issue, you've got an agenda that's already set. You're looking for information. You're always asking what's available, what's not available, and what is not available leads to a later iteration of the project. In a sense you've got a built-in line of work with very little uncertainty. In the case of most Sierra watersheds, there is a common enemy, the public lands agency which is typically the U.S. Forest Service. Maybe that is exaggerating a little bit, but certainly it is a favorite whipping boy for both sides of the environmental equation.

What I appreciate about these two cases is the emphasis of the GIS mapping technique as a method for making things factual and making information accessible to the people involved in the watersheds issue and to other citizens in the community. I am quite enamored with GIS, although I refuse to learn GIS mapping techniques. My career isn't going to continue that much longer and I would have to invest, with my level of competence, at least a decade or so to figure out how to do it. It is easier to hire other people to do it. The beauty of GIS mapping is not only that it presents the real world in spatial and visual terms, but it seems to me, and I don't know whether this expressly happened in the Clavey and Truckee projects, is that when you get these maps put together, you put them on a poster board or you put them on a table and it is a means for people to get together and look at that and engage in a buy-in to the database. This is because the mapping exercise gives you references to real situations as compared to a set of data tables or a long report. I'm reminded of the predecessor to this in the old days and even currently, when local governments, planning commissions, city councils, and boards of supervisors engaged in planning exercises when they brought in the maps. All of a sudden people's attention became focused on knowing the reference points in those maps. "Yeah I know where this area is and certainly this make sense and I didn't realize it was that close or that the trend is moving in that direction." I think that GIS mapping focuses people's attention to a level of factual information which cannot be obtained in any other way and which results in a buy-in and perhaps leads to some sort of foundation for achieving at least some initial consensus on what the problem is all about from a data-driven factual basis. We have just barely scratched the surface in the use of GIS, not only as a research tool, but as educational deliberative tool especially if it could be used in an interactive fashion so that you could use GIS mapping to lay out alternative scenarios for different policy options. Those two watershed cases, to the extent they brought us closer to an appreciation of this kind of technique, are a great service. Incidentally, I'd like to label these two cases as examples of science in the *service* of civic engagement rather than science just *becoming* civic engagement. Maybe it is a wrong metaphor, but it is appealing metaphor for me.

The other angle that the two cases bring up is the effective use of the University resources on local issues. In that sense, these two communities and the two watershed areas have benefited extraordinarily because most communities simply are not going to get that type of service from the University. There isn't that much available in terms of University staff, resources, and expertise that would be able to serve the great majority of communities with that level of intensive scientific and informational assistance. It is simply the case, and I have to be blunt about this even though I work for the part of the University that is most involved in assisting communi-

ties, that the University essentially is not a public service entity. It is a research institution and a teaching institution. The only way we can justify helping communities is by saying that's an extension of our information and research role. If we did it without the connection to that research role, people would say why are you doing this? There are other institutions in society that can serve communities effectively. There are private consultants and regional planning organizations, state agencies, and so forth. The University doesn't have a particular mission in this area that is divorced from its other roles of education and research. I think we should continue to do this, but only as it relates to adding the information to our knowledge base and using our work with communities to build upon both that information base and test out that information. I would guess without putting the words into Dennis' mouth that the reason why we had this experiment with these two communities because it was a way to learn something as well as assisting the communities about how we might do this activity in the future. I may be wrong and you can slap me down later [laughter]. This suggests to me that most communities are not going to be able to tap the resources of the University to that same extent. The opportunity here concerns interesting projects that researchers and educators might want to tackle in individual communities. As much as wanting to help the community, it is the case of what do you learn in that process and how do you add to the knowledge base. The job here, and I hate to say it, is in the long term, building the knowledge base in a way that we know new things that then can be applied in other ways to other communities in and around the state. Incidentally, Kathleen asked, "Why can't we get those Cooperative Extension specialists in our community to sit down with a cup of coffee and talk with people?" You've got to become the county seat [laughter]. Then you will get a Cooperative Extension office in your backyard.

Comment: The words have really been significant today, talking about science and civic and judgment and leadership which I really enjoyed. I have to come back to what Gary Nakamura said about being on the edge. In terms of what happened today, we're clearly on the edge in our society and the role that the University has to play. I really have to disagree with Al about our role in the University. We talk about the University being a research university, but the question is are we a teaching University and what we

mean by a teaching University is talking about other forms of teaching we can do, not only through extension, youth, and service organizations. We have a very significant role to play in this crisis that we're right on the edge of, and if we don't step up, I would be very pessimistic about what would happen in the coming years.

Comment: The question is are we a University or a land grant university, and you mentioned that a land grant university is very different which is why we have a Cooperative Extension office in every county.

Comment: It's not Cooperative Extension, but it is what we do on this campus to reach out to other venues as well. There is a huge contradiction facing us right now.

Bill Lacy: It's how we educate our citizens after we've educated them the first time around. Somehow we seem to forget that once they've graduated at the age of 22 or 23, they're going to obtain more of their formal education after they leave our institution than they did while they were on campus. Dennis Pendleton has an organization that educated 80,000 of our citizens last year just in this part of the state. That last comment was quite correct.

Al: I could say in defense that I was deliberately being provocative, [laughter] but I was reflecting probably, even on this land grant campus, the general sentiment of the majority of faculty. Let me offer a quick revision [laughter]. It's not that we don't have the same obligation that we've always had as a land grant university. The question is how do we effectively carry out that obligation with limited resources? I don't see us putting people on a halftime basis into very many communities for the long term. We need to do some of that to learn. There are some other ways to disseminate the fruits of the University to the community, other than intensive field activity, although intensive field activity is important in places where lessons can be learned and where there is an effective relationship with the community. University Extension is one role, Cooperative Extension is another role, distance learning is another technique. It's a matter of how do we do that effectively with reaching as many people as possible.



Al Sokolow, Connie Flanagan, Bill Lacy, Mike Fortun



CALIFORNIA
COMMUNITIES
PROGRAM
 Citizenship
 Governance
 Prosperity

UNIVERSITY OF CALIFORNIA



LIST OF REGISTERED PARTICIPANTS

Gloria Barrett
UCCE - Calaveras County
2524 Fern Leaf Lane
Martinez, CA 94553
(209) 754-6476
gbarrett2@co.calaveras.ca.us

Marianne Bird
UCCE - Sacramento County
4145 Branch Center Road
Sacramento, CA 95827-3898
(916) 875-6811
mbird@ucdavis.edu

Marc Braverman
Dept. of Human and Community Development
4-H Center for Youth Development
University of California
Davis, CA 95616
(530) 752-7003
mtbraverman@ucdavis.edu

Ann Brosnahan
UCCE - San Joaquin County
420 South Wilson Way
Stockton, CA 95205
(209) 468-2094
babrosnahan@ucdavis.edu

David Campbell
Dept. of Human and Community Development
UCCE - UC Davis
University of California
Davis, CA 95616
(530) 754-4328
dave.c.campbell@ucdavis.edu

Ramona Carlos
Dept. of Human and Community Development
4-H Center for Youth Development
University of California
Davis, CA 95616
(530) 754-8435
rmcarlos@ucdavis.edu

Rebecca Carver
UCCE - Yolo County
70 Cottonwood St.
Woodland, CA 95695
(530) 666-8703
rlcarver@ucdavis.edu

Joe Choperena
USDA Rural Development
430 G St.
Davis, CA 95616
(530) 792-5800
joe.choperena@ca.usda.gov

Chuck Clendenin
USDA Rural Development
430 G St.
Davis, CA 95616
(530) 792-5800
chuck.clendenin@ca.usda.gov

E. Kim Coonz
Center For Cooperatives
University of California
Davis, CA 95616
(530) 752-1366
ekcoontz@ucdavis.edu

Steve Dasher
UCCE - San Diego County
5555 Overland Ave. Bldg. 4
San Diego, CA 92123
(858) 694-8874
hsdasher@ucdavis.edu

Sheila Duffy
UCCE - Alameda County
1131 Harbor Bay Pkwy. Ste. 131
Alameda, CA 94502
abduffy@ucdavis.edu

Kathleen Eagan
Truckee River Watershed Council
P.O. Box 8428
Truckee, CA 96162
eagan@jps.net

Glenda Edwards
Clavey River Ecosystem Project
gedwards@inreach.com

Richard P. Enfield
UCCE - San Luis Obispo
2156 Sierra Way Suite C
San Luis Obispo, CA 93401
(805) 781-5943
rpenfield@ucdavis.edu

Patricia English
4-H Program
University of California
Davis, CA 95616
(530) 754-8520
pnenglish@ucdavis.edu

Lucrecia Farfan-Ramirez
UCCE - Alameda County
1131 Harbor Bay Pkwy Suite 131
Alameda, CA 94544
(510) 639-1270
cdalameda@ucdavis.edu

Kenneth R. Farrell
Center for Cooperatives
University of California
Davis, CA 95616
(530) 752-2408
kenneth.farrell@ucop.edu

Gail Feenstra
Sustainable Ag Research & Education Program
University of California
Davis, CA 95616
(530) 752-2408
gwfeenstra@ucdavis.edu

Elaine Fenton
4-H Humboldt County
5630 Broadway
Eureka, CA 955033
(707) 445-7351
mefenton@ucdavis.edu

Connie Flanagan
Pennsylvania State University
336 Ag Admin Bldg.
University Park, PA 16802-2601
(814) 863-7425
cflanagan@psu.edu

Mike Fortun
Rensselaer Polytechnic Institute
Science & Technology Studies Sage Bldg. 5th Floor
Troy, NY 12180
(518) 276-6598
fortun@rpi.edu

Julie Frazell
4-H Program
883 Lakeport Blvd.
Lakeport, CA 95453
(707) 263-6838
jfrazell@ucdavis.edu

Mark W. Freeman
UCCE - Fresno County
1720 South Maple Ave.
Fresno, CA 93702
(559) 456-7285
mwfreeman@ucdavis.edu

Sao Fujimoto
Central Valley Partnership
870 Linden Lane
Davis, CA 95616
(530) 752-3625
ifujimoto@ucdavis.edu

Deborah Giraud
UCCE - Humboldt County
5630 S. Broadway
Eureka, CA 95503
(707) 445-7351
ddgiraud@ucdavis.edu

Peggy Gregory
UCCE - 4-H
680 North Campus Dr. Suite A
Hanford, CA 93230
(559) 582-3211 Ext. 2730
pfgregory@ucdavis.edu

James I. Grieshop
Dept. of Human and Community Development
UCCE - UC Davis
University of California
Davis, CA 95616
(530) 752-3008
jgrieshop@ucdavis.edu

Joyce Gutsein
Public Services Research Program
University of California
Davis, CA 95616
(530) 752-7823
jjgutstein@ucdavis.edu

Sky Harrison
Environmental Science and Policy
University of California
Davis, CA 95616
(530) 752-0532
sky@ice.ucdavis.edu

Lois Hathway
El Dorado County Public Health Dept.
941 Spring St. #4
Placerville, CA 95667
(530) 621-6223
lhathway@co.el-dorado.ca.us

Frank Hirtz
Dept. of Human and Community Development
University of California
Davis, CA 95616
(530) 752-8928
fwhirtz@ucdavis.edu

Shirley Humphrey
North Coast/Mountain Region DANR
University of California
Davis, CA 95616
(530) 754-8493
sahumphrey@ucdavis.edu

Nicki King
DANR North Region
University of California
Davis, CA 95616
(530) 752-3621
njking@ucdavis.edu

Marcia Kreith
Agricultural Issues Center
University of California
Davis, CA 95616
(530) 752-8670
mtkreith@ucdavis.edu

Jonathan Kusel
Forest Community Research
P.O. Box 11
Taylorsville, CA 95983
(530) 284-1022
Kusel@FCResearch.org

Bill Lacy
University Outreach & International Programs
University of California
Davis, CA 95616
(530) 752-6376
wblacy@ucdavis.edu

Charles Lacy
328 Balboa Ave.
Davis, CA 95616
(530) 7564372
calacy@ucdavis.edu

Marg Lee
Internship and Career Center
University of California
Davis, CA 95616
(530) 752-2671
molee@ucdavis

Cathy Lemp
C. S. Lemp Consulting
P. O. Box 445
Columbia, CA 95310
(209) 536-0282
cathyl@mlode.com

Darlene Liesch
UCCE
1031 South Mt. Vernon Ave.
Bakersfield, CA 93307
(661) 868-6212
dgliesch@ucdavis.edu

Larry Lloyd
Great Valley Center
2432 State Hwy. 49
Placerville, CA 95667
(530) 621-4946
larry@greatvalley.org

Carole MacNeil
4 – H Youth Development Program
DANR Bldg. Hopkins Road
University of California
Davis, CA 95616
(530) 754-8518
camacneil@ucdavis.edu

Ella R. Madsen
Dept. of Human and Community Development
4-H Center for Youth Development
University of California
Davis, CA 95616
(530) 754-8755
ermadsen@ucdavis

Cecily Majerus
Clavey River Ecosystem Project
25 Eucalyptus Road
Berkeley, CA 94705
CnDMajerus@aol.com

Michael Mann
4-H Program
1045 Arlington Drive
Costa Mesa, CA 92626
(714) 708-1612
mpmann@ucdavis.edu

Anna Martin
UCCE - San Joaquin County
420 South Wilson Way
Stockton, CA 95205
(209) 468-9497
acmartin@ucdavis.edu

Adina Merelender
UCCE
4070 University Road
Hopland, CA 95449
(707) 744-1270
adina@nature.berkeley.edu

Fe Moncloa
UCCE - Santa Clara County
700 Empey Way
San Jose, CA 95128
(408) 299-2635 Ext.100
fxmoncloa@ucdavis.edu

Mario S. Moratorio
UCCE - Yolo County
70 Cottonwood St.
Woodland, CA 95695
(530) 666-8143
msmoratorio@ucdavis.edu

Shelley Murdock
UCCE
75 Santa Barbara Rd. 2nd Floor
Pleasant Hill, CA 94523
(925) 646-6127 Ext. 925
swmurdock@ucdavis.edu

Gary Nakamura
UCCE
1851 Hartnell Ave.
Redding, CA 96002-2217
(530) 224-4903
gmnakamura@ucdavis.edu

Jock O'Connell
1500 15th St.
Sacramento, CA 95814
(916) 341-0309
jockoconnell@email.com

Anna Olivares
UCCE - San Joaquin County
420 S. Wilson Way
Stockton, CA 95205
(209) 468-2090
amolivares@ucdavis.edu

Phil Osterli
UCCE - Stanislaus
3800 Cornucopia Way
Modesto, CA 95358
(209) 525-6800
cdstanislaus@ucdavis.edu

Dennis Pendleton
University Extension
1333 Research Park Drive
Davis, CA 95616
(530) 757-8663
dfpendleton@ucdavis.edu

Richard Ponzio
Dept. of Human and Community Development
4-H Center for Youth Development
University of California
Davis, CA 95616
(530) 752-8824
rponzio@ucdavis.edu

Carol Powell
UCCE - Santa Barbara
624 West Foster Road Suite A
Santa Maria, CA 93455
(805) 934-6240
cgpowell@ucdavis.edu

Madalene M. Ransom
USDA Natural Resources Conservation Service
430 G. St.
Davis, CA 95616
(530) 792-5670
madalene.ransom@ca.usda.gov

Claudia Reed
DANR Governmental & External Relations
1130 K Street, Suite 340
Sacramento, CA 95814-3927
(916) 322-4139
claudia.reid@ucop.edu

Andrew Reid
Sacramento Housing and Redevelopment Agency
6301 I St. 2nd Floor
Sacramento, CA 95814
(916) 440-1358
areid@shra.org

Ellie Rilla
UCCE - Marin County
1682 Novato Blvd. Suite 150B
Novato, CA 94947
(415) 499-4204
erilla@ucdavis.edu

Stephen Russell
Dept. of Human and Community Development
4-H Center for Youth Development
University of California
Davis, CA 95616
(530) 752-7069
strussell@ucdavis.edu

Lourminia (Mimi) C. Sen
Dept. of Food and Agriculture
1220 N St.
Sacramento, CA 95814
(916) 654-0433
msen@cdfa.ca.gov

Shulamit Shoup
Dept. of Human and Community Development
University of California
Davis, CA 95616
(530) 753-1204
shulas@juno.com

Martin H. Smith
UC Davis Veterinary Medicine Extension
University of California
Davis, CA 95616
(530) 752-6894
mhsmith@ucdavis.edu

David Snell
UCCE - Fresno
1720 S. Maple Ave.
Fresno, CA 93702
(559) 456-7221
desnell@ucdavis.edu

Al Sokolow
Dept. of Human and Community Development
UCCE - UC Davis
University of California
Davis, CA 95616
(530) 752-0979
ajsokolow@ucdavis.edu

Carla M. Sousa
UCCE - Tulare County
4437 S. Laspina St. Ste. B
Tulare, CA 93274
(559) 685-3309 Ext. 221
cmsousa@ucdavis.edu

Karen Spatz
USDA Rural Development
430 G St.
Davis, CA 95616
(530) 792-5800
karen.spatz@ca.usda.gov

Sally M. Stanley
Dept. of Human and Community Development
4-H Center for Youth Development
University of California
Davis, CA 95616
(530) 754-8434
smstanley@ucdavis.edu

Joe Stasulat
Internship and Career Center
3rd Floor South Hall
University of California
Davis, CA 95616
(530) 752-2682
jjstasulat@ucdavis.edu

Jim Sullins
UCCE - Tulare County
4437 S. Laspina St. Ste. B
Tulare, CA 93274
(559) 6853309
jlsullins@ucdavis.edu

Erica Szlosek
USDA Farm Service Agency
430 G St.
Davis, CA 95616
(530) 792-5520
erica.szlosek@ca.usda.gov

Nancy Tibbitts
Internship and Career Center
3rd Floor South Hall
University of California
Davis, CA 95616
(530) 752-2868
nrtibbitts@ucdavis

Kerri Timmer
Sierra Connections
13925 Meadow View Dr.
Grass Valley, CA 95945
(530) 273-7329
kvtimmer@oro.net
Lisa Wallace
Truckee River Watershed Council
P.O. Box 8568
Truckee, CA 96162
(530) 550-8760
lwallace@truckeeriverwc.org

Ken Willmarth
UCCE - Stanislaus County
3800 Cornucopia Way Suite A
Modesto, CA 95358
(209) 525-6800
kmwillmarth@ucdavis.edu

Jeff Woled
Dept. of Human and Community Development
UCCE - UC Davis
University of California
Davis, CA 95616
(530) 752-3007
jlwoled@ucdavis.edu

Lois Wolk
Yolo County Board of Supervisors
625 Court Street
Woodland, CA 95695
lgwolk@dcn.davis.ca.us

Joan Wright
Dept. of Human and Community Development
UCCE - UC Davis
University of California
Davis, CA 95616
(530) 752-3955
jxwright@ucdavis.edu

Larry Yee
UCCE - Ventura County
669 County Square Drive
Ventura, CA 93003-5401
(805) 645-1460
lkyee@ucdavis.edu