Partnerships/Collaboration with ATSDR

Participants: Clem Furlong (UW), Kathleen Gray (NC), Olivia Harris (ATSDR), Anna Hoover (KY), Sandra Uesugi (OR), Brad U. (MI), Maud Welsh (LSU)

Ways to learn about ATSDR's research needs:

- Review toxicological profiles, especially the priority data needs section of these documents.
- Review the ATSDR web site to identify research foci.
- Also use the web site to identify the ATSDR Regional Representative in your EPA region and find out whether any states in your region have cooperative agreements with ATSDR. Get in touch with those contacts.
- Contact Olivia Harris or others in the Division of Regional Operations (Tina Forrester, Clem Welch) to discuss ideas or identify appropriate contacts.
- Although there are no documents outlining ATSDR's strategic research needs, Olivia noted that ATSDR is most interested in exposure issues (e.g., sources of emerging contaminants).
- Olivia cited the National Exposure Report (NCEH) as another source of information.

ATSDR also needs to know about SRP, so make sure your work is accurately and fully represented on the SRP site, especially through search functions.

Also find ways to highlight the sites you're working at, as ATSDR approaches some of its work through the lens of specific sites. If there's a way to include this information on the SRP site, that would be helpful to ATSDR.

Ways to learn more about ATSDR's risk communication efforts, especially around specific sites and how to leverage efforts:

- Division of Health Assessment and Consultation is the best resource for information about risk communication in specific geographic areas.
- Resource people include: Jana Telfer, Brian Tenza, Hilda S.

How can we promote more face-to-face interaction with ATSDR staff?

- Science seminars have been an effective way to do this. Beth Anderson and Olivia Harris work together to identify relevant topics and speakers. Communicate with Beth if you have an idea and, she will vet it with Olivia. Note that not all of SRP work is directly relevant to ATSDR, and the agency is only interested in bringing speakers with direct relevance.
- Come to Atlanta for a focused meeting (on a topic like Fate and Transport).

- Also look for ways to piggyback on existing meetings that SRP/ATSDR staff may travel to (e.g., SOT, SETAC, APHA). Consider adding a half-day meeting at the beginning or end of one of these meetings to take advantage of travel that is already happening.
- May need assistance/travel funds (for SRPs and ATSDR) to promote collaboration.
- Interest in identifying joint funding mechanisms for collaboration.

Beth Anderson noted that, historically, supplemental funds have been available for the translation of research (e.g., moving the research from projects into application). These funds may be available to the grantee through administrative supplemental requests.

Next Steps

- Outline focus of possible Atlanta meeting and key players.
- Write a conference support grant.
- Anna Hoover, Maud Welsh, Olivia Harris and Kathleen Gray agreed to work on this issue.

Partnerships/Collaboration with EPA: Group 1

What research translation methods have worked / not worked?

- Plant a grad student (e.g., Mark Maddaloni in R2)
  Mike Gill – Remedial Project Managers (RPMs) in the regional EPA offices are under strict deadlines for completing various steps in the site cleanup process. This leads to an understandably risk-averse tendency when selecting technologies or processes for site characterization, monitoring and cleanup. They would prefer to use a technology that has a proven track record and can be pulled "off the shelf" as opposed to an innovative one that has the potential to be better, but also may fail upon implementation. Of course, it should be recognized that some of these "off-the-shelf" technologies (e.g., pump and treat) are not exactly stellar performers. But given their workload and scheduling pressures, being innovative does not come easy very often for RPMs. Hence, the more field testing that an innovative technology can undergo, the more it will be accepted by project managers
- RPMs want science that is proven / tested in the field
- Contact EPA STLs
  Mike Gill – Each EPA region has an ORD contact in their respective Superfund offices that can act as an interface between the SRP researchers and the RPMs to get the word out about the research results from the SRP. Contact information for the STLs can be found here: http://www.epa.gov/osp/hstl/hstlstff.htm
- Don't concentrate on specific sites
  Mike Gill – Because the universe of hazardous waste sites is fairly large, they tend to fall into "groups" (e.g., VOC sites, fuels sites, frac rock sites, acid mine drainage sites, etc.). Therefore, a researcher's individual project can benefit a number of similar sites. Each hazardous waste site has its site specific characteristics. While there's a need to deal with many sites on an individual basis,

researchers should not pick a specific site and try to solve its individual problems. Be more "global" when scoping a research project and try to avoid getting bogged down with a specific site's problems. That way, your work can benefit a larger group of sites.

- Timing of sites – focus on feasibility study stage
  Mike Gill – I believe this is an important part of the process for SRP to focus on because the FS stage is when the RPMs develop the list of potential remedial technology alternatives for consideration.
- 5 Year Reviews may be a time EPA needs scientific input
  Mike Gill – One would hope that after following the exhaustive Superfund process, the selected remedy is effective. But to ensure that is true, there is a required process called a "Five Year Review". Every 5 years following the start of on-site construction (as long as waste remains on-site), the EPA must provide a review and report addressing the operational effectiveness of the site's selected remedy. If a remedy is failing, then the RPM may search for other remedial alternatives and may investigate innovative technologies to replace the original ineffective remedy.
- Need online tool to identify Superfund sites status
  Mike Gill – Here are two online databases that should assist folks interested in knowing the status of sites. First, the RODs database is searchable and includes copies of all Records of Decision for NPL sites (when they exist). Here is a link to that page: http://www.epa.gov/superfund/sites/rods/ The other useful database is one from EPA Region 9 that contains information on the status of each site in our region. Here is the website: http://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/vwsoalphabetic?openview Other EPA regions have similar databases accessible from their Superfund websites. For access, start with: http://www.epa.gov/superfund/sites/index.htm . This will get you to each regional office's Superfund page. Once there, you can dig down to individual site information.
- Science needs – Feasibility Study, 5 Yr. Reviews, contaminant media
- Input to IRIS update FR (coordinated for all SRP programs)
- Pilot identification of SRP technologies at Superfund sites
  Mike Gill – In the past, EPA had a cost-sharing program called the Superfund Innovative Technology Evaluation (SITE) Program, but it discontinued in 2006 due to budget cuts. Its purpose was to link up new technology vendors with access to Superfund sites so they could conduct technology pilot testing. While the official program is gone, there are still opportunities to use the program as a model for individual pilot tests. By contacting either the site's RPM or going through the STL to access a site of interest, there is a possibility that SRP researchers can pilot new technologies on real sites.

What resources would facilitate better communications?

- Database with contacts (SRP, EPA, ATSDR) of research needs and SRP science research interests
  Mike Gill – As discussed during his talk, Mike suggests contacting the STLs to find out what the big picture research needs are for each region

WE WILL CONTINUE ON!

Partnerships/Collaboration with EPA: Group 2

Strategic Plan

1. Address issues of high relevance
2. Maximize the impact of program investments
3. Foster innovation

Discussion Questions

1. *Does the goal of being problem based, solution oriented change the nature of research?*
   a. It may increase the emphasize on documenting the potential application
   b. In general, strategic plans should set the general challenge of research objectives. Once the general challenge has been identified, researchers are better equipped to identify potential barriers to the success of such a challenge, which can help guide the development of research priorities
   c. Just because the goal may be problem based, does not imply that the solution has to been immediate or even within the overall time frame of a particular P42 grant. To use an athletic analogy, while we must realize that research should help move the football down the field, each individual project may not result in the actual result of a "touchdown", nonetheless, the research should always have the "goal line", or at a minimum, the "first down" marker in view.

2. *Is there a perceived increase in emphasis on stakeholders and will that change the way centers view their goals?*
   a. The consensus of the group was that this will probably change the way centers view their goals, or at least expand the way they look at the goals
   b. It is anticipated that Research Translation and Community Engagement activities will become even more important and critical to the overall success of each center.

3. *How will centers approach inter-center collaborations?*
   a. Several possible strategies were discussed for achieving this objective. Some of those discussed included: the development of RTC clusters, PI visits from other Centers, and data sharing.

4. *In what manner might the role of Research Translation and Community Engagement cores change within a center?*
   a. It is anticipated that RT and CE will become increasingly important in maintaining bi-directional interactions between the center researchers and their associated stakeholders.

Mapping and Spatial Analysis

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Notes

Overall summary of session:

- Mapping was identified as a tool for analysis in conducting research, as a way to enhance planning activities, and a form of communication (for outreach, education and engagement).
- More experience among the group with mapping environmental and exposure oriented data layers (not as much experience mapping health outcome data)
- Lots of enthusiasm for integrating data types and sources using maps.

Examples: Boston University

Research:

- Researchers use GIS to conduct spatial epidemiology of Breast, Lung, and Colorectal Cancer on Cape Cod, MA. Example was shown of the spatial and temporal analysis of breast cancer on the upper Cape, where exposure modeling suggests contaminated groundwater plumes may have affected drinking water supply wells.
- Research Translation:
- An innovative spatial analysis method developed by BU investigators offers a new approach to investigating disease clusters. The R computer code used to perform this analysis, and a synthetic data set for testing this method, have been made available for download on the BU SRP website: http://www.busbrp.org/projects/project2.html#gam more research on mapping and spatial analysis described here: http://cireeh.org/pmwiki.php/Main/SpatialEpidemiology
- Community Education:

- Map of Massachusetts NPL sites and other community-identified sources of environmental contamination created by RTC using GIS and Google Earth to plot publicly available data. Hard copies of the map with additional information about each type of site were distributed by community partner, Toxics Action Center. The map and an associated report were released to the media, published electronically on the TAC website, and disseminated in electronic and hard copy to local government officials, libraries, and news outlets throughout Massachusetts.

Community Engagement:

- CEC has designed and led seven trainings in mapping with community groups in New England, all focused on the creation of maps using Google Maps and Google Earth for use in environmental health advocacy campaigns and general education. This resulted in an NIEHS Participatory Environmental Public Health grant titled, User-Generated Content for Environmental Health Mapping. The purpose of the grant is to monitor and map ambient particulate matter concentrations in Boston and the neighboring city of Chelsea. Google Earth is being used to display measured levels of particulate matter as well as geocoded photographs and videos to document land use issues and sources of PM. Chelsea has also created a virtual environmental justice tour using Google Earth.

Examples: University of California San Diego

- Using GIS and a software created by the Department of Energy that enables users to create a digital sampling plan (e.g., soil and water samples) and conduct hypothesis-driven statistical analyses of data.
- Using digital and raised relief maps.
- Lesson learned with Katrina Portal was the importance of having an adequate connection to the user community. The portal was the "golden chariot" of websites, but no one wanted to ride in it.
- Take advantage of open source tools (e.g., Google); they are free and easily accessible, and they also have tutorials for users. This is part of a larger sustainability framework. Ideally maps can be updated and sustained by all.

Examples: University of Washington

- …to conduct a needs assessment with Washington Toxics Coalition.

Examples: Northeastern University

- Track water samples in Puerto Rico which will be used in spatial analyses (Northeastern)
- Mapping well water contaminants- geostatistical mapping methods are freely available

Examples: Brown University

- ..as a source of historic data (old maps that are not yet digitized) can be used to estimate or better understand past exposures (Brown), helpful in legal suits
- Mashing up different types of data to display on one map with various layers
- School siting on contaminated land (Brown)
- Food deserts, corner stores, healthy food options and the food system in Providence (e.g., truck routes for bringing produce into the city)

Examples: University of North Carolina

- Policy making decisions (BMEGUI and SATSCAN) at UNC

Examples: Harvard University

- Risk assessment (Harvard) – challenge to incorporate maps into biomedical studies, bias is on exposure/ecological assessments

Examples: University of Iowa

- Google maps of PCBs along the canal (Iowa). Using the same tool for all audiences (e.g., community members, legislators, academics). Is this a good thing?
- As a tool for translating research findings to the general public in a manner that is culturally sensitive (i.e., with tribes)

Suggestions for SRP to support mapping/Next steps:

- Establish an infrastructure that supports all SRP mapping elements.
  - A website with mapping programs and examples (i.e., virtual sharing of maps)
  - Critiques of analytic software and methods appropriate for spatial analyses
  - Make a site of mapping tools and spatial data that could be helpful for SRP (e.g., EPA, USGS, TRI, real estate databases/city-town GIS sites, National Resources Conservation Service, areal mapping catalog from 1930s on, CDC mapping network,)
  - Develop an inventory of needs by SRPs
- Provide software developers incentives for helping us with mapping apps (e.g., with cell phones)
- Organize a conference session on mapping, show live demo of GIS.
- Organize a conference session on mapping as a form of science communication
- Write article "from research to engagement, the use of mapping among SRPs."
- Need to include mention of the challenges re. accuracy of spatial analysis when maps are not intended for research purposes, and ethical issues that arise with visual representation of data (e.g., protection of confidentiality, stigmatization of areas, and temptation to draw conclusions from associations that may have weak scientific basis).
- Host a series of webinars that highlight best practices/uses of mapping by SRPs- or each webinar focus on a facet of expertise, technology, experiences…

Misc:

Google Earth has tremendous potential for new ways to display data and share maps virtually.
We need to be on top of the tools

Partnerships/Collaboration with States

The Three C's

A. Contacts

- Web pages/ follow-up (emails and calls)
- Alumni
- Informal Contacts
- "Personal"
- Higher level people preferred for longevity
- Someone in center who's a former state employee
- CDC Mapping networking, PEPH / Networking
- List Serve
- Contacts from Previous Projects

B. The Carrot

- Seminars/ Workshops
- Continuing Education (CEH's, PEHP, etc.)
- Credibility at Community Meetings
- Travel Funds
- Research / Additional Resources for Studies
- Student Interns

C. Collaboration

- Modification of research plan to address agency concerns
- Expert review of agency programs/ publications
- Credible experts
- Opportunities for networking among RTCA
- Follow-up – evaluation tools for seminars/workshops, and collaboration

Informing Policy and Regulations: Group 1

Examples – how decision makers "use" science
Use workshop setting w/ NCSL to get "science" to legislators and discuss
Evaluate through comments to others
AAAS has center public engagement
"Regulators" as audience
Bar associations – environmental health
Environmental journalists (influence policymakers)

Devise programs for students to serve in legislative offices
- Maybe arm of training program
- Maybe one day a week
- Preparation

What about org like SOT?
How to get access? / Big picture and short term
Need to deliver knowledge – new paradigm of coproduction
Infrastructure "Our Common Journey"
Knowledge/ action collaboratives
Put officials on mgmt. bd.
Help people – liaison offices?
Make friends
Work at state level ("Science and Democracy" Jasanoff)
Legislators respond to constituents
All politics is local
Can mobilize people to lobby for bill
Work with people writing bills
Work with coalitions (add science) being mobilized
Agencies
Health officers – BDs of Health
Training on what authority is
Advocacy v. resource **
How to explain in ways that people can "hear"
Short
People construct meaning out of more than just rational and scientific information

Next steps?
- Webinar
- What to read
- Best practices

Informing Policy and Regulations: Group 2

Participants: EPA (Name?), Anna Harding, Craig Just, Mary Gant, Denise Moreno, Katie Fevert, Tom Seager, Laurie Rardin, Kelly Pennell, Larry Reed

Examples of how decision makers can better use science:
- The source of the science is important. The individual should be scientifically knowledgeable, but also be able to explain scientific concepts in a manner that is accessible to non-scientists. Not all scientists are good communicators.

- The reason for policy exemptions is not always well understood by the public and is a topic that deserves attention. For instance, policy exemptions often exist for chemicals that have substantial health risks, but often people assume if the chemical is exempt, it is safe.
- Connecting science to real-world issues that the public can identify with is useful. Public perception and passion for specific topics can be powerful in swaying policy decisions. However, we should be mindful that some vulnerable communities have a difficult time gaining public support for important issues.
- When economic issues are compared to science on health effects, money often has more weight. This is a reality and a challenge.
- Using old stories that the public is already familiar with to convey new messages can be effective.

Differences in audience (Congress vs. Governmental Agencies/Regulators)

- Use short and engaging written materials made specifically for policy makers to explain key scientific findings. These can often be prepared with support from a university governmental liaison office. Focus on staffers because they often determine what items receive attention. Again, university liaisons may be useful. They often have information for relevant contacts in your geographic region.
- Agency staff is often interested in more detailed science, but the topic must be relevant. They are interested in answers "now" and often have substantially different timelines, as compared to research. However, if the topic is closely related to their area of work, there is potential for them to become actively engaged (or at least interested) in a research project.
- Which audience should be targeted? Both, but SRPs should focus on their strengths and existing connections. No "one size fits all" for this type of work.
- Timing is important. Consistent interaction and communication (quarterly at a minimum). Do not expect your contacts to remember what you are doing just because you briefed them once at the beginning of the project.
- Network and develop relationships with many individuals.

Next Steps:

- Give feedback about outcomes from this discussion. Some people felt that they might go back and do something different or new based on the discussion that took place. It would be nice to hear what actions were (or will be) taken.
- Summary of SRPs by each grantee. What is the main focus? What makes them unique? What's their take away message? These could be shared within the SRP community, or also used to communication with EPA, ATSDR, etc.
- Capture notes of this session and share with participants.

Environmental Justice

1. *EJ Research Agenda*
   General agreement among participants concerning several fundamental challenges inherent in EJ research including:
   a. Cultural differences between community groups and university researchers
   b. Difficulties in communication
   c. The importance of and difficulty in enhancing the social capital of partner groups
   d. The need to listen better to community groups in order to gain trust and facilitate more effective communication
   e. Cumulative environmental exposures should be addressed by EJ researchers.
   f. EJ research efforts should provide a bridge between community groups and scientists.
   g. Community groups should not be "abandoned" at the conclusion of projects.
   h. EJ research and community engagement should address communities where exposure risks are greatest.
   i. Students need to be included in EJ work and they need to receive training in risk communication.
   j. Social science theory and research methods need to be incorporated into EJ research.

2. *Helping to secure resources for community partner groups:*
   a. Funding for partner groups can be included in research proposals.

3. *On involving students in EJ research:*
   1. Specific course in EJ -- incorporating service-learning principles -- may be quite useful for undergraduate and graduate students involved in NIEHS-funded programs
   2. Collaborations with community colleges and local teachers could be useful in involving more students.

4. *What are appropriate indicators of effectiveness of community engagement efforts?*
   a. Changes in knowledge levels concerning environmental exposure risks
   b. Observed or reported changes in behavior to reduce exposure risks
   c. What metrics are used by EPA to examine EJ?

5. *Is there interest to continue this discussion?*
   a. Yes, an EJ "cluster" within the SRP universities may be useful.
   b. Opportunity exists to offer EPA some "lessons learned" from SRP community engagement efforts.
   c. An EJ cluster within the SRP's could lead one of the regular conference calls organized by Beth.

6. *Next steps:*
    a. Disseminate a list of potential contacts within EPA who may be interested in EJ "lessons learned" through SRP community engagement efforts
    b. Discuss feasibility of an EJ workshop/conference, resulting in an edited Proceedings of workshop presentations