

DERT Staff Activities for Council

Meeting Reports

Title: Centers for Neurodegeneration Science Grantees Meeting

Date: May 3-4, 2012

Place: NIEHS

Introduction/Background: The NIEHS funds Centers for Neurodegeneration Science at the University of California in Los Angeles, Emory University, and the Sanford-Burnham Institute in La Jolla, California. The Centers foster research into how gene-environment interactions contribute to Parkinson's disease through integrated research projects, training, and multidisciplinary collaborations.

On May 3-4, the directors, project investigators, and trainees from the Centers for Neurodegeneration Science met at the NIEHS to share new research findings and to discuss the current challenges and opportunities related to environmental and genetic contributors to Parkinson's disease. The meeting provided an important opportunity for Center researchers to interact and identify areas for collaboration. Grantees gave scientific presentations, participated in a poster session, and discussed future directions for investigation.

Gwen Collman, Director of the NIEHS Division of Extramural Research & Training (DERT), opened the meeting by talking about strategic goals from the draft NIEHS Strategic Plan that related to the CNS program. NIEHS staff also presented on intramural Parkinson's disease research, grantsmanship and training, their efforts related to the exposome, and the Toxicology in the 21st Century Partnership (Tox21). In addition, Stephen Grate from the Department of Defense (DOD) Parkinson's disease research program talked about DOD opportunities for funding.

Meeting Highlights: Emory Parkinson's Disease Collaborative Environmental Research Center (Gary Miller)

The Emory Parkinson's Disease Collaborative Environmental Research Center is aimed at understanding how environmental contaminants such as pesticides contribute to the development of Parkinson's disease. Researchers at the Center study how environmental contaminants disrupt dopamine homeostasis, mitochondrial function, and redox balance in the substantia nigra, an area of the brain involved in movement. They are also investigating how the affected neurons respond to these insults and are exploring metabolomics methods for identifying biomarkers associated with the disease. They have identified key mechanisms that appear to be involved in the onset and progression of the disease and have developed innovative research tools.

UCLA Center for Gene-Environment in Parkinson's disease (Marie-Francoise Chesselet and Beate Ritz)

The UCLA Center for Gene Environment in Parkinson's disease is studying the cellular mechanisms through which agricultural pesticides produce dysfunction and death of dopamine neurons and lead to Parkinson's disease in humans. Center researchers have provided evidence that exposure to specific pesticides increase the risk for Parkinson's disease through

studies of a well-characterized group living in the agricultural region of California Central Valley. By studying these risk factors in animal and cellular models, they have shown that several pesticides affect cellular pathways potentially involved in Parkinson's disease. These pathways include the ubiquitin-proteasome system (UPS), microtubule assembly, and the detoxification enzyme aldehyde dehydrogenase (ALDH).

La Jolla Center for Neurodegeneration Science Stuart Lipton

The La Jolla Center for Neurodegenerative Science uses cell and animal models to study how the environment interacts with genes and gene products to lead to Parkinson's disease. The Center has discovered that proteins involved in Parkinson's disease undergo chemical modifications in response to environmental contaminants. These modifications mimic genetic mutations involved in familial Parkinson's disease and cause problems that eventually leading to neuronal cell injury and death. Researchers from the Center are using high-throughput screening to identify drugs that might offset damage caused by these modifications and to identify biomarkers associated with Parkinson's disease.

Recommendations/Outcomes: The discussion portion of the meeting centered around the topics of human-induced pluripotent stem cell (hiPSC) and human embryonic stem cell (hESC) as "disease in a dish" models of Parkinson's disease, animal models of Parkinson's disease, and identifying gene-environment interactions through human analysis. Throughout the discussion, grantees emphasized the importance of collaboration and Center-type funding in moving the understanding of Parkinson's disease forward. Grantees said that the Centers for Neurodegeneration Science are key for

- Testing hypotheses in multiple animal and cell models and integrating that data with information from human Parkinson's disease patients
- Funding important collaborations, such as one in which Emory is examining the metabolomics of serum samples from human samples collected by UCLA
- Examining a variety of genes and gene products for gene-environment interactions
- Developing new approaches and technology for studying Parkinson's disease
- Combining data from various patient populations in different regions of the county
- Providing new hypotheses to test and a group with which to check hypotheses before proceeding to big (and costly) science
- Recruiting new investigators to studying environmental causes of disease
- Exposing Ph.D. students and postdocs to leaders in the field of research into the environmental causes of Parkinson's disease to raise their interest in this area of study
- Isogenic cell lines are best for comparing a single gene mutation, and many isogenic lines are needed because differences in genetic background may be important.
- Stem cells can be used for developmental studies to test where along the pathway susceptibility to a toxin develops.

Title: Mental Health Training Issues for Disaster Responders

Date: June 25, 2012

Place: New Orleans, LA

Introduction/Background: NIEHS WETP held a listening session with stakeholders from the Gulf Coast states to discuss issues related to mental health training for disaster workers responding to environmental incidents. The meeting participants included community groups,

Gulf Coast primary care physicians, Gulf Coast mental health providers, academia, federal partners, and grantees from the WETP.

Meeting Highlights: Three objectives were identified for the meeting: identify and highlight best practices; identify collaborations / networks, and identify gaps in mental health training for workers. Ultimately, the expected products include: a revised set of pre and post disaster training tools and a mechanism to effectively and efficiently disseminate the training.

Two main themes came out of the meeting: 1) Pre-training of workers provides more competent and resilient workers. Participants understood that while “just-in-time”/incident specific training has an impact, pre-disaster training of workers is highly recommended. 2) Performing as a community team, involving public health, primary care, community programs, and mental health providers’ results in better outcomes than does working in silos.

Recommendations/Outcomes: To close the meeting, NIEHS WETP staff laid out the process for moving forward with this project to include developing new or updating existing curricula and then working to communicate the existence of the materials and working to get them integrated into the existing training programs or finding new opportunities in which to provide the material.

Title: Safety and Health Trainers Exchange for Nuclear Workers

Date: May 7-8, 2012

Place: Knoxville, TN

Meeting Highlights: NIEHS WETP held a National Trainers Exchange for trainers in the national nuclear weapons complex. Over 100 HAZMAT and RAD safety and health trainers responsible for training more than 35,000 workers annually who engage in environmental restoration activities at DOE nuclear weapons sites came together to share best practices and new techniques to increase training effectiveness across the DOE Complex through a series of workshops conducted by the trainers themselves. Trainers from the eight consortia funded under the DOE Nuclear Worker Training Program attended the Trainers’ Exchange.

Multiple workshops engaged trainers in dialogue about ways to improve training effectiveness through structural organization of trainings. A general consensus emerged among trainers attesting to the merits of student interactive exercises in stimulating greater levels of student learning and information retention. Other lessons learned illustrated approaches to maximize the effectiveness of PowerPoint presentations, including the Assertion Evidence approach, which relies primarily on visual evidence to support brief informational text on lecture slides. Furthermore, trainers from across the DOE Complex cited student evaluations as an essential component to assessing training effectiveness and revising curricula to meet trainee and workplace needs.

Participants also shared what they thought about and learned from the Trainers’ Exchange. Participants enjoyed several workshops, including but not limiting to topics on alternative asbestos control method, BP spill lessons learned, behavior based safety, and sense of smell. Participants also felt that the interactions and quality of presentations were outstanding. One participant noted that while the argument is always that one site is different from the other, at this trainers’ exchange, they learned that everyone is concerned with the same safety and health issues. It was recommended to bring future trainers’ exchanges to other DOE sites across the country to show that this type of resource is available.

Recommendations/Outcomes: In moving forward, NIEHS will continue to collaborate with DOE Office of Health, Safety and Security (DOE-HSS) in participating in the development and implementation of the training reciprocity program and in coordinating the activities of its awardee community. NIEHS will also continue to support DOE-HSS in the implementation of its goals to improve the health and safety of workers across the DOE nuclear weapons complex.

Title: Human Genes and the Environment Training Program Directors Meeting

Date: July 9, 2012

Place: NIEHS

Introduction/Background: The Human Genes and the Environment Training Initiative was a cooperative effort between the NIEHS and the National Human Genome Research Institute to define and train health scientists in the emerging interdisciplinary field of Environmental Genomics. The goal is to produce trainees who can bridge genetics/genomics and the environmental health sciences and focus research efforts on understanding the relative contributions of genetics/genomics and environmental exposures on the etiology of common diseases.

Meeting Highlights: Program Directors, faculty and trainees of the Human Genes and the Environment Training Program met in Rodbell Auditorium on the NIEHS campus. The meeting, which was a follow-up to a recommendation of a working training directors meeting in Cincinnati last fall, allowed the trainees across the three funded programs to share their research with other trainees and to better understand the research programs across the three funded programs. Faculty from each of the three funded programs gave an overview of the program, the program objectives and the training elements of their program. Five faculty and ten trainees participated in the meeting. Dr. Carol Shreffler, COSPB, is the program director for the Training Program and organized the meeting.

The three funded training programs include: Interdisciplinary Training in Genes and the Environment, Harvard School of Public Health, Marianne Wessling-Resnick, Program Director; Gene-Environment Interactions Training Program, University of Cincinnati, Daniel Nebert, Program Director; and, Human Disease and the Interplay between Genes and the Environment, University of Arizona, Terrence Monks, Program Director.

Title: HHS Environmental Justice Stakeholders Implementation Meeting

Date: July 16 & 17, 2012

Place: NIEHS

Background

The National Institute of Environmental Health Sciences (NIEHS) staff members are actively engaged in the [HHS Environmental Justice working group](#). The working group developed a [2012 HHS EJ Strategy](#) and Implementation Plan in response to the re-invigorated efforts at EPA to coordinate Federal agencies with a commitment to addressing EJ issues as part of a [Federal Interagency Working Group](#). In support of the HHS EJ working group, NIEHS hosted the *HHS Environmental Justice Stakeholders Implementation Meeting* to explore partnership opportunities, share the progress HHS has achieved in implementing and promoting EJ, and to

get stakeholder feedback regarding the implementation of its EJ Strategy and Implementation Plan. The meeting brought together thirty HHS officials and fifty-eight community and other stakeholders from across the country to engage in an interactive dialogue focusing on the implementation of the 2012 HHS Environmental Justice Strategy.

Meeting Highlights

Community Tours: Participants had the opportunity to go on two different tours. The first was to the Rogers Road Community and Landfill Struggle, Chapel Hill, NC. The Rogers Road Community has dealt with Orange County's landfill in their backyards for almost 40 years with little compensation. While the county commissioners voted in October of 2011 not to extend the landfill, many issues still remain. The community continued to ask for sewer, water, and reduced traffic on their roads. Many of these homes rely on well water and have failing sewer systems. In 2010, studies were conducted on 11 wells in the Rogers Road community. The study released results that only two of the eleven tested wells supplied water that was within the EPA's water standards. Once water lines were run to the community, the sewer and water hookup fees were so high that these households could not afford them. The community has also been burdened by illegal dumpsites.

On Wednesday, July 18, 2012, participants took a community tour to explore agricultural issues in North Carolina. This tour visited a migrant farmworker advocacy organization, Farm Labor Organizing Committee (FLOC) in Dudley, NC and the Rural Empowerment Association for Community Help (REACH) which has spearheaded campaigns to limit human exposure to hog waste and improve containment and cleanup activities in Eastern North Carolina.

EJ Town Hall Meeting at Hayti Heritage Center: The Federal Interagency Working Group (IWG) on Environmental Justice hosted a town hall meeting on July 16, 2012, from 7:00 p.m. – 9:00 p.m. at the [Hayti Heritage Center](#) in Durham. It was the first such town hall meeting in which community representatives were featured up front with the federal representatives. Over 100 participants heard about Warren County and its EJ legacy, about CAFOs, and disproportionate industrial and landfill sitings in proximity to African American communities. Representatives from EPA, HHS and DOJ (Department of Justice) spoke briefly about their activities to address EJ issues in NC and nationally. There was healthy conversation about the role of the DOJ in following up on environmental crimes.

Meeting sessions: The meeting brought together Federal partners along with community leaders, academics, and representatives of state departments and national organizations to discuss and provide feedback on progress made on the HHS EJ strategy. In addition, it encouraged participants to identify other potential partners that should be a part of the process of implementing the strategy. The breakout sessions on the second day focused on the four central elements of the HHS EJ Strategy: Research and Data Collection, Services, Education and Training, and Policy. A representative from each element then reported back on the discussions and key points from the breakout. Those highlights are being pulled together. Chip Hughes led a large portion of the meeting and provided concluding comments. Sharon Beard organized and moderated a session on applying for federal grants, in addition to updating participants on the cross-cutting efforts on education and training. Liam O'Fallon led the breakout session on Research and Data Collection. John Balbus co-led the Policy breakout and provided an update on the cross-cutting activity on global climate change.

NC Environmental Justice Network: The success of this meeting can be attributed to the partnership with the NC Environmental Justice Network and their willingness and ability to identify key stakeholders in NC and arrange the tours for the meeting. Special thanks go out to

Naeema Muhammad, Gary Grant, and Steve Wing.

Recommendations/Outcomes

The participants were laudatory and appreciative of this meeting. Many noted that as HHS continues to implement the strategy, the HHS team should revisit recommendations from previous meetings, especially the 1994 workshop that NIEHS hosted. The final set of recommendations in the meeting summary will come out in the next few weeks.

Title: Annual Integration Meeting of the Breast Cancer and the Environment Research Program

Date: July 23 – 24, 2012

Place: NIEHS

Background

Jennifer Collins, Caroline Dilworth, Symma Finn, and Les Reinlib of SPHB and their colleagues at NCI organized and ran the Breast Cancer and the Environment Research Program (BCERP) Annual Integration Meeting. This year's annual meeting took place July 23 – 24, 2012 on the NIEHS campus in RTP and included approximately 60 members of the program as well as NIEHS and NCI staff. The purpose of the annual integration meeting is to provide an opportunity for grantees to discuss emerging study findings and identify potential points of collaboration among the epidemiologists, laboratory scientists, and community engagement participants of the program.

Meeting Highlights

Major highlights of the 2012 meeting include presentations by two investigators outside the BCERP program but with shared research interests: Drs. Karin Michels of Harvard University and Russ Glasgow of NCI. Dr. Michels made a keynote presentation and provided an extensive overview of the complex relationships between body size over the lifespan and breast cancer risk, including the association of changes in pubertal timing and early life environmental exposures. Dr. Glasgow of NCI gave a presentation on dissemination and implementation strategies for research findings, particularly when involving community engagement. Other highlights of the meeting include a special presentation of BCERP Puberty Studies group to the BCERP External Advisory Board (EAB) and Working Group of Breast Cancer Advocates (WG) on progress and interactions of this particular component of the BCERP. The Community Outreach and Translational Core (COTC)/Community Partner group also held a special breakout session on communicating and interpreting the language of science.

Recommendations/Outcomes

The main recommendation coming from the meeting was the need for increased integration of the Puberty Study/COTC and Windows of Susceptibility/Community Partner components of the program. In particular, there is a desire to have more opportunities to identify and discuss questions that have arisen from preliminary findings (in some cases that appear to be contradictory to initial hypothesis) amongst both the epidemiological and laboratory-based investigators. Moving forward, the group plans to develop a webinar series where all members of the BCERP will have the opportunity to present and discuss new research findings on a regular basis. The group is also exploring opportunities to increase integration at the upcoming scientific meeting of the BCERP, which will be held in San Francisco in November 2012.

Title: NIEHS-SAMHSA Invited Workshop

Date: July 26-27, 2012

Place: Hotel Indigo, Research Triangle Park, NC

Background

The Deepwater Horizon (DWH) disaster that began in April 2010 has had, and will continue to have, profound effects on the residents living in the Gulf of Mexico region. The NIEHS, through both intramural and extramural efforts, has ongoing studies focused on the potential health impacts of the DWH disaster on workers involved in the clean-up (i.e., the intramural GuLF STUDY headed by Dr. Dale Sandler) and of residents (i.e., extramural DWH academic-community research consortia) living in Gulf state communities. Among the health issues of concern are the emotional and behavioral effects that the DWH disaster has had on workers, families, and children.

In 2012, the Substance Abuse and Mental Health Services Administration (SAMHSA) initiated an interagency agreement with NIEHS to make available additional funding to extend the current mental health and resiliency research being conducted by the DWH consortia. It is within this context that the NIEHS convened an invited workshop on July 26-27, 2012 in coordination with SAMHSA to begin development of a research plan that could be conducted with the funding and that would potentially address research gaps or address key research questions.

Meeting Highlights

The NIEHS-SAMHSA meeting was held at the Hotel Indigo, Research Triangle Park, NC and was attended by approximately 38 individuals representing NIEHS, SAMHSA, and both academic and community partners affiliated with the DWH consortia, as well as outside experts recognized as leaders in disaster mental health research. Following overview presentations by the consortia members on their current research in mental health and resiliency, GuLF STUDY and WETP presentations were given by the outside experts. These included presentations by Dr. Lawrence Palinkas on "Resilience and Responses to Oil Spills," drawing from his experience with The Exxon Valdez Oil Spill; Dr. Rosalind Wright on "Examining Health Effects of Multiple Stressors over the Lifecourse: Childhood Asthma Paradigm," which focused on her supported research related to Project Access (Asthma Coalition for Community, Environment and Social Stress); and Dr. Nicole Nugent on "Conducting Longitudinal Research on Mental Health Outcomes Post-Disaster with Children," that considers the integration of biological, the psychological and the sociological factors. In addition, Dr. Howard Osofsky provided background information on his mental health studies in the Gulf and the activities related to the BP settlement funds he has received. The DWH Resiliency Working Group presented a draft concept for an integrated project on mental and behavioral effects related to the DWH. The presentations and data provided a context for the ensuing discussion of additional research needs and helped to ensure that research gaps were identified and that any plans for research would not duplicate existing efforts. The remainder of the meeting was devoted to group discussion to identify hypotheses, research questions and methodological approaches for extending the current DWH studies.

Recommendations/Outcomes

At the end of the day-and-a-half meeting, there were a number of research questions identified for further consideration. These included the following: Can community level interventions or structures optimize individual and community resilience? What are the areas of susceptibility that are interdependent between individual and community resilience? What role does culture

play in resiliency? Does social conflict around disasters both at the community and family level inhibit resilience? The DWH RWG will continue to refine the research plan over the coming months, based on the input and information shared at the workshop.

Staff Activities

Dr. Gwen Collman served as co-chair of the Scientific Program Committee for the International Society of Environmental Epidemiology Meeting on August 26-29, Columbia, SC.

Dr. Collman gave a talk on data sharing in a symposium on privacy and confidentiality issues in environmental epidemiology data and met with junior investigators to discuss their perspective on needs for data sharing in the future in an early risers session.

Dr. Collman convened and chaired a plenary panel bringing together US and European agencies to discuss future directions for the field of Environmental Epidemiology at ISEE.

Dr. Collman participated in a lunchtime conversation and Latino cancer researchers with Dr. Robert at the National Latino Cancer Summit, July 24, 2012.

The DERT Training Committee finalized and distributed the DERT New Employee Onboarding Manual. The Manual contains information to help new staff understand processes, acronyms, and day to day operations in DERT.

On May 14-15, 2012 **Dr. Frederick Tyson** (COSPB) moderated a session at the Annual All Hands Meeting for the Roadmap Epigenomics Program. He also served as an organizer at this meeting. On May 16, 2012, Dr. Tyson chaired the Reference Epigenome Mapping Consortium (REMC) Steering Committee Meeting and presented on the consortium's progress. He served as an organizer for this meeting too. Both meetings took place in Bethesda, MD.

On June 3-8, 2012 **Dr. Tyson** participated as a panel speaker at the Oceans and Human Health Gordon Conference held on the campus of the University of New England in Biddeford, ME. Along with colleagues from the National Science Foundation and the National Ocean and Atmospheric Administration, he served as a panelist in a discussion regarding the current state and immediate future of Federal agencies' commitments to the support of OHH research.

Dr. Tyson participated as an organizer for the NIH Roadmap supported Surrogate Tissues Workshop, where the opportunities and obstacles were discussed with respect to the epigenomic analyses of surrogate tissues, e.g., peripheral blood leukocytes for analyses of epigenomic changes in less accessible tissues e.g., neuronal tissues. This meeting was convened on August 28, 2012 in Natcher Auditorium on the NIH campus in Bethesda, MD.

Dr. Tyson participated as an organizer and speaker at the annual International Human Epigenome Consortium (IHEC) Meeting in Seoul, South Korea, September 4-8, 2012. This was the third annual IHEC meeting. Dr. Tyson serves as a member of the IHEC Executive committee and gave an update on progress made by the NIH supported REMC.

At the end of June 28-29, **Dr. Annette Kirshner** (COSPB) attended a Department of Defense sponsored meeting on "Parkinson's Disease Models, Biomarkers & Biochemical Pathways" and presented on the biomarkers portfolio that we support at NIEHS.

Dr. Lisa Helbling Chadwick, Dr. Jerry Heindel, and Dr. Thad Schug (COSPB) attended the Gordon Research Conference on Environmental Endocrine Disruptors on June 3-8, in Mt. Snow, VT. Dr. Heindel chaired a session on Gene-Environment Interactions, Epigenetics, and EEDs.

Dr. Bill Suk (CRIS) participated in series of meetings regarding arsenic exposures and disease etiology at Bangkok, Thailand, June 29 - July 7, 2012 in preparation for a symposium on the same subject in Hanoi, Vietnam July 8-10, 2012. He attended a series of meetings at the Chulabhorn Research Institute, July 14-16, 2012 to take part in series of meetings and forums on the implementation and continuation of series of projects related to environmental health research and training.

The Interagency work group developing the "My Air, My Health" Challenge has completed the development process. The challenge is undergoing clearance currently and is expected to be announced June 6, 2012 by Dr. Birnbaum. **Dr. David Balshaw** (CRIS) and Dr. Allen Dearry have represented NIEHS in the development of the challenge.

Dr. Balshaw and **Dr. Aubrey Miller** participated in the Common Fund strategic planning meeting in Potomac, Maryland May 17-18, 2012. A group of invited external experts proposed potential Common Fund Initiatives at the outset of the meeting and were developed through a series of small group discussion. Five proposals were presented in detail to NIH Director Francis Collins. Two additional concepts were also discussed at a very cursory level with Dr. Collins.

Dr. Suk and **Dr. Danielle Carlin** (CRIS) visited the University of Arizona P42 Superfund Research Program Center on May 2-4, 2012 to celebrate the induction of Dr. Raina Maier as the new Director of the Center. She has replaced Dr. Jay Gandolfi, who is retiring December 12, 2012. Dr. Suk visited with several of the leaders at the University, met with several Center Project PIs and had lunch with Center trainees. Dr. Carlin traveled to the Iron King Humboldt Smelter Superfund site with some of the Center's trainees and faculty. Dr. Carlin was shown the phytostabilization test plots and particulate monitoring equipment at the site and visited the gardens of some of the community members from Dewey-Humboldt who have participated in the Gardenroots: The Dewey-Humboldt, Arizona Garden Project which is led by Monica-Ramirez-Andreotta.

Dr. Carlin visited the University of Washington P42 Superfund Research Program Center on June 25 - 27, 2012.

Dr. Carlin visited the Harvard School of Public Health P42 Superfund Research Program Center on July 25, 2012. The purpose for her visit was to meet with several of the project and core leaders, and Center trainees as well as to discuss the transition of the Center from Dr. Wright to Dr. David Bellinger.

Dr. Heather Henry (CRIS) attended the SERDP and ESTCP Workshop on Research and Development Needs for Long-Term Management of Contaminated Sediments held July 25-26, 2012 in Seattle, WA. During this meeting, state/federal stakeholders joined representatives of academia and engineering firms to discuss specific sediment R&D issues that would be helpful in getting to remedial decisions and implementation. The purpose of the meeting was to provide input for the DOD's upcoming RFA on environmental restoration and contaminated sediments. SERDP and ESTCP are the DOD's environmental research grant program.

Dr. Henry visited the Lower Duwamish Waterway Superfund site on July 24th to see the deployment of passive sampling devices that are being developed by SRP OSU grantee Kim

Anderson. The devices are placed in the air, into the sediment, and in the free water and are fitted with materials that selectively attract PCBs. They are left in place for about 3-4 months and give an indication of the bioavailable form of the contaminants.

Dr. Henry visited SRP lab facilities at University of Washington on July 26th.

Dr. Kristi Pettibone (PAB) led an effort to obtain a generic Office of Management and Budget (OMB) clearance last fall. The application was approved in June. This will enable PAB staff to collect data about outputs, impacts or achievements the grantees made, as well as grantees' thoughts on program management from up to 200 NIEHS grantees per year. This approval will enable a limited but intensive data collection from grantees to document their key impacts.

Dr. Pettibone attended an intensive training on Social Network Analysis from June 4-8. The training will enable PAB to evaluate and understand the collaborative achievements of the consortia funded by NIEHS, including the BPA and Nano ARRA projects. Potential analyses will include assessments of the density of the networks, identification of key players in the networks, and analyses of the fields represented in the networks. The goals of the consortia are to foster collaborations and facilitate interdisciplinary research and these analyses will help us understand if we are meeting these goals.

Mr. Jerry Phelps (PAB) participated in the Staff Training in Extramural Programs (STEP) Annual Triage Meeting (July 11-12) during which the ten STEP Forum topics for FY13 were selected. Topics include: "Change is Inevitable: How to Lead It," "HIV/AIDS: Have We Conquered the Demon?," "Dietary Salt: To Shake or Not to Shake?," "NIH and Social Media: You've got Connections!," "Got (enough) Vitamin D?," "Body Re-engineering: Leaping Towards the Future," "Allergies: Food, Drugs, and Pollen - OH MY!," "Behavior Change: Why is it so Hard?," "Pediatric Clinical Trials: It's Not Just Child's Play," and "Coexisting Diseases: How to Live with Double Jeopardy."

Ms. Helena Davis (PAB) has been working with **Ms. Nicole Popovich** (DERT OD) and Ed Kang, OCPL, to push new DERT website content to the public NIEHS Website using the new content management system. For the past year, Helena has led a science writing contract to revise the content of the website, following a new structure. Over 50 pages have been written, including many new stories of discovery, highlighting exciting narratives of science advances. Many new webpages went live to the public in July.

Dr. Christie Drew (PAB) and **Dr. Pettibone**, working with developers at Open Intelligence and the DERT Training program (**Drs. Carol Shreffler** and Mike Humble (COSPB)), continued rolling out the CareerTrac Trainee tracking program to 23 NRSA-T32 program director's. Two webinars (July 25 and July 27) were held to introduce Training Directors and their assistants to the CareerTrac program and assist with an initial upload of existing training data into the system. Webinars were well attended, and participants are generally enthusiastic about storing training data in CareerTrac.

The CareerTrac team has also made significant progress in importing baseline data for 1400 trainees funded by the Superfund Research Program. The system was demonstrated to Superfund grantees and administrators on July 31. Approximately 175 SRP users now have direct access to CareerTrac and can add trainee data directly to the system, search trainees, and create reports. (Team includes: **Dr. Drew** and **Ms. Davis** (PAB), **Dr. Carlin** and **Mr. Edward Pope** (SRP), F.O. Finch, Doug Giles, and Michael Wilburn (Open Intelligence)).

Ms. Elizabeth Ruben (PAB) attended the NIH Portfolio Analysis Symposium on July 23-24. The Symposium focused on the use of data-driven methods to inform management of the NIH investment in biomedical research and featured internationally renowned experts in portfolio analysis methods and best practices.

Dr. Dan Shaughnessy (SPHB) will be participating in the NAS workshop, “Exploring Human Genomic Plasticity and Environmental Stressors: Emerging Evidence on Telomeres, Copy Number Variation, and Transposons” that is part of the workshop series, “Emerging Science for Environmental Health Decisions.” This will be held in Washington DC on Oct. 4-5.

Dr. Caroline Dilworth (SPHB), **Dr. Kimberly Gray** (SPHB), **Dr. Kimberly McAllister** (SPHB), **Mr. Liam O’Fallon** (SPHB), **Dr. Claudia Thompson** (SPHB), **Dr. David Balshaw** (CRIS), **Dr. Cindy Lawler** (COSPB), **Dr. Thad Schug** (COSPB) and **Dr. Carol Shreffler** (COSPB) attended and were actively involved in the International Society of Environmental Epidemiology Annual Meeting in Columbia SC August 26-30. Drs. Dilworth and Gray organized a New Investigator workshop on funding Opportunities. Dr. Dilworth and Mr. O’Fallon organized the “Community-Engaged research to Address Environmental Health Concerns across the Carolinas” session. Dr. Dilworth also chaired a session on “Heatwaves, Mortality and Risk Communication.” Dr. Thompson gave an oral presentation on “Community-Based Participatory Research through the Lens of Environmental Health: More than a Catchy Sounding Name” during the *Disparities and Disasters: Implications for Environmental Health Science, Policy, and Practice Symposium*. Drs. Gray and Lawler organized a symposium titled “Challenges and Pitfalls of Multi-Site Collaboration in International Autism Environmental Epidemiology Studies.”

Dr. Lisa Chadwick (COSPB), **Dr. Kimberly McAllister** (SPHB), **Dr. Fred Tyson** (COSPB), and **Dr. Leroy Worth** (SRB) were on the planning committee an Epigenomics Roadmap sponsored one-day meeting on “Epigenomic Surrogates for Difficult to Access Tissues” held August 28 at the Natcher Center on the NIH campus.

Dr. Gray attended the National Children’s Study 7th Federal Consortium Meeting hosted by NICHD. The goal of the meeting was to inform federal partners about the Study’s progress, present current goals, seeks ways to collaborate amongst federal agencies and to share data resource opportunities.

Dr. Finn participated in an NCI-organized Community Health Expo, held in Silver Springs MD Civic Center on Saturday, July 14, 2012. The NIEHS exhibit included a poster highlighting the benefits of diet and exercise to prevent obesity (“To Win You Have to Lose”) and posters about asthma triggers and making health choices (“Health Choices can Be Easy Choices”), as well as informational materials on breast cancer and the environment, ozone, avian flu, asthma, and children’s pamphlets on genetics/epigenetics and environmental health.

Dr. Gray attended a series of National Children Study Meetings held in Bethesda, MD July 10-11. Dr. Gray sits on the Interagency Coordinating Committee for the NCS.

Dr. Dilworth and **Mr. O’Fallon** participated in the North Carolina Association of Biomedical Research (NCABR) teacher workshop titled “Chemicals, the Environment, and You”, which was co-sponsored and hosted by NIEHS on June 19, 2012. Mr. O’Fallon gave the opening remarks for the workshop, including welcoming the teachers to NIEHS and providing a brief overview of the NIEHS and Environmental Health Science. Dr. Dilworth gave a presentation on “Breast Cancer and the Environment”.

Dr. Les Reinlib attended Mammary Gland Biology Gordon Conference held in Lucca Italy, June 9-15. Les spoke to approximately 50 young investigators who aspire to academic research and served as a mentor on grant funding and research priorities in mammary gland biology.

Dr. McAllister attended the 2012 meeting of the InterLymph Consortium held at Natcher Conference Center in Bethesda, MD on June 7-9, 2012. The InterLymph Consortium supports international collaborations among researchers and provides a framework for efficient publication of original meta-analysis and pooled analysis of studies related to the genetic and environmental risk factors for lymphoid cancers through epidemiological studies.

Dr. Dilworth and Dr. Reinlib were asked to serve on the steering committee of the newly formed "Trans-Agency Early-life Exposures and Cancer (TAEEC) Working Group." The purpose of the working group, which is being led by NCI with participation from NIEHS, NICHD, NCCAM, the NIH ODS, CDC, FDA and DOD, is to leverage resources across government agencies to facilitate activities aimed at promoting and supporting scientific research on the role of early-life exposures and events and cancer throughout the life course.

Drs. Gray and Thompson are on the planning committee for the Household Air Pollution Cookstove Training Course being led by NICHD and FIC.

Dr. Finn and **Mr. O'Fallon** are on the trans-NIH planning team for the upcoming NIMHD Summit on the Science of Eliminating Health Disparities. Dr. Finn participates as a subject matter expert and Liam is on the partnerships sub-committee.

Mr. Ted Outwater (WETB) attended the Good Jobs Green Jobs conference in Detroit, MI, May 10-11, 2012 and presented on "Environmental Justice: The Catalyst for Green Jobs and Equitable Development" with Kent Benjamin, Acting Deputy Director, U.S. Environmental Protection Agency, Office of Environmental Justice and on "Green or Not: Safety is the Law" with Bill Donovan, Assistant Regional Administrator for Enforcement Programs, Occupational Safety and Health Administration Region 5.

Mr. Jim Remington (WETP) represented "NIEHS Deep Water Horizon: Lessons Learned" at the Clean Pacific conference in Long Beach, CA, May 16, 2012. Clean Pacific offers top-caliber content for anyone who prepares, prevents or responds to an oil spill or large incident.

Mr. Outwater represented NIEHS WETP at the Department of Energy/ National Nuclear Security Administration Cross-Complex Learning/Training Community Workshop held at Sandia National Laboratory, Albuquerque, NM June 19-21, 2012.

Staff Awards

NIH Director's Award: Partnerships for Environmental Public Health Program. Awardees: Lynn Albert, Beth Anderson, Maureen Avakian, John Balbus, Sharon Beard, Justin Crane, Helena Davis, Caroline Dilworth, Christina Drew, Symma Finn, Kimberly Gray, Heather Henry, Joseph Hughes, Michael Humble, Cindy Lawler, Liam O'Fallon, Kristianna Pettibone, Jerry Phelps, Molly Puente, Elizabeth Rubin, Claudia Thompson, Sally Tilotta

Other NIH Director's Awards: NIEHS Recipients of Group Awards for Cross-NIH Efforts
Brain Disorders (FIC): Annette Kirshner

National Database for Autism Researchteam (NIMH): Cindy Lawler
NIH Blueprint Neurotherapeutics Team (NINDS): Cindy Lawler
NCRR/NCATS/ORIP Reorganization (OD): Elizabeth McNair and Pat Mastin
Common Fund Metabolomics Leadership Team (OD): David Balshaw

Upcoming Meetings

The Superfund Research Program 25th Anniversary meeting is scheduled for October 21- 23, 2012. It will be held at the Raleigh Marriott City Center. The meeting titled **Superfund Research Program: A Quarter Century of Transdisciplinary Research and Training to Protect Human and Environmental Health** will highlight how the Superfund Research Program advances transdisciplinary approaches to understand the exposure-disease paradigm and in a separate symposium on October 24 will explore topics related to the exposome and other related emerging areas of study.

The SRP grantee at the University of Arizona is hosting the **Epigenetic Actions of Environmental Arsenicals Workshop** on September 20-22, 2012. The workshop will be held in Tucson Arizona.

ATSDR and NIEHS Superfund Research, August 7 - 8, 2012; Atlanta, GA. **Connecting Research and Practice: A Dialogue between ATSDR and the NIEHS Superfund Research Program.**

Exploring Human Genome Plasticity and Environmental Stressors: Emerging Evidence on Telomeres, Copy Number Variation, and Transposons. Washington D.C., October 4-5, 2012. This meeting is part of the NAS workshop series, "Emerging Science for Environmental Health Decision." The Genomic Plasticity forum will look beyond random mutation and discuss the fundamental changes in genomic alterations that can contribute to disease and aging, as well as new technologies and tools to identify and study genome plasticity events. The forum will initiate/foster the exploration of how environmental stressors may impact the genome, by exploring the intersection of mechanisms leading to genomic changes and mechanisms targeted by environmental stressors.

Household Air Pollution and Cookstoves Training Institute. Bethesda, MD, October 10-12, 2012. Over the course of the three days, faculty from diverse backgrounds will use a mix of didactic and participatory methods to enable investigators to better define and understand the health risks associated with HAP, the epidemiological principles that can inform the development of robust and appropriate research study designs, the critical role of the social, behavioral and cultural factors affecting stove adoption, and the complex and evolving technologies for improved stoves and fuels, exposure monitoring, and biomarker development.

2012 Summit on the Science of Eliminating Health Disparities - Building a Healthier Society: Integrating Science, Policy and Practice. National Harbor, MD. October 31 – November 3, 2012. The 2012 Science of Eliminating Health Disparities Summit is an HHS-wide endeavor involving a broad spectrum of the federal government that seeks to advance activities to eliminate health disparities. The agenda will build on the momentum of the 2008 Summit and the increased interest of federal agencies to demonstrate their commitment towards improving the health of all Americans. The 2012 Health Disparities Summit represents an ongoing focus on emerging science and its intersection with practice and policy, while maintaining momentum on current national and international trends in addressing the social determinants of health.

The Annual Public Meeting of the Breast Cancer and the Environment Research Program (BCERP). San Francisco, CA. November 14-16, 2012. The BCERP Annual Meeting provides a forum for breast cancer researchers, breast cancer advocates and community members to come together and learn about the latest advances in understanding the role of the environmental exposures throughout critical life stages.

Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, LA. January 21-23, 2013. The goal of this conference is to improve society's ability to understand the Gulf of Mexico ecosystem, which includes humans, to ensure its long-term environmental health. One important aspect of this is understanding the impacts of petroleum pollution and related stressors on the marine and coastal ecosystems, as it will support future response, mitigation, and restoration following spills. Through conference plenary and breakout sessions, the conference will provide a forum for the research community in the Gulf of Mexico (nationally and internationally, funded through the GoMRI program as well as other federal and non-federal support) to share their latest scientific results to: bring greater context and integration to ongoing research; share scientific information with state and federal agencies and other stakeholders to initiate dialogue about how research will impact processes for policy, conservation, and management; and enhance public understanding of the Gulf of Mexico ecosystem.

Climate Change and Human Health: Merging Research and Practice. Bethesda, MD. January or February 2013 (exact dates to be determined) The goal of this meeting is to raise visibility of climate change across NIH and HHS as well as serve as a venue to bring together grantees from the NIH and CDC climate change programs to share their latest research findings and explore opportunities for collaboration.

Deepwater Horizon Research Consortium Public Meeting. Houma, LA (tentative location). February 22-24, 2013. This meeting hosted by the NIEHS Deepwater Horizon Academic-Community Research Consortium will provide a forum to learn about the ongoing efforts and results being obtained by the DWH grantees and to build capacity within communities.

On August 28, Drs. Helbling Chadwick, Tyson, and McAllister, along with other staff from the Roadmap Epigenomics Program, will hold a workshop on the topic **Epigenomic Surrogates for Difficult to Access Tissues**. Many investigators are interested in understanding how epigenetic changes contribute to the development of disease. However, at least in human studies, the tissue affected by the disease is often not directly accessible for analysis. Although epigenomics profiles are known to differ across cell types, it has not been clearly established whether more easily accessed tissues (e.g., hematopoietic cells, buccal cells, etc.) can be useful surrogates for epigenomic analyses. Participants will identify the challenges in this area, discuss the benefits and limitations of using surrogate tissues, and develop recommendations for further studies to conclusively address this question.

The Roadmap Epigenomics Program and the NHGRI-led ENCODE (Encyclopedia of DNA Elements) program will hold an outreach workshop at the American Society of Human Genetics meeting in San Francisco, CA. This workshop, organized by Dr. Helbling Chadwick, along with NHGRI staff, will showcase the large amount of publically available epigenomic data generated in these two consortia, inform attendees about how to find and use the data, and provide examples of how these data have been used in human disease studies.

Publications

Kozul-Horvath CD, Zandbergen F, Jackson BP, Enelow RI, Hamilton JW (2012) Effects of Low-Dose Drinking Water Arsenic on Mouse Fetal and Postnatal Growth and Development. PLoS One. 2012;7(5):e38249. Epub 2012 May 31. Researchers funded by the NIEHS Superfund Research Program at Dartmouth College investigated the developmental outcomes of mice pre- and post-natally exposed to low doses (10 ppb) of arsenic through the mother's drinking water. Their findings demonstrate that exposure to low doses of arsenic during critical windows of development can cause a number of adverse health outcomes in mice, both for the mother and the offspring.

Drew CH, Pettibone KG, O'Fallon LR, Collman GW, Birnbaum LS (2012). Measuring Partnership Activities: Partnerships in Environmental Public Health Evaluation Metrics Manual. Environ Health Perspect 120:a261-a262. <http://dx.doi.org/10.1289/ehp.1205512>

Hennig, B., Ormsbee, L., McClain, C.J., Watkins, B.A., Blumberg, B., Bachas, L.G., Anderson, W., Thompson, C., Suk, WA (2012). Nutrition can modulate the toxicity of environmental pollutants: Implications in Risk Assessment and Human Health. Environ Health Perspect 120: 771-774.

Chadwick LH (2012). The NIH Roadmap Epigenomics Program data resource. Epigenomics. 4(3):317-24. This is part of ongoing outreach efforts to publicize the Roadmap Epigenomics Program. It is a user's guide to the resource, describing the types of data available and providing information about how these data may be viewed or downloaded.

Grantee Awards

Dr. Fei Guo, an SRP post-doctoral fellow working with Dr. Robert Hurt – SRP investigator at Brown University, has won the prestigious international Brian Kelly Award 2012 for his research on "Graphene-Based Environmental Barriers." The award was presented at Carbon 2012, the annual world conference on carbon in Krakow, Poland, on June 21, 2012.

The SRP 2012 KC Donnelly Externship awards have been made.

- Sabine Vorrick (University of Iowa) will conduct her externship at the University of Arizona
- Steven O'Connell (Oregon State) will work with EPA officials at the Lower Duwamish Waterway Superfund Site
- Vanessa de la Rosa (UC-Berkeley) will spend her externship at the University of North Carolina at Chapel Hill.

You can read more about their research on the SRP website

<http://www.niehs.nih.gov/research/supported/srp/training/donnelly/2012winners/index.cfm>.

These awards are intended to provide current SRP-funded graduate students and post-doctoral researchers with translational/transdisciplinary opportunities and experiences within other SRP-funded centers, government laboratories (EPA, ATSDR, NIEHS), or other agencies (state, local, Tribal). Dr. Danielle Carlin is the Program Contact and Administrator for the KC Donnelly Externship Supplements.

Elizabeth Matsui of Johns Hopkins just received an award at the European Academy of Allergy and Clinical Immunology recognizing her as the world's top young investigator in allergy and

immunology. She is the PI of a project within the DISCOVER and Children's Environmental Health Center Programs at Johns Hopkins.

Sharon and David Gauthe of BISCO, and community partner with the Tulane University Deep-water Horizon academic consortium, received a Lifetime Achievement Award on May 30 from the America's WETLAND Foundation. This organization recognizes outstanding individuals that exhibit a strong commitment to costal restoration through their work or volunteer activities. Sharon and David founded BISCO in 1992 in response to Hurricane Andrew. BISCO works to make sure all voices, including those of minority residents such as American Indians, are heard in communities facing the consequences of coastal erosion. After the Gulf oil spill, BISCO held more than 200 community meetings with more than 6,000 attendees to give voice to residents.

Staff Changes

Michelle Heacock, Ph.D., received her doctorate from Texas A & M University in College Station, Texas for her work on the interplay between DNA repair proteins and telomeres. Her postdoctoral work was conducted at the National Institutes of Environmental Health Sciences where she studied the DNA repair pathway, Base Excision Repair. Her research focused on understanding the causes of cellular toxicity caused by the exposure DNA damaging agents. Michelle is currently on detail in the Division of Extramural Research and Training, where she is working with the Center for Risk and Integrated Sciences group. She works closely with Beth Anderson on planning for the ATSDR-SRP and SRP 25th anniversary meetings. She is also working with David Balshaw and Dan Shaughnessy on the development of Strategic Plan Goal #3 (Exposure) and the write-up for the Genes-Environment Initiative Program. Lastly, Dr. Heacock is working on analysis of DNA repair within SRP looking at how the research falls into basic to applied science.

Mr. William Jackson, a Ph.D. student in the Department of Education at the University of North Carolina, Chapel Hill, has served as a summer intern with the Program Analysis Branch. He has been working on a literature review related to Environmental Health Economics Evaluation. His work is anticipated to help in our thinking about how we can measure the economic value of our research investments. Mr. Jackson returned to school in August.

Ms. Hannah Leker has been working as an intern for WETB this summer. She is a UNC Class of 2013 Distinguished Scholarship recipient and a member of UNC Honors Program. She is currently majoring in Environmental Health Science within the UNC School of Public Health, with a minor in Chemistry. For her internship in DERT, Hannah has been gathering and cataloguing peer reviewed resources on training program evaluation for the upcoming WETP Technical Workshop in October 2012. This past year, Hannah and her student team from the UNC Gillings School of Global Public Health's Department of Environmental Sciences and Engineering were among those at 45 schools nationwide to receive a \$15,000 grant from the U.S. Environmental Protection Agency (EPA) to help design sustainable technologies.