

*A Letter from  
 the Director,  
 Office of Science Policy*

As spring emerges in Washington, OSP's efforts continue to bloom across the Agency. Science Month at EPA kicked off with the 2003 EPA Science Forum: Partnering to Protect Human Health and the Environment. OSP staff worked double-time to provide the oversight and management support for this event. (See the lead article for more details!) The FY 05 research planning process is almost complete, reflecting changes that have been implemented to streamline the process. The biggest change will be recognized later when the planning process moves from an annual cycle to a biennial one. OSP's support to the Program Offices continues to increase as staff participate in more document review in support of the tiering process, analytic blueprints, and other parts of the action (reg) development process. We also are following through on our commitments made at the Atlanta meeting last September with Regional Administrators. To highlight a few items, we are nearing completion on the pilot ORD science portal with Region 1, two scientists are participating in the newly established Regional Research Partnership Program, and the RARE budget has been doubled.

Happy Spring!



Director  
 Office of Science Policy

## EPA Science Forum Draws Record Crowd

The second EPA-wide Science Forum has received high marks and is said to have been a resounding success. *EPA Science Forum 2003: Partnering to Protect Human Health and the Environment*, which was held on May 5-7, 2003, in the Ronald Reagan Building in Washington, DC, drew a crowd of more than 1,100 attendees, including environmental professionals, academics, Agency stakeholders, and others, who came to learn more about the importance of promoting science collaboration and moving the results of our scientific efforts into action in the following key areas:

- Year of Water: 30 Years of Progress Through Partnerships
- Homeland Security
- Moving Science Into Action
- Emerging Technologies.

The Forum opened with plenary sessions that featured a number of distinguished speakers, who emphasized the importance of quality science within EPA and the Agency's increased focus on incorporating science into its regulatory and policy decisions. These speakers also highlighted the need for partnering with other agencies and organizations to address the many challenges that lie ahead in protecting human health and the environment.



**More than 1,100 environmental professionals, Congressional staffers, stakeholders, academics, and others from across the country registered for the Forum.**

Featured speakers included EPA Administrator Christine Todd Whitman and Deputy Administrator Linda Fisher; ORD's Assistant Administrator and EPA Science Advisor, Paul Gilman; Region 4 Regional Administrator Jimmy Palmer; and the Chairman of the White House Council on Environmental Quality, James Connaughton. Other plenary speakers included representation from the Department of Homeland Security; North Carolina Department of Environment and Natural Resources; Mohawk Nation of Akwesasne; National Geographic Society; and the Woodrow Wilson International Center for Scholars.

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## Forum (Continued from p. 1)

The first day of the Forum concluded with poster presentations of more than 220 posters and an awards ceremony to honor the recipients of the 2002 Scientific and Technological Achievement Award.

The second and third days of the Forum were devoted to breakout sessions for each of the four key theme areas and included presentations by EPA scientists and representatives from our partnering organizations.

In addition to the speaker and poster presentations, the Forum included exhibits which highlighted the co-sponsoring EPA organizations (Office of Research and Development, Office of Water, Office of Solid Waste and Emerging Response, and the Regions). An EPA field equipment display in the courtyard between the Ronald Reagan and Ariel Rios buildings was as much an attraction to



**Two of the 16 exhibitors at the 2003 Science Forum highlighting two of the forum themes—Emerging Technologies and Year of Water.**



**The Homeland Security Planning Session, one of the four key Forum topics, was well attended.**

participants as it was tourists who were passing through the area.

As the major opening event to Environmental Science Month, the Forum was a tremendous success. For more on the Forum, please be sure to check out the Web site in the next few weeks where the proceedings will be posted for your reading pleasure at: [www.epa.gov/ord/scienceforum](http://www.epa.gov/ord/scienceforum).

Congratulations to all the OSP staff who made the event possible! 



**There were more than 220 posters presented at the Forum covering a broad range of environmental topics.**



## Region/ORD Science Summit II

Dr. Paul Gilman, Dr. William Farland, and Michael Brown met with the Deputy Regional Administrators on January 15 in Washington, DC, to continue their discussions started at the first Regional/ORD Science Summit last September on ways to enhance the ORD/Regional partnership and build science capabilities in the Regions. Dr. Gilman reported on ORD's progress to address several of the actions identified at the first Science Summit, including activities which will enable Regional scientists to access more easily ORD research products and scientists, the new Regional Research Partnership Program, efforts to establish a new Forum on Environmental Monitoring to address Regional monitoring methods issues, and the role of the Agency Science Advisor as an advocate for Regional science programs.

ORD is working with Region 1 to pilot an ORD Science Portal that will serve as a "Region-centric" gateway into ORD. The

intranet application will include links to ORD science-related databases (i.e., Bio-sketch and the Environmental Information Management System), ORD research strategies and research plans, and ORD environmental models (Models3) and databases (ECOTOX). While the application is essentially complete, there are a few minor issues to be resolved in the very near future. A demonstration then will be provided to Dr. Gilman.

At the meeting, Dr. Gilman distributed copies of a memo announcing the Regional Research Partnership Program. The goal of this program is to establish linkages between Regional and ORD scientists, promote professional development for scientists in the Regions, and augment Regional science capabilities. Each Region is invited to select one participant per year to work directly with ORD scientists at an ORD laboratory on a research project of mutual interest to both

parties. These 3 to 6 month details will begin this summer. Currently, there are two scientists participating in the program.

Bill Muszynski, Deputy Regional Administrator in Region 1, agreed to co-chair with Ramona Trovato, a Forum on Environmental Monitoring. This new Science Policy Council Forum is charged with ensuring the scientific validity of monitoring data and will work to promote consistency and consensus within the Agency on monitoring issues.

Lastly, Dr. Gilman reiterated his offer to play whatever kind of Regional science program advocacy role needed by the Regions. As EPA's Science Advisor, Dr. Gilman shared his vision of an EPA community in which science and policy are interwoven toward a comprehensive view of science and research, including the science conducted within the Regions. Subsequent to the meeting, the Deputy Regional Administrators have accepted Dr. Gilman's offer and will be looking for him to represent some of their science program interests to the EPA Administrator. ■

## Streamlined ORD Planning Process

ORD has implemented several changes to streamline the research planning process. These changes are intended to significantly reduce the time burden involved in research planning, while retaining a focus on delivering the highest quality science to the Agency.

ORD research planning is driven by multi-year plans (MYPs). The MYPs serve as tools to plan the direction of ORD's research program, communicate within ORD and with others, and help ensure the relevance, quality, and performance of our research. Multi-year planning allows ORD to consider the future strategic direction of the Agency and how research can best contribute to the Agency's mission of protecting human health and the environment.

Using the MYP, Research Coordination Teams (RCTs) work with our Program and Regional Office customers to identify the

highest priority research and where the research program described in the MYP can be adjusted, if necessary. The RCTs carefully review each MYP to prioritize annual performance goals (APGs). Those APGs identified as being the least critical to achieving the long-term goals set forth in the plan are placed in a contingency pool for future evaluation by the ORD Executive Council if changes are needed to accommodate new work or adjust resources in the budget process.

The Program and Regional Office members of the media-specific RCTs have the lead role in identifying their problem-driven research priorities. They prepare a short statement summarizing the highest priority research addressing their needs across all assigned MYPs. This statement identifies the major areas or activities that the Program and Regions found critical to accomplishing their mission. Using the MYPs and

the priorities identified, they then identify APGs for the contingency pool.

For multimedia or core research, the Multi-Media RCT coordinates the identification of research priorities by the RCT planning workgroups for each MYP. These workgroups include representatives from ORD and across the Agency.

The biggest change in the planning process will not be felt until later—the use of a biennial rather than an annual cycle for research planning. The revision of MYPs and the development of a contingency pool (conducted annually in the past) will be conducted during alternate years in the future. This alternating schedule should significantly reduce the time spent in program planning, while allowing greater time for communicating results, improving integration, and ensuring a focus on the highest priority science. ■



## ORD/OPPTS Seminar Series

**January 15, 2003**—The Agricultural Health Study/Pesticide Exposure Study: Study Design, Status, and Preliminary Results

Authors: Drs. Kent Thomas and Linda Sheldon, Human Exposure and Atmospheric Sciences Division, National Exposure Research Laboratory (NERL)

The Agricultural Health Study (AHS) is a collaborative effort between the National Cancer Institute, the National Institute of Environmental Health Sciences, and the U.S. EPA to quantify cancer and non-cancer health risks in the agricultural community and to study the relationship between agricultural exposures and disease. The AHS is a large prospective epidemiological cohort study in the states of Iowa and North Carolina. Enrollment of more than 89,000 private pesticide applicators and spouses was completed in December 1997. NERL is leading the AHS Pesticide Exposure Study (AHS/PES) to directly measure exposures resulting from the agricultural use of 2,4-D

and chlorpyrifos for a subset of applicators in the AHS cohort.

Results from this study will be used to: (1) assess and refine AHS exposure classification algorithms to improve the power of the epidemiological study, thereby improving the utility of the overall study to EPA and other agencies; (2) provide current farm applicator and farm family exposure measurement and exposure factor information; and (3) provide information that can be used for exposure reduction education for farmers and others in the agricultural community. The PowerPoint slides of this presentation can be viewed on the intranet at <http://intranet.ord.epa.gov:9876/development/RCT/PestToxRCT.nsf/1d97341def1e57d185256a5c006ee712/de64ad9f2d9ff5a685256c85006d54da?OpenDocument>.

**February 12, 2003**—Exposure to Pesticide Mixtures and Age-Related Immunotoxic Risk

Author: Dr. Femi Adeshina, Ph.D., National Center for Environmental Assessment (NCEA)

Traditionally, toxicity testing and mechanistic research have been focused on single chemicals, though humans are actually exposed to chemical mixtures present in environmental media. Also, it is well known that children and infants may be more susceptible than adults to environmental toxicants because of their under-developed immune- and antioxidant-defense and drug metabolizing (mixed function oxidase [MFO]) systems. The widespread use of pesticides increases the likelihood of human and animal exposure to multiple pesticides either concurrently or sequentially in a lifetime. This may result in synergistic, additive, or inhibitory adverse effects mainly because one can affect the metabolism of the others.

The overall goal is to link the mechanistic (toxicodynamic) data obtained from this research to available physiologically based toxicokinetic (PBTK) models, and conduct simulations of the effects in whole animals. Such a complete biologically based toxicokinetic/toxicodynamic (TK-TD) model then can be used for conducting age-related risk assessment of exposure to chemical mixtures. The PowerPoint slides of this presentation are available at <http://intranet.ord.epa.gov:9876/development/RCT/PestToxRCT.nsf/1d97341def1e57d185256a5c006ee712/6a368f3077b2a2c985256cc60066bda0?OpenDocument>.

**March 26, 2003**—Hazard Characterization for Organic Fluorochemicals: Reproductive and Developmental Toxicity of Perfluorooctane Sulfonate in Laboratory Rodents

Author: Dr. Christopher Lau, Reproductive Toxicology Division, National Health and Environmental Effects Research Laboratory (NHEERL)

Since 1950, a host of organic fluorochemicals has increasingly been used for a variety

*Seminar Series* continued on p. 5

## Linking EPA's Science to State Performance Partnerships

This year, EPA is piloting Performance Partnership efforts that include scientists representing its Office of Research and Development (ORD). The National Environmental Performance Partnership System has improved communications between EPA and state environmental agencies by fostering more frequent discussions between state commissioners and Regional Administrators, and by beginning to break down organizational and media-program barriers in both EPA Regional Offices and state agencies. Increased joint planning and priority-setting have focused state and EPA Regional Office efforts on achieving results, increased work sharing, greater funding flex-

ibility, and reduced low-value oversight and reporting. EPA anticipates that participation by ORD in these EPA/state communications will catalyze a mutual understanding of state science needs and create opportunities for EPA to more effectively target its existing science tools and information to meet these needs. Insight gained by EPA also will guide its ongoing research and development programs (and resulting future tools). Additionally, when identifying science-related activities planned in a state for the respective agreement period, opportunities will be targeted for collaboration among the participants. Success of the pilots will determine expansion of the concept in future years. ■



## Seminar Series

*(Continued from p. 4)*

of household and industrial applications. These include the surfactant coatings for fabrics and paper products, fire-fighting foams, electronic etching baths, and insecticides. Concerns for the potential human health risks of these types of chemicals had been minimal until recent documentation of the extensive distribution and persistence in both humans and wildlife of perfluorooctane sulfonate (PFOS), the primary degradation product of a widely-used class of sulfonyl-based fluorochemicals that was primarily manufactured by 3M.

In the last 2-3 years, some new information, mostly derived from rodent and monkey studies, came to light that suggested poten-

tial systemic toxicity of PFOS. In particular, the perinatal period during development appears to be quite sensitive to the adverse effects of the fluorochemical. Because of the wide distribution of PFOS, its persistent nature and its potential toxicities, the chemical was withdrawn from the commercial market by 3M in 2000, and production was halted by the end of 2002. However, to date, the product is still readily available from other overseas manufacturers. More importantly, alternative fluorochemicals or re-formulation of PFOS with shorter carbon chain products have emerged in the commercial market. At present, little to no information is available concerning the environmental distribution and adverse health effect potentials of these substituting organic fluorochemicals.

In the past 2 years, a team of researchers from NHEERL has worked closely with

scientists at OPPT, 3M, and academia to investigate the reproductive and developmental toxicity of PFOS.

Because of its unique physicochemical properties, its pervasive distribution and its persistent nature, the organic fluorochemicals represent a novel class of environmental contaminant that is quite distinguishable from the classical persistent organic pollutants (POP). The findings should provide OPPTS with a sound scientific foundation for potential regulatory action on this class of chemicals. PowerPoint slides of this presentation are available at <http://intranet.ord.epa.gov:9876/development/RCT/PestTox/RCT.nsf/1d97341def1e57d185256a5c006ee712/5ad80ceec84b011885256cef0043c7c2?OpenDocument>.

For more information on the Seminar Series, contact Greg Susanke at 202-564-9945 or [susanke.greg@epa.gov](mailto:susanke.greg@epa.gov). ■

## Program Support

OSP's Program Support Staff has been busy lately. Over the past few months, they have reviewed and commented on eight analytic blueprints, seven of which are related to the Office of Air and Radiation's residual risk program. They also reviewed and commented on the Office of Pollution Prevention and Toxic Substance's (OPPTS) risk assessments for pentachlorophenol, chromated copper arsenate, and creosote. Staff provided scientific support in the development of fact sheets and briefs on the Clear Skies program impacts to children's health and asthma; residential vermiculite insulation; and revisions to the effluent limitation guideline program.

With Program Support Staff input, ORD concurred on the Advanced Notice of Proposed Rule-Making and interim policy on human studies, concurred without comments on the National Primary Drinking Water Regulations for the Arsenic Rule, concurred with comment on the Office of Solid Waste's Shoptowels (rags and wipes) Rule, and concurred with comment on the Office

of Water's Notice of Proposed Rule-Making Guidelines for Establishing Procedures for the Analysis of Pollutants: Procedures for Detection and Quantitation.

As a result of the Administrator's Task Force recommendations, ORD has been designated a core office in EPA's Action Development Process. This means that ORD now is required to participate in the development of most Tier 1 and 2 activities, which translates into more activity for the Program Support Staff. In the past few months, OSP staff were engaged in the following Tier 2 activities: the National Primary Drinking Water Regulations—Revisions to the Total Coliform Monitoring and Analytical Requirements and Additional Distribution System Requirements; the Revisions to the Effluent Limitation Guideline Program; the Endangered Species and Pesticide Regulation; and EPA's Small Business Strategy. We also are participating in the development of 13 new EPA Tier 3 activities.

Finally, OSP gave two additional presentations of its training course, "ORD's Role in

the Agency's Action Development Process." The sessions were held February 5, in Athens, GA, and April 2, in Ada, OK. OSP is planning to provide two or three more live sessions and is investigating options for virtual training. Keep checking the OSP intranet site, <http://intranet.epa.gov/ospintra/features/osptrain.htm>, for the latest course announcements and registration information. ■

### OSP Quarterly Contributing Writers

- Kathleen Graham
- John Miller
- Anthony Grimm
- Ruth Partridge
- Megan Grogard
- Anita Street
- David Klauder
- Greg Susanke
- Jeff Morris
- Paul Zielinski

For more information on the OSP Quarterly, contact Sarah Bauer at 202-564-3267 or [bauer.sarah@epa.gov](mailto:bauer.sarah@epa.gov)

## ORD-Regional Partnerships

The Regional Applied Research Effort (RARE) Program can be used to address any type of issue or problem that a Region identifies as a high-priority research need and for which ORD has the necessary expertise and capability to address. Each year, resources (now \$2M) are divided equally among the Regions, and each Region is responsible for nominating the particular research project(s) to be funded with these resources, which are directed to an ORD Laboratory with expertise to pursue the research. For example, several years ago, Region 7 utilized its RARE resources to fund a National Risk Management Research Laboratory (NRMRL)-sponsored project, which provided emissions data that were used by the Region to require emission controls on charcoal kilns in Missouri. In 2001 and 2002, Region 5 also collaborated with NRMRL under the RARE Program to conduct studies that showed that methyl tertiary butyl ether (MTBE) plumes at leaking underground storage tank (LUST) sites were “diving” below monitoring well networks that were designed to detect petroleum contamination near the surface, which was important data for the design of the Region’s monitoring programs at these sites.

Projects under the Regional Methods (RM) Program are limited to measurement-related problems that the Regions face when implementing Agency programs and for which near-term solutions are needed. The Regions are invited to identify their most critical methods problems, and priority is given to addressing those whose solutions will have the widest applicability and/or greatest impact nationally. Project prioritization and selection under the RM Program is done collectively by the Regional Science and Technology (RS&T) Directors, with resources (now \$600K per year) directed to the appropriate ORD Laboratory with capability to pursue the project. For example, under ORD’s RM Program, Regions requested that NHEERL develop a quantitative index of excessive sedimentation

to assess the overall condition of aquatic communities in surface waters. The states needed a practical, time-efficient tool that relies on a minimum of quantitative field measurements but delivers a clear picture of excessive sedimentation. In Region 3, this protocol has been used to investigate sedimentation problems related to streams impacted by both mountaintop/valley fill and longwall coal mining. By next year, Region 10 will have more than 1,000 sites collecting quantitative physical habitat data, including sedimentation, as part of its states’ surface water monitoring programs.

A novel Regional Research Partnership (RRP) Program is being implemented this

year to provide short-term training opportunities (3-6 months) for Regional staff to work directly with scientists at ORD Laboratories. RRP Program goals are to establish a formal professional development opportunity for Regional technical staff, foster long-term relationships between ORD and Regional staff, and focus on near-term Regional science issues. ORD will pay per diem expenses and round-trip fare to and from the ORD Laboratory, participating Laboratories will cover Laboratory and other incidental expenses, and the Regions will continue to fully fund the salaries of Regional participants in the program. ■

## Pennsylvania Department of Environmental Protection Cooperative Agreement Award

Earlier this month, ORD awarded a cooperative agreement to the Pennsylvania Department of Environmental Protection (PA DEP) to further its efforts to develop capabilities to conduct environmental forecasting at the regional and watershed scales. PA DEP has devised a new cross-media approach to planning and priority-setting—the Environmental Futures Planning Process (EFP2). For the first time, DEP is involving stakeholders in its internal planning process. By using this new approach, PA DEP hopes to measure true environmental conditions using 17 environmental indicators. Some these indicators are experimental and will require extensive development of methods of measurement and baseline information before they can be applied. In addition to the indicators, the department intends to develop models and other tools to help predict the interrelationships between individual DEP activities and environmental conditions. In part, DEP hopes to answer the question: How effective are we in carrying out our mission to protect Pennsylvania’s air, land and water?

The EFP2 was borne of a larger effort, the 21st Century Environment Commission, created by then Governor Tom Ridge. The commission recommended that DEP change its resources allocation process and place more of an emphasis on results rather than activities. Environmental Futures Planning implements that recommendation and addresses performance and connects management of the department to improving the environment.

In addition, the findings of this project could generate data and information that could be used by EPA may the potential to be applied to different regions and varying scales. DEP also believes that local land use planners may find these tools can assist them in understanding the environmental consequences of local land use policies and regional growth plans.

To read more about this project, visit <http://www.dep.state.pa.us/hosting/efp2/default.htm> or contact Anita Street at 202-332-0637 or [street.anita@epa.gov](mailto:street.anita@epa.gov) ■

*(March thru May '03)*

## **New OSP Director Named**

Assistant Administrator Paul Gilman announced with pleasure that Kevin Y. Teichman had been confirmed by the Office of Personnel Management as the Director, Office of Science Policy effective March 9th. Kevin had served as the Acting Director of OSP since July 2002. Congratulations Kevin!

Jeff Morris is serving as the Acting Associate Director for Science through September 6th. His duties include, among other responsibilities, supervising OSP's five Media Managers and working closely with the OSP Program Support and Planning Staffs. In addition to ably fulfilling these responsibilities, Jeff's experiences as OSP's Cross-Program Staff Chief are being drawn upon to promote even greater collaboration across all of OSP to seamlessly meet the needs of our many customers.

Jackie McQueen served as the Acting Cross-Program Staff Chief, and James Avery served as the Pesticides/Toxics Media Manager through May 9th.

Currently, Paul Zielinski is serving as the Acting Cross-Program Staff Chief, Mary (Mimi) Dannel is serving as the Acting Planning Staff Chief, and Mojgan (Maggie) Javdan is serving as the Water Theme Planner through August 15th.

## **Welcome to Our New Folks**

Katie Warwick joined the Air Media Team on the Program Support Staff on January 21st. Katie has a B.S. in Environmental Conservation from the University of New Hampshire. She served on a full-time internship for the Special Assistant to the Office of Air and Radiation's Senior Science Advisor and comes to us from EPA's Outstanding Scholar Program.

Rochelle Perry, although not new to OSP, competed for and was selected to serve

in an Upward Mobility Program Analyst position on the Administration and Special Projects Team effective February 9th. Congratulations Rochelle!

Ariel Iglesias joined OSP's Regional Science Program on March 10th and serves as the Region 2 Science Liaison. Since beginning his career with EPA in 1993 as a student aide in the Director's Office of the Region 2 Caribbean Environmental Protection Division, he has served as the Project Officer for the Performance Partnership Grants with the Puerto Rico Environmental Quality Board and the Virgin Islands Department of Planning & Natural Resources, served as a National Pollutant Discharge Elimination System permit writer, coordinated the water quality assessment program in Puerto Rico, and served as Special Assistant to the Acting Regional Administrator in 2001. He holds a Bachelor's degree in Chemistry and currently is pursuing an advanced degree in Physical Chemistry at the University of Puerto Rico.

Elsie Sunderland joined the Cross-Cutting Initiatives Team of the Cross Program Staff on April 7th. She is serving in a Post-Doctoral position and is supporting activities related to the Council for Regulatory Environmental Modeling (CREM), a cross-Agency institution established to promote consistency and consensus among environmental model developers and users. Elsie has a Ph.D. in Environmental Toxicology from Simon Fraser University, and a B.S. in Environmental Sciences from McGill University.

Kathryn Gallagher has been serving on a detail assignment with the Cross Program Staff working on Science Policy Council (SPC) activities since February 10th. On April 21st, Kathryn permanently joined the staff after successfully competing for a vacant position. She has a Ph.D. in Marine Science from the College of William and Mary, and a B.S. in Biology from San Francisco State University. She comes to OSP from Region 3's Chesapeake Bay Program Office.

## **Details/Training Assignments**

Jose Labiosa joined OSP on a detail starting February 10th to work with the SPC Staff. Jose comes to OSP from OSWER's Office of Solid Waste.

Troy Stuckey joined OSP on a detail assignment starting February 24th to work with our Regional team. Troy is serving as a Regional Science Correspondent and is responsible for assisting the Regional Science Liaisons (RSLs) in the promotion of science "events" or "happenings" within the Regions, and promoting ORD-Regional scientific partnerships as addressing important topics of cross-Regional interest. Troy comes to OSP from Region 6's Multimedia Planning and Permitting Section.

## **Congratulations to Award Recipients!**

Congratulations to the following OSP staff who recently received awards:

Claudia Walters received the Suzanne E. Olive National EEO Award for her efforts on the ORD Tribal Grants Team.

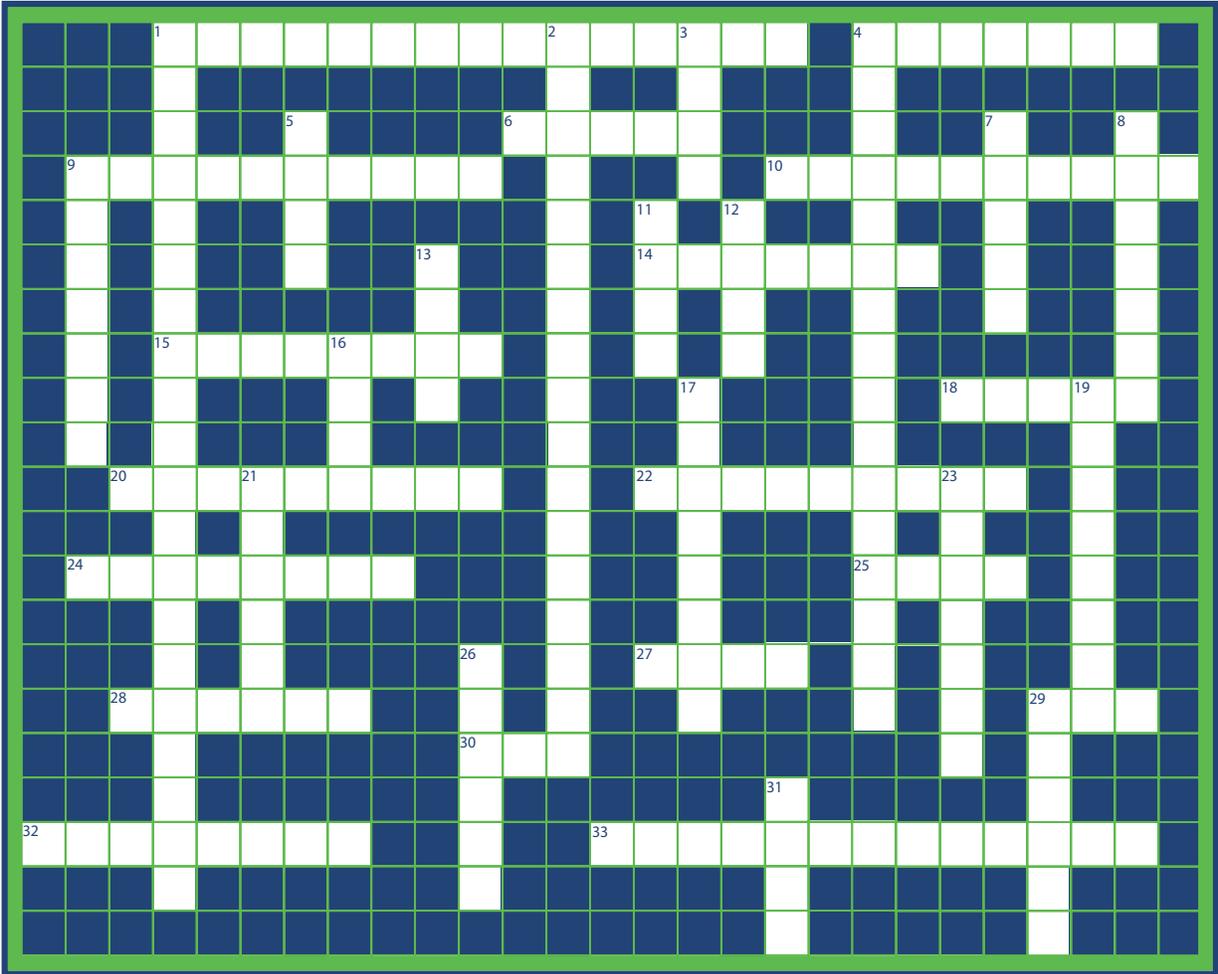
Ed Bender received a Silver Medal for his efforts on the ORD Cumulative Risk Assessment Technical Panel.

Megan Grogard and Greg Susanke received the EPA Unsung Heroes Award.

The following OSP staff received the OSP Customer Service Peer Recognition Award:

- Donna Witherspoon
- Robin Clarke
- Heather Harris
- Jon Josephs
- Members of the Diversity Action Plan Workgroup (James Avery, James Dunn, Robert Fegley, Sarah Bauer, Maryellen Radzikowski, Heather Harris, Ruth Partridge, Susan Peterson)

# Crossword Puzzle



## Across

1. Held May 5-7
4. The place or site where a plant or animal naturally lives and grows
6. Year of \_\_\_\_\_
9. \_\_\_\_\_ to Protect Human Health and the Environment
10. A mandatory program to reduce emissions of SO<sub>2</sub>, NO<sub>x</sub>, and mercury
14. Released in the Hart Senate Office Building
15. Field equipment on display at the Forum
18. \_\_\_\_\_ plants are a source of SO<sub>2</sub>, NO<sub>x</sub>, and mercury emissions
20. A community and its environment functioning as an ecological unit in nature
22. Bug killer
24. One of the "omics"
25. \_\_\_\_\_ assessment
27. NCER's extramural grants program
28. ORD Science \_\_\_\_\_ will serve as "Region-centric" gateway to ORD
29. Pesticide Exposure Study

30. Office of 7 analytic blueprints reviewed by OSP Program Support Staff
32. Chromated copper \_\_\_\_\_
33. \_\_\_\_\_ toxicology is emerging

21. Regional/ORD Science \_\_\_\_\_ II
23. Waterborne \_\_\_\_\_
26. Agricultural \_\_\_\_\_ Study
29. Pentachloro \_\_\_\_\_
31. Underground storage tank problem

## Down

1. One of the four key topics of the 2003 Science Forum
2. Paul Gilman's new role
3. Regional Applied Research Effort
4. ORD's newest Center
5. Regional Vulnerability Assessment
7. Superfund is one of its programs
8. ORD/OPPTS \_\_\_\_\_ Series
9. There were 233 at the Forum
11. OSWER's \_\_\_\_\_ vehicle was on display at the Forum
12. Awards distributed at Forum
13. Gas additive of environmental concern
16. Regional Coordination Teams
17. OSP reviewed and commented on its risk assessment
19. Pesticide \_\_\_\_\_ Study

## Solution to the February Puzzle

