

# Environmental engineering

## Protecting health and nature

by Kelly Jordan and John Napp

**E**nvironmental engineering is an interdisciplinary subject whose overriding focus is the protection of public health and the natural environment. Within this context, environmental engineering focuses on a large body of issues: hazardous and toxic substances, water supply and resource systems, pollution control, and solid and hazardous waste management.

Due to the breadth and complexity of information, only very general resources are listed in this article. Many of the Web sites listed feature links to additional environmental resources on the Internet.

### Mail lists and newsgroups

- **Airpollution-biology.** This list provides discussion among scientists whose interests are focused on the impact of air pollution on the environment. Human health effects of air pollution are not discussed. *Access:* mailbase@mailbase.ac.uk.

- **Alt.building.environment.** Discussion on this site is centered around construction and the environment. *Access:* alt.building.environment.

- **Alt.energy.renewable.** This newsgroup focuses on renewable energy. *Access:* alt.energy.renewable.

- **Aquifer.** The purpose of the Pollution and Ground Water Recharge list is to facilitate discussion and collaboration among researchers and scientists who are interested in

the elimination and prevention of ground water pollution. *Access:* listserv@vm.csata.it.

- **Biocriteria.** Participants of the Biological Criteria/Biological Assessment Listserver discuss sampling methods, reference conditions, habitat, metrics, indices, seasonal variability, and implementation in water resource management and protection programs. *Access:* listserver@unixmail.rtpnc.epa.gov.

- **Bioremediation.** This list provides a global forum for the engineering and scientific community to discuss bioremediation topics. You can also subscribe by visiting to Bio Group homepage at *Access:* biogroup.gzea.com.

- **ELI-wetlands.** The purpose of the Environmental Law Institute Wetlands Discussion List is to discuss the law, policy, science, and management of wetlands, floodplains, and coastal water resources. *Access:* majordomo@igc.org.

- **Enveng-l.** Topics of discussion on this list include waste treatment and management, water supply, air pollution control, noise and radiation protection, and related issues. *Access:* listproc@pan.cedar.univ.ac.at.

- **EPA-grants.** Managed by the Grants Administration Division of the EPA, this list is for the exchange of information within the environmental grants community. *Access:* listserv@unixmail.rtpnc.epa.gov.

- **Geo-computer-models.** This list was formed for the discussion of the use of com-

### About the authors

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puter models in environmental science/engineering. *Access:* mailbase@mailbase.ac.uk.

- **Gov.us.topic.environment.air.** This site posts news from the Federal Register on government air quality initiatives. *Access:* gov.us.topic.environment.air.

- **Groundwater.** All topics related to groundwater are discussed on this list. *Access:* majordomo@ias.champlain.edu.

- **GWM-L.** This list promotes communication between researchers and practitioners of groundwater modeling. *Access:* majordomo@gwrp.cciw.ca.

- **ISO14000.** This is a discussion list on aspects of ISO 14000 certification guidelines. *Access:* majordomo@quality.org.

- **Lakes-L.** This list provides discussion of lake management and ecology by those interested in the health of lakes and watersheds. *Access:* majordomo@badger.state.wi.us.

- **LCSEWERAGE.** Discussion on this list is on low-cost sewerage (how wastewater is conveyed to a wastewater or sewage treatment plant), not low-cost sewage treatment. *Access:* mailbase@mailbase.ac.uk.

- **NPSINFO.** This is a forum for discussion of nonpoint-source pollution issues. *Access:* listserver@unixmail.rtpnc.epa.gov.

- **Sci.bio.ecology.** This newsgroup focuses on pollution biology and ecology research. *Access:* sci.bio.ecology.

- **Sci.environment.** General environment issues are discussed on this site. *Access:* sci.environment.

- **Sci.environment.waste.** The topic of this site is waste and waste management methods. *Access:* sci.environment.waste.

- **Sci.geo.hydrology.** Surface and groundwater issues are the focus of this newsgroup. *Access:* sci.geo.hydrology.

- **Sewer-list.** The Sewage and Waste Treatment Discussion List is for people involved in the design, installation, permitting, operation and maintenance of sewers, lift stations, and publicly owned treatment works (POTWs). *Access:* listproc@mcfeeley.cc.utexas.edu.

- **SWMM-Users.** Users of the Stormwater Management Model software can discuss strategies and concerns. *Access:* listserv@uoguelph.ca.

- **Wastewater-modelling.** This list is a forum for the discussion of issues related to wastewater modeling. *Access:* majordomo@hydromantis.com

- **Water-and-san-applied-research.** Discussion and information on applied research in water supply and sanitation are provided on this list. *Access:* mailbase@mailbase.ac.uk.

- **Water-PR.** The U.S. Geological Survey (USGS) distributes its press releases through this list. *Access:* listproc@listserv.usgs.gov.

## E-journals

- **Environmental Technology.** Provides technology-oriented, science and engineering-based information inspiring environmental investment beyond regulatory mandate. *Access:* <http://www.environmentaltech.com>.

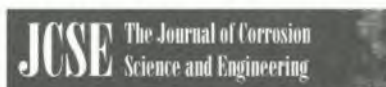
- **Solid Waste Technologies.** Reports on all aspects of managing nonhazardous residential, commercial, and light industrial wastes including: collection, hauling/transport, fleet operations, facility operations, landfill disposal, recycling, composting, and waste-to-energy. *Access:* <http://www.solidwastetech.com>.

- **Environmental Research News.** An electronic publication of the Oak Ridge National (ORNL) Environmental Sciences Division that provides summaries and highlights of the basic and applied research performed by scientists, researchers, and engineers at the ORNL Environmental Sciences Division. *Access:* <http://www.esd.ornl.gov/em/>.

- **Environmental Management.** Publishes research and opinions concerning the use and conservation of natural resources, the protection of habitats, and the control of hazards. Its field is applied ecology in the widest sense, without regard to academic discipline. *Access:* <http://link.springer.de/link/service/journals/00267/index.htm>.

- **Archives of Environmental Contamination and Toxicology.** A repository of important, full-length articles describing original experimental or theoretical research pertaining to the scientific aspects of contaminants in the environment. *Access:* <http://link.de/link/service/journals/00244/index.htm>.

- **The Journal of Corrosion Science and Engineering.** Publishes peer-reviewed articles on the corrosion of engineering materials on behalf of the International Corrosion Council



based in the United Kingdom. *Access:* <http://www.cp.umist.ac.uk/JCSE/JCSE.htm>.

• **U.S. Water News Online.** The electronic version of *U.S. Water News*. This journal keeps readers abreast of the latest news concerning water issues, such as water supply, water quality, policy and legislation, litigation and water rights around the United States. *Access:* <http://www.uswaternews.com/homepage.html>.

• **Advances in Environmental Research.** A journal for the publication of peer-reviewed, original research in the fields of environmental science, engineering, and technology. *Access:* <http://www.sfo.com/~aer/>.

• **Computers & Geosciences.** Brings readers information about databases, data structures, computer graphics, numerical methods, simulation models, statistical and expert system methods, image analysis, spatial analysis, and other topics of interest to geoscientists working with computers. The term "geo-science" is used in its broadest sense, encompassing geology, geochemistry, geo-mathematics, oceanography, environmental science, hydrology, geography, remote sensing, and geographic information systems. *Access:* <http://www.elsevier.nl/inca/publications/store/3/9/8/398.pub.htm>.

## Web sites

• **Air & Waste Management Association.** Information on the activities of the AWMA, such as staff and membership, meetings, employment, news, educational opportunities, and a listing and brief summary of their publications can be found at this site. *Access:* <http://www.awma.org>.

• **American Water Works Association.** This site contains conference information, indices of companies, products and services, information on AWWA publications, educational information, regulations, policies, reports, and job listings. AWWA is one of the largest organizations serving the water engineering field. *Access:* <http://www.awwa.org>.

• **Center for Environmental Biotechnology.** Members of the center's research teams are involved in investigating the application of biotechnological approaches for environmental bioremediation. This site contains research project summaries. *Access:* <http://deep13.ra.utk.edu/ceb/home.htm>.

• **Envirofacts Warehouse.** This EPA site provides environmental data on air quality, water, waste, and more. *Access:* [http://www.epa.gov/enviro/index\\_java.html](http://www.epa.gov/enviro/index_java.html).

• **Environmental and Engineering Geophysical Society.** EEGS is a society of geophysicists with interests in engineering and environmental science. The society seeks to foster education and research in those areas. This site features the current research of its members. *Access:* <http://www.eegs.org>.

• **Environmental Council of the States.** The Environmental Council of the States is a group of state and territorial environmental commissioners, whose mission is to work together to improve the environment of the United States through cooperative environmental management efforts. This Web site lists their major ongoing activities. *Access:* <http://www.sso.org/ecos>.

• **HazWrap.** The Hazardous Waste Remedial Actions Program (HAZWRAP), under the guidance of the DOE, works with federal, state, and local U.S. agencies to provide solutions to environmental problems presented by environmental remediation, pollution prevention, and waste minimization. Articles on land-use planning, environmental training and education, and airborne hazards are included in this site. *Access:* <http://www.ornl.gov/HAZWRAP/>.

• **Institute of Noise Control Engineers of the USA.** This site provides information on engineering solutions to environmental noise problems. It includes details on their publications and technical activities. *Access:* <http://users.aol.com/inceusa/ince.html>.

• **National Association of Environmental Professionals.** This site, created by an association for environmental planning, research, and management professionals, contains articles on timely issues such as pesticides, contamination, and an extensive library of materials. *Access:* <http://www.naep.org>.

• **National Environmental Health Association.** The NEHA is the national organization for professionals working in environmental health and protection. This site features environmental health and protection news and information on NEHA publications on topics such as hazardous waste, air quality, and home health. *Access:* <http://www.neha.org>.

• **National Ground Water Association.** Sponsored by the premier U.S. organization for ground water professionals, this site con-



tains information on ground water courses and conferences, tables of contents for several journals, member-

ship data, reports, and a catalog of the association's books. *Access:* <http://www.h2o-ngwa.org>.

• **National Library for the Environment Online.** This site contains a large body of environment-related information: daily environment and congressional news, upcoming conferences, education resources, and congressional research service reports. *Access:* <http://www.cnie.org/nle>.

• **National Oceanic and Atmospheric Administration.** The NOAA site contains national weather forecasts, statistics, searchable databases, an agency directory, and links to related agencies and sites. The National Weather Service can also be accessed at this site. *Access:* <http://www.noaa.gov/>.

• **Office of the Federal Environmental Executive.** The Office of the Federal Environment Executive assists in the environmental efforts of the federal community. At this site, information can be found on federal environmental initiatives, best practices, a newsletter, and events. *Access:* <http://www.ofee.gov>.

• **Pollution Online.** Information for vendors and professionals in pollution equipment and pollution control industries can be found here. Even though a subscription is necessary to access all of the resources, a great wealth of material is available at this site. News, product information, links to related Web sites, and business information are among the features. *Access:* <http://www.pollutiononline.com>.

• **PureZone.** PureZone is a site devoted to indoor air quality. It features a discussion forum moderated by industry experts on hot topics such as sensors and transducers technology. *Access:* <http://www.purezone.com>.

• **Society of Environmental Toxicology and Chemistry.** SETAC is a professional society for those engaged in the study of environmental issues, management and conservation of natural resources, environmental education, and environmental research and development. Their site provides information on regional activities (national and

international) and publications. *Access:* <http://www.setac.org>.

• **Soil and Water Conservation Society.** This site is for natural resource management professionals. It features conservation news, information on publications, and links to related sites on soil and water conservation. *Access:* <http://www.swcs.org>.

• **Solstice: Online Source for Sustainable Energy Information from CREST.** This site is the Internet information service of the Center for Renewable Energy and Sustainable Technology (CREST). It contains case studies and documents on renewable and alternative energy, energy efficiency, and sustainable living. *Access:* <http://solstice.crest.org/index.shtml>.

**TechKnow.** TechKnow is a database that lists "environmentally friendly" remediation and ozone-depleting substance management technologies, their cost, and contact information for referral. *Access:* <http://www.techknow.org>.

• **Toxics Release Inventory.** TRI is published by USEPA and is a valuable source of information on toxic substances that are currently in use. It is used by the government and industry to notify the public and to aid in protecting the environment from these substances. *Access:* <http://www.epa.gov/opptintr/tri/>.

• **United Nations Environment Programme.** UNEP was created to provide leadership and to encourage the partnership of countries in caring for the environment. This site features the programme's publications and reports, and information on legislation and current issues. There is also a link to the United Nations System Wide Earthwatch (<http://www.unep.ch/earthw.html>), which provides information on global news, emerging environmental problems, global environmental assessments, and climate data. *Access:* <http://www.unep.org>.

• **United States Environmental Protection Agency.** A great deal of the USEPA's information is available at this site. Research summaries, fact sheets, software, congressional testimony, summaries of environmental bills, and *Federal Register* articles pertaining to the environment can all be found here. A search feature aids in finding information

*(continued on page 842)*

few did). Greenblatt's presentation and other resources are available at <http://carbon.cudenver.edu/public/library/libq/diversity/>.

### Looking ahead

Conference participants suggested in their evaluations that future conferences focus on practical implementation strategies to improve diversity in libraries, best practices, mentoring, how to get diversity committees started, training issues, behavior modification techniques, and networking to strengthen existing diversity programs. PSU organizers updated the conference Web site <http://www.libraries.psu.edu/divers/conf/> to include abstracts, session papers, Powerpoint presentations, and links to additional diversity Web sites. PSU Libraries is hosting a diversity chat room linked to the Web site to continue discussions.

Attendees strongly recommended that ARL coordinate a biennial diversity in libraries conference that would rotate through different regions across the country. By keeping the momentum going with open communication and sharing best practices, librarians can meet the challenge to change. ■

*(Internet Resources continued from page 837)*

at this large site. Within this site the various agency divisions have their own homepages. This site also includes state and local EPA contacts. Access: <http://www.epa.gov/>.

• **U.S. Geological Survey.** A wealth of information can be found here on the earth sciences and the environment. The environment section of the site features a large collection of resources on USGS studies on policy, global change, energy and the environment, ecosystems and management, and anthropogenic and natural contaminants. Access: <http://www.usgs.gov>.

• **USAID Environmental and Natural Resources.** USAID (United States Agency for International Development) is an independent agency that provides economic development and humanitarian assistance to developing countries. Part of this effort is to encourage countries to work toward environmental protection. This Web site provides detailed information on USAID's environment-related projects, education efforts, and publications. Access: <http://www.info.usaid.gov/environment>. ■

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