First annual Go Beyond Awards celebrate achievements in lab sustainability

The International Institute for Sustainable Laboratories (I2 SL), in partnership with R&D Magazine and Laboratory Design newsletter, is pleased to announce the first annual Go Beyond Award winners. This award program honors individuals, organizations, projects and laboratory manufacturers that "go beyond" the status quo to minimize the environmental impacts of laboratory and other high-technology facilities and laboratory equipment.

Award winners have shown their commitment to the goals of Laboratories for the 21st Century (Labs21), and that excellence in sustainability means going beyond the laboratory, beyond the United States, and beyond being "green" when considering building projects, products and services. Awards were presented at the Labs21 2008 annual conference on Sept. 18 in San Jose, Calif.

The first annual Go Beyond Awards recognized the following outstanding individuals and organizations.

Individual award Karl Brown, of the California Institute for Energy and Environment, Univ. of California (UC), is an advocate of laboratory sustainability at UC and California State Univ., establishing models for universities and laboratories across the country. He is responsible for the requirement that all UC laboratory buildings meet the Labs21 Environmental Performance Criteria (EPC).

Brown co-developed the energy efficiency partnership between UC, California State Univ., and the four investor-owned utilities in California, and ensured that the program included an educational component. Since 2004, the partnership has organized nine Labs21 workshops for 300 staff from 33 campuses.

Brown also developed the "Monitoring-Based Commissioning" program of the UC/CSU/IOU Energy Efficiency Partnership: a pioneering approach to using energy-efficiency incentive funding to install ongoing sub-metering and monitoring systems to ensure continued high performance of buildings, including many labs. Since 2004, the partnership has funded more than 150 energy-efficiency projects in the UC system, reducing the university's annual energy consumption by moe than 4.8 million therms and nearly 70 million kWh.

Receiving an Honorable Mention award in the individual category was Bill Wise, of the U.S. Environmental Protection Agency. Wise played an integral role in planning, implementing and completing the first federal energy savings performance contract (ESPC). The energy reductions achieved by the first ESPC at several EPA facilities provided the inspiration to create the Labs21 Program.

A second Honorable Mention was presented to Peter Rumsey, Rumsey Engineers. Rumsey has been responsible for many innovations in energy-efficient design and analysis and has pioneered the use of a variety of system types in U.S. laboratories in the past decade. He has been an advocate of chilled beam systems, efficient outside-air systems that eliminate reheat, radiant cooling systems, and low-pressure-drop design. Rumsey is a loyal supporter of the Labs21 pro-

gram and promotes the Labs21 goals in his column on GreenerComputing.com, in articles for a variety of other publications, and in presentations at industry events and seminars, including the Labs21 Annual Conference.

Organizational award The Laboratory Research and Technical Staff (LabRATS) at the Univ. of California at Santa Barbara (UCSB) analyzes and promotes ways researchers can conserve energy and resources in laboratories. The staff comprehensively evaluates all laboratory resources used and the behavior of researchers, administration and support staff. Each laboratory assessment includes a presentation highlighting best practices for saving energy and resources and opportunities for additional conservation. The staff has evaluated at least 35 laboratories in two years. LabRATS is dedicated to promoting Labs21 principles throughout UCSB.

LabRATS'promotional programs include information on hood deactivation and sash closure, mercury thermometer exchange, green chemistry, zone lighting, water conservation and surplus equipment distribution.

The Univ. of California received an Honorable Mention in the organizational category. The university has adopted a strong, student-driven and staff-supported sustainability policy, which requires that all laboratory new construction projects reference Labs21 principles and use the Labs21 EPC as their scorecard. UC has exemplary new laboratory designs on many campuses that are LEED Gold or better, with at least two LEED Platinum buildings. UC continues to promote the Labs21 principles by teaching introductory and advanced concept workshops and has, since 2004, educated 300 UC and California State Univ. staff.

The Northern Arizona University Applied Research and Development Facility earned a LEED Platinum certification, receiving 60 points out of a possible 69. Architect: Photo: Timothy Hursley.

Project award The Northern Arizona University Applied Research and Development Facility, Flagstaff, earned a LEED Platinum certification, receiving 60 points out of a possible 69, and thus becoming only one of three buildings in the world that have earned at least 60 points. The facility's hallmark accomplishment is due to an awareness of and attention to issues centered on energy and water. Designers used the Labs21 EPC to develop the facility and earn its Platinum rating.

The 65,000-ft2 ARD facility houses BSL-2 and -3 lab areas, as well as offices and support spaces. Notable aspects of the design include application of low-pressure air supply, energy recovery and daylighting. A high-performance envelope, an application of adaptive comfort theory, and reduced installed heat gain work together to mitigate building load. The envelope incorporates southern orientation, extra insulation, highperformance spectrally sensitive triple-pane glazing, and shaded windows. Passive strategies focus on appropriate orientation, solar control, thermal mass with night flushing, daylighting and natural ventilation.

Efficient active strategies include low-pressure air distribution, demand controlled ventilation, condensing boilers, displacement supply, radiant cool/warm floors, evaporative chilling and daylight harvesting. Energy used in the lab and office areas is recovered through an evaporatively cooled air-to-air heat pipe and, in non-lab areas, recirculation. Site generation technologies include the incorporation of 160 kW of photovoltaic power and 600 ft2 of solar hot water.

The design team for the project included Hopkins Architects of the United Kingdom; Ove Arup Partners, London/San Francisco; and Burns Wald-Hopkins Architects, Tucson.

The Science and Engineering I building at the Univ. of California-Merced was recognized with an Honorable Mention in the project category. The building is a 205,000-ft2 academic lab targeting a minimum LEED Silver rating, and estimating performance beyond the 80% benchmark goal. Among its innovative design features are a four-pipe thermal distribution system to minimize simultaneous heating and cooling; the "maximum likely load" method for HVAC system sizing; and benchmark performance, target-based design. UC-Merced is a Labs21 Pilot Partner, and Labs21 team assistance was employed during facility design.

The design team included EHDD Architecture, San Francisco, and Ove Arup Partners.

Equipment manufacturer award Lab Crafters Inc. manufactures high-performance, high-efficiency fume hoods, which are designed to consume less conditioned laboratory air, have low operating airflow requirements, save on operating costs, and provide a safer operating environment than traditional fume hoods.

To educate those developing or maintaining high-tech facilities, Labs Crafters developed "Fume Hoods 101," a presentation that explains the environmental impact of traditional fume hoods and explains how high-performance fume hoods are environmentally responsible alternatives. Labs Crafters ensures that its manufacturing processes and office protocols incorporate the Labs21 principles.

To learn more about the first annual Go Beyond Award winners, visit the I2 SL Web site at www.i2sl.org/labs21/conference/awards.html . Applications for the 2009 Go Beyond Awards will be available in the spring.

The Science and Engineering I building at the Univ. of California-Merced received an Honorable Mention; Labs21 assistance was employed during facility design. Photo courtesy of UC-Merced.