Living Well: Science Centers and Public Health

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The Toronto Declaration, adopted in June 2008 by the Fifth Science Centre World Congress, established public health as a priority for science centers, citing the United Nations Millennium Development Goals for child and maternal health and disease prevention. In this issue, we explore the efforts of science centers worldwide to improve health in their communities, through exhibitions, outreach programs, partnerships, and even food service operations.

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It is appropriate that the March/April 2009 issue of ASTC Dimensions focuses on public health. April 7 is World Health Day, a day meant to raise the awareness of global health issues and one that commemorates the founding of the World Health Organization in 1948. As an epidemiologist who is immersed in the work of public health daily, I view the term “public health” as the endeavor to ensure the good health of people and their communities by the prevention of disease and the promotion of healthy behaviors. This effort relies upon the cooperative work of scientists and health care providers to detect, describe, and measure issues of health consequence. Public health also requires the collaborative efforts of these specialists with policy makers and educators to translate data into sustained improvements for people and communities.

Education is paramount to the success of public health. However, to truly improve the health of our communities, the communication and acquisition of knowledge must be active and must inspire individuals to change a behavior or advocate for societal progress. It is tremendously difficult to change established health behaviors. Still, education received from multiple sources, particularly if there is an active component to this education, is an important instrument for change.

Science centers are particularly well suited for this type of active teaching and learning. As such, science centers throughout the world can play a major role in educating the public about health issues. Centers provide the opportunity for hands-on, in-depth exploration of a topic, including the chance for discussions with peers, family members, or teachers. Through the active learning that takes place in science centers, people can gain a more profound understanding of an issue than would be acquired from passive learning, such as reading a chapter in a textbook.

A couple of years ago, I had the pleasure of serving as a project advisor for the exhibition Disease Detectives at the Science Museum of Minnesota (SMM), St. Paul. (See “Spotlights,” page 18.) This exhibition puts the visitor in the role of evaluating a patient; exploring epidemiological clues; interpreting laboratory work; arriving at a diagnosis; and learning about the cause, transmission, and prevention of a number of important infectious diseases, such as Shiga toxin–producing E. coli, influenza, and malaria. My role was to advise on the medical and scientific content of the exhibition.

At the start, I had no concept of how SMM was going to take complex and somewhat dry information and translate it into a fun and engaging exhibition. It was quite astounding to experience the final product and observe the fun visitors had listening to lung sounds, using pulsed-field patterns to compare the molecular fingerprints of microbes, and evaluating the importance of protective measures from vectors such as mosquitoes. The hands-on activities made learning about disease and prevention much more appealing than the usual methods of public health education—such as informational brochures, web sites, or talks—increasing the likelihood that people would retain the information. Visitors spent time carefully going through the exhibition; reading the materials; and discussing them with family members, friends, and colleagues. Watching guests from ages 3 to 83, I had the strong sense that the exhibition provided fertile ground for budding epidemiologists, health care providers, scientists, and health advocates.

It is clear that science centers are key partners in the promotion of public health. Centers have the opportunity to promote an understanding of health issues by actively engaging one visitor at a time. To quote Margaret Mead, “Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it’s the only thing that ever has.” As a public health professional and advocate, I am truly grateful for your work.

Ruth Lynfield is Minnesota’s state epidemiologist and medical director for infectious disease.
Taking on Obesity in the Deep South

By Eleanor Kulin

Pork fat rules,” the celebrity chef Emeril Lagasse extols. And nowhere is that as true as in the Deep South of the United States, where the Gulf Coast Exploreum Science Center is located.

The Exploreum opened in Mobile, Alabama, in 1998 and serves Gulf Coast communities in south Alabama, the Florida Panhandle, and south Mississippi—one of the nation’s “heaviest” regions. In 2007, the Centers for Disease Control and Prevention ranked Alabama second in the country for adult obesity, while Mississippi, just 30 miles west of Mobile, topped the list. Not surprisingly, diabetes, stroke, and heart attack have been leading causes of death and illness in the region for years. Sadly, obesity rates are rising among area youth and children.

In 2004, within this regional health context, the Exploreum identified the need to add public health literacy to its original mission of promoting science literacy. Because 60 percent of our visitors are under age 12, we are in a good position to encourage children in particular to form healthy habits that will last a lifetime. Area health care providers, advocacy groups, and educators recommended that the Exploreum help citizens obtain, interpret, and apply basic health, fitness, and diet information. The Mobile County public health officer concluded that an Exploreum gallery on health could literally “save lives.” That’s a pretty big incentive to make it happen.

The concept plan

Because the Exploreum operates with a small staff of 17 professionals and there was widespread consensus on the project’s focus, we were able to develop an internal concept plan in less than six months. We quickly agreed on the educational framework for the gallery and selected My BodyWorks as the gallery name (www.exploreum.com/exhibits.html).

The gallery goals and objectives were identified:

1. Educate area adults and children about how the human body works.
2. Explain how lifestyle choices can prevent or manage obesity and associated diseases and lead to improved quality of life.
3. Motivate the adoption of personal lifelong habits, including sensible eating and daily exercise.

In addition, three theme areas were identified:

1. Know Your Body focuses mainly on the heart and circulatory system. In this area, visitors learn how the heart works and what can go wrong when blood flow through arteries is impeded. They can use hand pumps to match their hearts’ pumping power, listen to their heartbeats, and learn about healthy blood pressure.

2. Eat Smart teaches visitors about portion control and making healthy food choices. Touch-screen technology lets visitors rate their preferred daily menu for variety and calories. Also, they can shop in a virtual supermarket, comparing nutrition labels from 65 real products.

3. Be Active promotes getting up off the couch. Exhibits test muscle and joint flexibility, endurance, and strength, and link calories consumed to calories burned during exercise.

Finally, staff agreed that the gallery would need a separate space, the Bio-Lab, where education programs—from cooking demonstrations to presentations by health specialists—would be offered daily and changed bimonthly. This would keep the Exploreum’s offerings fresh for repeat visitors.

Searching for support

The next step was to line up sponsors and donors, always a daunting task, particularly in an economically challenged market. The plan languished as solicitations met with little success. Then, in 2006, the Exploreum learned that the Infirmary Health System, the area’s leading health care provider, had identified their own priority to help build a locally trained and scientifically literate workforce.
Creating a Smart Café

By Bob Levine

Like most southern U.S. states, Alabama is facing a health crisis tied to its citizens’ eating habits. Recent data from the Centers for Disease Control and Prevention place Alabama second in the nation for adult obesity rates and fifth for the percentage of adults diagnosed with diabetes. The McWane Science Center, Birmingham, Alabama, has made it a cornerstone of its mission to create public awareness of these issues through its new Smart Café.

Currently, McWane has a relatively successful, in-house café that serves what some would consider the staples of child-friendly food in the United States: hamburgers, pizza, hot dogs, and the ever-ubiquitous chicken tenders. The café was designed to provide fast, basic food to children and parents, but attention was never paid to educational content relating to nutrition. More importantly, there are very few truly healthy options on the menu.

The Smart Café renovations, which are set to be completed in March 2009, have been broken out into three components. The first component, which is the crux of the project, will present a new, healthier menu, with far greater variety than what is currently available. The second component seeks to improve the logistics of the café through more efficient use of the tray pick-up, trash/recycling, seating, and cashier areas. The third component is education. Specific information like caloric content, as well as more general information like the importance of a balanced diet, will be made available to visitors through colorful graphics, engaging hand-outs, and interactive programming. To develop this content, the Smart Café team (consisting of staff from the food service, operations, education, and exhibits departments) is working with partners including specialists from the Institute for America’s Health and nutrition and diabetes experts from local universities.

Because the Exploreum had already recognized its role in encouraging area youth to pursue careers in science and engineering, a workforce development angle was not hard to add to the concept plan. Within months, the Infirmary had committed to support the project with funding from its own foundation and had promised to solicit other partners. A fourth theme area—the Virtual Surgery—was added to provide visitors with hands-on, virtual surgical experiences and to focus on careers in medicine. Visitors can perform virtual heart bypass or knee replacement surgery, watch a video of an actual heart operation, or “meet” 12 Infirmary staff members to learn about careers in health care.

Much of 2007 was spent fleshing out the gallery storyboard and identifying specific activities and exhibits. A group of Exploreum and Infirmary Foundation Board members and staff toured existing science center health galleries for inspiration and to give Infirmary representatives a feel for what science centers can accomplish.

Continued on page 16
What’s the Big Deal?
An Exhibition Navigates France’s Changing Sexuality Landscape

By Maud Gouy

The traveling exhibition Zizi sexuel (Sex—Wot’s the big deal?; www.cite-sciences.fr/english/ala_cite/exhibitions/sex-wot-s-the-big-deal) opened in October 2007 at La Cité des Sciences et de l’Industrie (CSI) in Paris, just as a survey commissioned by France’s National Institute for Demographic Studies (INED) and the National Institute of Health and Medical Research (INSERM) was published. Entitled The Context of Sexuality in France, this survey shed new light on sexual relations and practices, and helped guide policy on the prevention of sexually transmitted diseases and HIV/AIDS. The survey revealed a declining trend in taboos and inhibitions.

However, in French society, values systems continue to collide more violently than one might imagine. In some neighborhoods, the display of a sexy advertising poster can give rise to outrage. “[The belief] that everyone is liberated is an illusion,” reported the family planning coordinator for the Ile-de-France region.

Developing the exhibition

It was against this somewhat paradoxical backdrop that the CSI decided to present an exhibition on love and sexuality for 9- to 14-year-olds. It aimed to take

on this “taboo” subject without arousing the ire of parents or teachers, upsetting visitors, or triggering protests from religious or reactionary groups. In placing love center stage, the exhibition reminds us that relationships are the most important aspect of sexuality for us as humans.

To defend its initial messages, the CSI’s project team chose to liaise with classes of schoolchildren ages 9–10 and 13–14. The team worked on identifying children’s expectations while trying out illustrations and exhibit prototypes. Based on the bookGuide du zizi sexuel by Zep and Hélène Bruller, the exhibition uses humor and cartoon images to help children feel comfortable.

In partnership with public health personnel, sex therapists, and national education authorities, the CSI developed its messages and considered questions such as: What can be said to children who think they know everything about sexuality? What are the limits? The team decided to include discussions about homosexuality, masturbation, and sexually transmitted diseases, but not about abortion orellation. They also met with secular and religious family groups to inform them of the content and dispel any concerns.

The aim of the exhibition was to promote values founded on the principles of equality, including between the sexes. The team chose to leave out religious considerations and to give a recap of legal provisions. For instance, in France, emergency contraception can be given by high school nurses. This exhibition also provides an opportunity to warn children about incest and pedophilia, and to highlight the fact that sex education is in no way an incentive to engage in the act itself. Surveys show that children who have benefited from sex education tend to have their first sexual experience later in life, with a greater sense of responsibility and a desire for emotional relationships of real quality.

Positive results

As of December 2008, Sex—Wot’s the big deal? has welcomed 350,000 visitors and has enjoyed extensive media coverage. The subject generates interest, crystallizes the issues, and shows every sign of meeting visitors’ expectations. Young visitors react positively regardless of age, sex, or time spent in the exhibition.

We distinguished three types of visits:

1. Educational visits, where young people attend with parents, teachers, and facilitators as part of an educational project.
2. Fun visits, where the focus is more on playing than learning.
3. Youth visits, where young people are the instigators of the outing, persuading adults to accompany them.

In conclusion, Sex—Wot’s the big deal? contributes to the institutional and social recognition of the existence of young people’s sexuality. This recognition helps preteens take ownership of their bodies, which is essential in the adoption of protective behaviors and the use of contraception.

Maud Gouy is curator of the exhibition

Sex—Wot’s the big deal? at La Cité des Sciences et de l’Industrie, Paris, France.
North Star Guides the Way

By Chris Cable and SaVina Sandoval Haywood

The Imaginarium in Anchorage, Alaska, is working to increase the number of Alaskans from educationally and/or economically disadvantaged backgrounds, particularly Alaska Natives, who pursue science and health care careers. We also seek to inform Alaskans about health science research to help them make healthy lifestyle choices and understand the benefits of clinical research. To this end, we have launched North Star (New Opportunities—Research and Teaching in High School Through Alaska Researchers) with funding from the Science Education Partnership Award (SEPA) from the National Center for Research Resources at the National Institutes of Health, and through partnerships with the University of Alaska Anchorage (UAA) and others.

The state of Alaska

Our aims are especially important in Alaska, a vast state with a population of less than 700,000, yet equal in size to the combined areas of Texas, California, New York, Pennsylvania, Florida, Massachusetts, Virginia, and Vermont. Alaska is 56 times bigger than Maryland but has half as many road miles. Many rural villages have a few dozen or a few hundred residents, and often only have homes, a school, government and/or tribal offices, a store that doubles as a post office, and an airstrip. Health challenges in rural Alaska include higher than normal rates of teen suicide, teen pregnancy, substance abuse, tuberculosis, obesity, diabetes, fetal alcohol syndrome, sexually transmitted diseases, and accidental deaths. Alaska’s size, lack of road access to most communities, natural barriers, and extremely harsh weather have limited the state’s ability to educate its citizens, provide adequate health care, or even provide public water and sewer systems to many residents.

Alaska relies heavily on outsiders to fill its need for most professionals. Unfortunately, those new to the state may not appreciate Alaska’s extreme conditions or remoteness. Many leave the state after serving only a short time. We recognize that Alaska must identify, recruit, educate, and retain its own youth to become tomorrow’s teachers, scientists, and health professionals.

The North Star project

The North Star project began with town meetings in each of Alaska’s five geocultural regions. Village elders, parents, students, educators, and health care providers were invited to weigh in on regional health priorities. We identified some common priorities within all regions: general health, cardiac health, disease and the immune system, and environmental health. Also, early on, we established a statewide advisory committee to guide the North Star project team on program content, scientific merit, and cultural relevancy.

Ultimately, our plan included enhancing an existing, six-week, premedical summer institute called U-DOC, offered by UAA for rural, predominantly indigenous Alaskans in grades 11 and 12. U-DOC’s goal is to pipeline students into college and science, technology, engineering, and mathematics (STEM) careers. Under North Star, the students now have year-round support from mentors in biomedical research and the health professions, as well as from Imaginarium staff. With this support, the students create Health Research Projects that they share on the North Star web site (www.northstarak.org) and with their local communities. Many of the Health Research Projects focus on important health issues in the students’ communities, such as substance abuse, mental health, and diabetes. The presentations help local residents better understand the clinical research process and the importance of making healthy choices. The best of these presentations are also put on public display at the Imaginarium.

North Star has also established the Innovative Student Science Guide program at the Imaginarium. Through this program, Anchorage teens perform science demonstrations and assist with summer camps, public programs, and animal care. We have also provided professional development for educators in the areas of STEM education.

Now in its third year, North Star is enjoying success. Every member of U-DOC’s graduating class of 2008 has enrolled in college, and most are pursuing science degrees. We hope to see a number of them move on to graduate school and remain in or return to Alaska to become tomorrow’s educators, research scientists, and health care providers.

Chris Cable is executive director of the Imaginarium, Anchorage, Alaska, and North Star principal investigator. SaVina Sandoval Haywood is North Star project manager at the Imaginarium.
Health Messages at Science Centers in South Africa: What Is Possible?

By Lorenzo Raynard

South Africa has approximately 52 centers communicating science, of which about 15 are fully recognized science centers across eight municipal districts. Their positions are shown by the dots on the map at right. While the centers vary in their level of infrastructure, their overall primary focus is to provide an “edutainment” destination—one that allows visitors to interactively engage with science in an entertaining way. They aim to support formal education and facilitate public engagement with science, engineering, and technology.

As the identity of science centers has developed, as a whole and individually, science centers have taken on secondary functions such as promoting career education, contributing to tourist attractions, acting as a media resource, conducting research, and providing messages that influence social change. The latter includes health messages that impact awareness, attitudes, and behaviors related to the health status of surrounding communities. Although South African science centers have not yet fully utilized opportunities to communicate health messages, they have the potential to make an important contribution to public health.

Science centers and behavioral change

Communication to effect behavioral change is not entirely new to the science center fraternity in South Africa. One such example is the message that follows a guided tour of the visitors center hosted by the Southern African Large Telescope (SALT, www.salt.ac.za), Sutherland, Northern Cape. After displaying the grand enormity of the discovered components of the universe, SALT aims to instill a greater sense of respect among visitors for the planet Earth and the need to conserve it.

In a desperate attempt to address the scourge of HIV/AIDS in southern Africa, many methods have been explored to communicate health science information that would effect attitude, behavioral, and social change in a way that is sensitive to human rights and that is creative, innovative, and efficient. These efforts have led to the development of communication benchmarks in the dissemination of health messages, which are being duplicated globally.

In one example, the Iziko Museums (www.iziko.org.za) of Cape Town, Western Cape, implement various health programs with their staff. Apart from ensuring overall wellness of staff, these programs assist the staff in understanding the health-related issues affecting the clients that visit the science centers, thereby providing an added method of contextualizing the presentation of scientific information.

Another such example would be health-related programs offered by the MTN Science Centre (www.mtnsciencecentre.org.za) in Cape Town. Valerie Corfield, researcher in the areas of molecular and cell biology, assists the science center by developing models, posters, and workshops that “translate” the scientific content both to evoke interest among young learners to follow careers and conduct research in this area, and to raise awareness of health interventions. She developed a number of workshops, which include DNA Detectives—What’s in your Genes? Corfield identified the need to explain HIV/AIDS to the layman and teamed up with medical education advisor Francois Cilliers to develop HIV Comes to the Party. Other workshops followed, namely, Food for Thought, Enzyme Antics, The Trouble with TB, and more recently, TIK’S TRICKS.

All these workshops are scientifically accurate, but stripped of scientific jargon.
The different stories are told in metaphors and analogies that can be adapted for all audiences, from children to adults, and have been designed to promote dialogue and discussion of societal issues raised. With a passion for science, Corfield believes that it is incumbent on institutions to translate their scientific findings and make them fun and accessible to all.

The MTN Science Centre also partners with local nongovernmental organizations and the Medical Research Council (MRC) to run workshops that unpack the reasons for drug abuse and the potential long-term effects on the body. Tik, or methamphetamine, is responsible for the fastest addiction rates on the Cape Flats, Western Cape. “Nowhere else in the world has tik taken off in the way we are finding in these specific communities,” said Andreas Pluddemann, senior scientist at the MRC’s Alcohol and Drug Abuse Research Group. In addition to workshops, a permanent exhibition in the science center profiles the scientific information in detail.

Also, the MTN Science Centre exhibition on tuberculosis (TB) profiles the human respiratory system and the topic of vaccinations, thus supporting the formal education curriculum. The exhibition also discusses the incidence of TB, areas in South Africa at high risk, methods of prevention, diagnosis, treatments, and social stigma.

Engaging more deeply

There is potential for deeper engagement with public health among South African science centers. By collaborating with outside organizations, science centers can more fully integrate public health into their core functions.

For example, science centers can collaborate with knowledge-generating organizations. Experts from research facilities can ensure that the most current scientific findings are displayed and that the information is relevant to the science center’s typical audience. Science centers could collaborate with organizations such as South African National Biodiversity Institute, which uses research on the impact of climate change on hydrology and water resources in South Africa to raise awareness of the need to conserve water. Their related studies on malaria and schistosomiasis, both water-related parasitic diseases, could be profiled in science centers in high-risk areas, with related prevention information.

Organizations specializing in health science communication could also collaborate with science centers. Potential partners include Love Life (www.lovelife.org.za), South Africa’s national HIV prevention program for youth, and Mindset Network (www.mindset.co.za), which provides education on health issues, including HIV/AIDS. Partnering with organizations specializing in the development of health science communication allows the science center to benefit from years of experience and already developed benchmarks.

By translating scientific research into information that promotes the improvement of health and the quality of life, science centers open themselves to more funding opportunities from grant agencies and research organizations. For example, the MTN Science Centre and Corfield have recently submitted a funding proposal to the U.K.’s Wellcome Trust to train science center facilitators on communicating health science, specifically on DNA (DNA testing and genetic diseases), TB, and HIV/AIDS.

Science centers in South Africa successfully target great numbers of youth and other members of the society by providing their primary service as a science education venue. This refined model, combined with the expertise offered by health science communication specialists and knowledge-generating and research organizations, may allow science centers to further add value to their wealth of well-presented scientific information. Further detailed evaluations should be done on science center health science communication activities in South Africa, and workshops should be conducted to help centers further explore this potential service to their communities.

Lorenzo Raynard is manager of science communication at the South African Agency for Science and Technology Advancement (SAASTA), Pretoria.

The Sixth Science Centre World Congress will be held in Cape Town, South Africa, September 4–8, 2011.

For more information on related research and issues, see the following sources.


Rising to the Challenge:
Public Health in Latin American Science Centers

By Alejandra León-Castellá

Public health and agricultural extension programs have preceded the science center movement by centuries with efforts to improve practices, keep the population healthier, and increase yields.

In contrast to their efforts—mainly focused on practical elements instead of the science behind them—the science popularization programs in Latin America have come to work on enhancing the knowledge base within the general population. These programs engage the public with critical issues (such as HIV/AIDS), show the multidisciplinary array of connections that surround a single subject (such as water), improve access for people with different disabilities and comprehension levels, communicate through networking and multimedia, and propose creative ways to enable discussion and the exchange of ideas.

The Latin American Network for the Popularization of Science and Technology—widely known as RedPop (www.redpop.org)—was established in 1990 in Rio de Janeiro, Brazil, with the support of UNESCO’s Science, Technology, and Society Program. RedPop is different from other regional science center networks in that it comprises not only science centers and museums, but also informal education and science communication programs in the region. RedPop is a multilingual network that spans from Mexico to the tip of South America, including the Caribbean, with some associate members outside this region. In 2008, RedPop had members in 11 countries. RedPop supports its members through an e-bulletin (www.cientec.or.cr/mhonarc/redpop/doc/index.shtml), a biannual meeting (www.xireunionredpop.com), research groups, and small courses. These networking opportunities allow members to communicate about a variety of issues, including social issues like public health.

Health challenges in Latin America—as in other parts of the world—are concentrated in poor, overpopulated areas and consequently degraded environments. Respiratory ailments affect some countries severely, and cardiovascular disease, obesity, and malnutrition affect certain regions. Balanced nutrition and healthy sexuality are common issues in urban settings, while dengue, yellow fever, and malaria persist in tropical regions. Some recurring illnesses like pertussis (whooping cough) and tuberculosis require more research and new treatments. The photographs and stories on these two pages illustrate how science centers and museums across Latin America are working to address these and other health challenges.

Alejandra León-Castellá is executive director of RedPop. She can be reached at leonale@racsa.co.cr or leonale@yahoo.com.

To commemorate World Population Day 2008, Museo de Ciencia y Tecnología in Guatemala City (www.funtec-guatemala.org) joined efforts with the National Planning Office (SEGEPLAN) in organizing a month of educational activities, lectures, workshops, and age-appropriate discussion groups for ages 5 to adult. Themes included world population and overpopulation, gender equity, family planning, reproductive responsibilities and rights, biology, and HIV/AIDS. In the picture at right, children are listening to a lecture about population. The museum also sought to raise awareness on the subject with an exhibition of 48 photographs by well-known national and international photographers. The exhibition also included 14 posters with images and personal stories from around the world. A 90-page book on the subject and diverse handouts were printed and distributed to visitors. More than 3,000 students visited the exhibition. The project was sponsored by the United Nations Educational Program.

—Alcira García-Vassaux, executive director

Photo courtesy Julian Amorin
Five years ago, El Museo de los Niños de Caracas in Venezuela (www.maravillosarealidad.com) opened the exhibition La emoción de vivir… sin drogas (The excitement of living… without drugs). Visitors cycle through seven rooms to learn about how drugs have been used by humanity from ancient times to the present, the different types of drugs, and the social consequences of drug use and drug trafficking. In the above picture, a guide teaches a group of children about the effects of different types of drugs, including amphetamines, alcohol, and inhalants, on the human body. Although the exhibition does not seek to make a value judgment with respect to the use of these substances, it has been of great help to parents and educators who want to help children understand this social problem.

—José Ángel Andrade, administration

Microscopes (below) are one of the tools for engaging the public in health issues at Museu da Vida, Rio de Janeiro, Brazil (www.museudavida.fiocruz.br). Seeing the “invisible” world is the starting point for discussing how social and environmental factors can impact the quality of life. Museu da Vida aims to inform and educate about health, science, and technology in a creative and entertaining manner, through permanent exhibits, interactive activities, multimedia, theater, video, and labs. The objective is to help the population understand scientific breakthroughs and their impact on daily life, expanding their participation in issues related to health, science, and technology. The museum is connected to the Oswaldo Cruz Foundation, a key Latin American health and biomedicine research institute.

—Luisa Massarani, head of science communication studies

El Museo de la Ciencia y el Juego of the National University of Colombia in Bogotá (www.unal.edu.co) designed and produced a health fair to engage audiences of all ages in play and interactive activities to prevent disease and promote health. It was presented in collaboration with Unisalud, a firm that provides health services for employees of the university. The fair promoted healthy lifestyles through 16 modules focused around the themes of breast cancer prevention, alcoholism, oral health, and growth and development. In the picture below, a visitor tests her balance, illustrating the theme of growth and development. Our reflexes and balance change as we grow, and specialists measure them to determine if children are developing well.

—Martha Cambre, executive coordinator

Respira Uruguay (Uruguay Breathe, http://latu21.latu.org.uy/espacio_ciencia/en/), an interactive exhibition (above) produced by Espacio Ciencia of the Technological Laboratory of Uruguay in Montevideo, aims to raise awareness about the risks of smoking by comparing the lives of smokers and non-smokers with respect to tobacco’s impact on finances, physical appearance, and overall health. The exhibition is designed for the general public, but specifically targets children from ages 9 to 15, a stage at which Uruguayan youth may start to experiment with cigarettes. The exhibition was unveiled in August 2007 by Tabaré Vázquez, the president of Uruguay, and Margaret Chan, the director-general of the World Health Organization.

—Maria Cristina Ruiz, general coordination of education and communication
Inspiring, Engaging, and Involving: Multiple Paths to Good Health

By Gloria German

I was going to smoke, but now I’m not.” If I’d ever wondered if Explorit Science Center’s health programs were impacting students, a shy six-year-old’s confession after an assembly solidified my confidence. Simultaneously, the shock of learning that a child that young had considered smoking reminded me of the importance of health science outreach.

Explorit Science Center (www.explorit.org) in Davis, California, reaches 7,000 to 9,000 people per year with our traveling assembly and 4,000 to 7,000 people through our Health in Your World family science night program. We also offer various exhibitions and special programs related to health. As an educator, I feel the value of our programs lies in the multiple ways that we engage students, schools, and families in learning about healthy behaviors.

Assemblies inspire

Our traveling assembly, Journey Through the Human Body, is a 45-minute presentation designed for 200 to 600 K–6 students. A presenter and a technical assistant teach the school about the skin, lungs, heart, and digestive organs. Student volunteers participate on stage, dressing in a bathrobe and raincoat to represent the layers of the skin, testing their lungs, and beating a bicycle horn “heart.” We teach the science of the human body, encouraging students to shift their reactions from “eeew” to “oooh!” Our take-home messages are healthy choices: Students are encouraged to wear sunscreen, exercise, eat healthy food, and choose not to smoke.

Along the way, we use dramatic examples to show how our bodies work. To teach about the skin, we use a probe microscope to magnify a student’s scab to 50 times its original size, for the whole school to see. We show the dangers of smoking with two sets of pig lungs—one normal and one treated to resemble a smoker’s lung—also magnified for all to see. Our grand finale is “digestion in a bag.” Saltine crackers are chewed with large model teeth, exposed to water acting as saliva, “digested” with vinegar standing in as stomach acid, and finally eliminated—the corner of the bag is cut and the contents squeezed into a bucket, with a camera putting the action onto the projection screen.

After I present the program, students often approach me with questions that range from inquisitive (“Was that real stomach acid?” (No); “Are those real lungs?” (Yes); “Is it true that gum takes 10 years to digest?” (I’m not sure)) to saddening (“My friend/family member smokes—is that what his/her lungs look like?”) The intention is to leave the students with new ideas, to reinforce science concepts, and to generate excitement and discussion at school and at home. Since the assembly leaves some questions unanswered, we like to pair it with our family program, Health in Your World.

Family science nights engage

Health in Your World is a family science night set up at a participating school, typically in the multipurpose room. An Explorit educator brings 12 to 15 hands-on, health science stations, and the school provides volunteers to staff the event. Students and their families work through the activities with help from the volunteers.

When they arrive, the students pick up passports, which are stamped at each station. Upon completion, the passports become free passes to our center. Topics range from nutrition, bones, and germs, to environmental health topics, such as air quality and water use. This is the opportunity for students and their parents to delve more deeply into health topics. At the nutrition station, students can do exercises wearing a five-pound “fat belt” to feel the impact extra weight can have. The pig lungs return; this time, students can get up close and compare their ability to inflate.
No surprises here; the smoker’s lung doesn’t do very well. Additionally, participants can breathe through a straw to simulate asthma, put together our model skeleton “Mr. Bones,” and practice brushing and flossing on a supersized set of teeth.

We often visit schools that are underperforming or are in impoverished communities. In communities where families are unlikely to visit a science center, it is necessary to bring the science center to them. Engaging entire families in health-related matters is crucial. I’ve had numerous conversations with parents at these events along the lines of “I didn’t know that was so bad for you.” As excited as a student may be after a field trip, assembly, or classroom lesson, young children may not have the power to change their family’s health habits. In that vein, we try to create many opportunities for families to engage in health topics together.

Exhibits and special programs involve

Explorit’s 9,700-square-foot facility houses two exhibitions: a long-term exhibition entitled Move It! Science in Action and a changing exhibition. Move It! contains some health-related exhibits, including Bikes and Bike Riders, where visitors can take their pulse and temperature before and after riding a bicycle. Our most recent temporary exhibition was Body Blueprints. It focused on the impact that both genes and choices have on health and incorporated and expanded upon a traveling exhibition from the Hall of Health in Berkeley, California, entitled Your Genes and Your Choices. In one of my favorite activities, visitors got some exercise by performing a “silly walk” chosen from a stack of cards. For the advanced silly walkers, a weighted vest was available for an additional challenge.

Furthermore, we provide many custom outreach and on-site programs to groups requesting health-related topics. Examples include our Young Scientist Series, which consists of four to five after-school lessons on a topic of the school’s choice. A joint effort with the local Girl Scout council provides various programs including some focusing on health topics. Our weekend Family Explorations at the center have included dissections, presentations by nursing students, and a concert by Carl Winter, a professor at the University of California, Davis, who writes parodies of pop songs to teach about food safety and health (http://foodsafe.ucdavis.edu). Our Summer Science Camps have also featured health topics, with activities ranging from obstacle courses to group dissection projects.

Our mission statement reads, “We engage people in science experiences that touch all our lives.” We work toward that mission by including health exhibits, discussions, and presentations that we hope can improve and even save the lives that we touch.

Gloria German is education specialist at Explorit Science Center, Davis, California.
As a science museum, Universum in Mexico City places great importance on topics that have a direct impact on the population’s well-being. Therefore, we raise issues related to health and human development that concern people of different ages and cultural backgrounds.

For over five years, Universum, which operates under the auspices of the National University of Mexico (UNAM), has focused on providing our services to people with disabilities, older adults, and young people at risk of becoming homeless, among others, through our Área de Atención a Público Vulnerable (Office for Attention to Vulnerable Populations). We have designed strategies and activities especially for them. We have also selected scientific topics related to their everyday lives, such as diabetes, geriatric diseases, drug and alcohol abuse, eating disorders, and risky sexual behaviors. The aim is to introduce vulnerable people to scientific knowledge in order to provide them with preventative health education. To do this, we work with educational and disability care institutions to determine which health topics interest these audiences. We then organize talks by specialists about specific illnesses. This way, we seek to make their visit to Universum a meaningful experience that also supports health care.

Another strategy that has given us significant results has been to bring the museum directly to communities, to help overcome Mexico’s geographical and socioeconomic barriers. The museum executes some activities related to health care and the improvement of health conditions in both rural and semirural localities. We know that public health is intimately linked to culture and educational levels, as well as other socioeconomic factors, such as housing and public services like potable water and drainage. Science communication can play a major role in improving health conditions by teaching about basic health through simple and accessible language. The focus of our communication efforts might not be merely biological or medical, but also environmental and socioeconomic.

For example, last April, we executed the first Health, Science, and Technology Fair at Tlapa de Comonfort in the state of Guerrero. This place is known for a high poverty rate and a large indigenous population (almost 50 percent). There, we carried out activities in which Nahuatl- and Mixtec-speakers took part. They obtained information about contraceptive methods and how to use them responsibly. This will help to avoid sexually transmitted diseases and unwanted pregnancies, especially among local adolescents, who become sexually active when they are between 12 and 16 years old, on average. The fair was complemented with talks about other public health issues such as patient safety and preventative hygiene as the way to avoid infections.

The activities that happen inside the museum are also a sign of our work. We offer talks to older adults about self-health care and balanced diets, as well as group activities in which we raise issues like health, self-esteem, and the older adult’s social role. We also work to support the physical and social development of psychiatric patients and those who suffer from disabilities and degenerative illnesses like Alzheimer’s disease.

Through science communication, we help them to be educationally and socially included.

Leticia Chávez Martínez is visitor services manager and Dolores Arenas Venegas is coordinator of attention to vulnerable populations at Universum, the science museum of the National University of Mexico (UNAM), Mexico City.
In the late 1960s, the U.S. surgeon general declared infectious disease a concern of the past. Yet today we are living with an HIV/AIDS pandemic, emerging diseases such as avian influenza, and threats from old enemies due to antibiotic resistance. Why are we still challenged by infectious disease and what can be done about it? The Marian Koshland Science Museum of the National Academy of Sciences (NAS) in Washington, D.C., tackled this question in its exhibition Infectious Disease: Evolving Challenges to Human Health, which opened in March 2007. This exhibition was funded by a Science Education Partnership Award (SEPA) from the National Center for Research Resources at the National Institutes of Health (NIH).

Visitors to the Koshland Science Museum are mainly teenagers or adults. The Koshland Science Museum bases its exhibitions on the reports of the National Research Council (NRC) and Institute of Medicine (IOM), preeminent organizations that operate under the auspices of NAS. The infectious disease exhibition was based on over 50 reports, including the key report Microbial Threats to Health (IOM, 2003).

The museum worked closely with a scientific steering committee and a design team (Bowman Design Group, Design Craftsmen, and Digital Artefacts) to create the exhibition. The scientific steering committee advised on the focus of the exhibition and reviewed all text and multimedia to ensure accuracy. In the area of global health, they chose to center on the world’s biggest killers: HIV/AIDS, tuberculosis, malaria, and diarrheal diseases.

The exhibition contains eight displays. The first half of the exhibition introduces visitors to microbial evolution and global health. An introductory video shows bacteria dividing and mutating through many generations. Another exhibit introduces the human element. Visitors slide a screen across a mural of people from around the world, revealing microbes that are lurking inside and around us.

The second half of the exhibition focuses on controlling specific diseases. All of the exhibits can be viewed online at www.koshland-science.org/exhibit_infectious.

From visitor studies, we know that visitors appreciate accuracy, relevancy, and currency in exhibitions. We worked to meet these expectations through up-to-date research and built-in tools for updating information. For example, in one exhibit on emerging infectious diseases, updates made from a remote desktop immediately appear on the museum floor and on the museum’s web site.

We continue to improve the exhibition in reaction to visitor feedback and to add additional information. Currently, we are developing a frequently-asked-question kiosk and addressing new public health issues that have arisen since the exhibition was released. As part of the SEPA grant, we are also seeking museum partners and will provide underwriting for duplication of selected displays in their facilities.

Erika Shugart is deputy director of the Marian Koshland Science Museum of the National Academy of Sciences. She can be contacted at eshugart@nas.edu.

Visitors decide how to distribute vaccines in Chicago to stave off seasonal influenza. Photo courtesy the Marian Koshland Science Museum of the National Academy of Sciences.

The Evolving Threat of Infectious Disease

By Erika Shugart
In the gallery

As My BodyWorks project manager, I was fortunate to find an experienced exhibit designer, Peter Feher, who was willing to move to Mobile to take on the project. The Exploreum has no in-house exhibit design or fabrication capabilities. A challenging schedule was developed with the final design and exhibit specification, development, and fabrication work compressed into 18 months, rather than the more typical two to three years for a project this size.

My BodyWorks opened to the public as scheduled on January 17 and was within its $3 million budget. At 6,500 square feet, the gallery contains 53 kiosks, 20 of which have interactive touch screens that allow for relatively economical content updates. Some kiosks were purchased ready-made from the Carnegie Science Center, Pittsburgh, and the Franklin Institute, Philadelphia, and others were developed to our custom specifications. An Alabama-based firm, Southern Custom Exhibits, built the original kiosks, produced all graphic elements, and coordinated the installation.

Advanced Animations designed and built an eight-foot-tall, simulated beating heart with a heart attack sequence, based on the iconic giant beating heart in Adventure Science Center, Nashville, Tennessee. Under our direction, Silver Oaks Communications produced an original interactive computer game that teaches how Captain Insulin combats diabetes, as well as interactive kiosks on how to choose a healthy daily menu.

Exhibit Engineering in Pensacola, Florida, provided two state-of-the-art interactive technologies: the I-Viewer (IV) and augmented reality. The IV sliding touch screen illustrates the intricacies of five of the body’s systems (cardiopulmonary, nervous, digestive, skeletal, and muscular). Visitors can choose to watch 28 different videos that explain, for example, the digestive system or the causes of stroke. These graphics and videos were supplied by Blausen Medical Communications. The augmented reality kiosk allows visitors to appear to hold a beating heart in their hands and to explore deep inside as the valves open and close and blood flows.

The BeHealthy System, developed by and sponsored by Blue Cross and Blue Shield of Alabama, allows visitors to use a personalized card at 11 different BeHealthy activity stations spread throughout the gallery. At each station, visitors can record personal data such as their body mass index, blood pressure, pulse before and after exercise, flexibility, or typical daily calories consumed. When visitors leave the gallery, they can exchange the card for a take-home, printed summary of the results.

Science centers such as the Exploreum bring decades of experience in hands-on, informal education to the national health challenge. “By motivating visitors to form new lifestyle patterns, My BodyWorks has the potential to improve the health and quality of life of area residents and to reduce the cost burden of obesity-related health care on the community’s economy,” said executive director Michael Sullivan.

Eleanor Kulin is director of special projects at the Gulf Coast Exploreum Science Center, Mobile, Alabama, and My BodyWorks project manager. For more details on the gallery, contact Exploreum executive director Michael Sullivan at 251/208-6884 or mike@explorem.com.

Jumping from a standing start requires 110 muscles to work in conjunction.
At one of 11 BeHealthy activity stations in My BodyWorks, visitors can measure their performance, which will be recorded on their custom read-out. Photo by Dan Murphy

Continued from page 5
International Year of Astronomy 2009

The International Year of Astronomy 2009 (IYA2009, www.astronomy2009.org) marks the 400th anniversary of Galileo Galilei’s first astronomical observations with a telescope. ASTC is now working on 100 Hours of Astronomy (100HA, www.100hoursofastronomy.org), one of IYA2009’s cornerstone projects, which will present 100 continuous hours of public outreach events April 2–5. ASTC encourages its members to host events featuring a screening of 100HA’s kickoff celebration, which will include presentations from science centers around the world (www.100hoursofastronomy.org/program). This opening event will be webcast live from the Franklin Institute, Philadelphia, 1:00–2:30 p.m. EDT on April 2, and will be archived and available immediately. For more information on 100HA, contact Walter Staveloz, wstaveloz@astc.org.

As part of IYA2009, science centers can reserve an hour of real-time control of a robotic telescope through a web interface. Science center visitors will be able to see the telescope and hear about how it works, and then choose astronomical objects to view. To reserve a time slot, fill out the “Go Observing” request at www.discoveryspace.net.

ASTC is touring several astronomy-related exhibitions to help science centers celebrate IYA2009. The 3,500-square-foot Alien Earths. Both exhibitions were produced by the Space Science Institute, Boulder, Colorado. The Harvard-Smithsonian Center for Astrophysics, Cambridge, Massachusetts, is now developing the 2,500-square-foot Black Holes: Space Warps and Time Twists, which begins touring in October. For more information or to book an exhibition, visit www.astc.org/exhibitions or contact Wendy Hancock, 202/783-7200 x117.

A teen volunteer at Chabot Space & Science Center helps visitors build pocket sundials at a Sun-Earth Day celebration. Photo courtesy Chabot Space & Science Center

Communicating Climate Change

On December 3 and 4, 2008, researchers and educators met at the New York Hall of Science in Queens to launch the Communicating Climate Change project, part of ASTC’s IGLO initiative. Funded by the National Science Foundation (NSF), the project pairs 12 U.S. science centers with local research institutes. A live webcast of the meeting allowed those who were unable to travel to New York to watch the proceedings, ask questions, and give their own presentations.

At the meeting, Yale University’s Anthony Leiserowitz, co-principal investigator for the project, noted that his research suggests most people believe “climate change is something that takes place somewhere else far away, not in your own backyard.” Communicating Climate Change is designed to change that by focusing on local indicators of climate change.

Contributing to the project are the American Geophysical Union; the National Oceanic and Atmospheric Administration; the University Corporation for Atmospheric Research; Natural History Magazine; ScienCentral, Inc.; and the Cornell Lab of Ornithology. The Yale School of Forestry and Environmental Studies will examine effects of participation in educational activities on public attitudes and behavior.

Science centers participating in the project are: Arizona Science Center, Phoenix; Bishop Museum, Honolulu; Chabot Space & Science Center, Oakland, California; EdVenture Children’s Museum, Columbia, South Carolina; the Franklin Institute, Philadelphia; the Maryland Science Center, Baltimore; the Museum of Discovery & Science, Fort Lauderdale, Florida; the New Mexico Museum of Natural History and Science, Albuquerque; the New York Hall of Science, Queens; the Reuben H. Fleet Science Center, San Diego; the Sciencenter, Ithaca, New York; and the Saint Louis Science Center, Missouri.

A Lifetime of Curiosity

With the first wave of baby boomers now looking to the next phase of life, the time is right for museums to expand their engagement with older adult audiences. A Lifetime of Curiosity: Science Centers and Older Adults, which ASTC will publish in March, offers positive examples, inspirational stories, and resources for those who are ready to get involved. The first section includes stories by older staff and volunteers who work in and with science museums. The second highlights science museum programs that are currently popular among older adults. The last section points to resources and offers a checklist and reminders about comfort and accessibility. Although this report focuses on the United States, much will apply to any society with an aging population. The publication is supported by a grant from MetLife Foundation. To order, e-mail pubs@astc.org.

A Lifetime of Curiosity: Science Centers and Older Adults in March. Cover photo courtesy the Exploratorium
Welcome to ASTC

The following new members were approved by ASTC’s Membership Committee in October 2008. Contact information is available in the About ASTC section of the ASTC website, www.astc.org.

SCIENCE CENTER AND MUSEUM MEMBERS

• Cade Museum Foundation, Washington, D.C. When it opens in 2011, this 50,000-square-foot museum set within a 35-acre park in Gainesville, Florida, will explore inspiration, invention, and innovation—themes central to the legacy of the late Robert Cade, University of Florida researcher and inventor of Gatorade.

• National Museum of Natural History, Smithsonian Institution, Washington, D.C. With more than 126 million natural science specimens and cultural artifacts, including an eight-ton mounted African bull elephant and the Hope Diamond, this nearly 100-year-old museum is back as an ASTC member after a 10-year hiatus. The museum opened the new 23,000-square-foot Sant Ocean Hall in September 2008. (See “Spotlights,” January/February 2009.)

• Sci-Tech Center of Northern New York, Watertown. First opened in 1983, this 3,600-square-foot center features more than 40 interactive exhibits and also hosts a scholastic chess club, afterschool science classes, and science events in partnership with the Tri Region Science and Engineering Fair.

SUSTAINING MEMBERS

• Bally Design, Pittsburgh
• Elsa Bailey Consulting, San Francisco
• Entertainment Technology Corporation, Southampton, Pennsylvania
• Pete St. John Design, Groton, New York.

ON THE CASE—Marcus has just returned home from a business trip to Asia. He checks into the hospital emergency room, complaining of respiratory symptoms. Is it seasonal influenza, or could it be something more sinister? This sounds like a case for a disease detective.

In the 1,500-square-foot exhibition Disease Detectives, developed by the Science Museum of Minnesota (SMM), St. Paul, visitors role-play public health detectives who must determine which microbes are making three different patients sick. In the Case of the World Traveler Blues, visitors examine Marcus (a mannequin) by taking his temperature, listening to his heart and lungs, obtaining a nasal swab, and studying the sample in a lab. Two other cases await these science sleuths: the Case of the Birthday Surprise, where Yolanda becomes ill on a trip to West Africa. Each case highlights a different way that infectious diseases are spread (through the air or droplets, food or water, or vectors like mosquitoes and ticks).

Next, visitors gather clues to find out exactly what made each patient sick. For example, in a diner environment, they can identify a foodborne culprit by determining what different customers ate. Along the way, they learn about prevention. In one exhibit, visitors can pretend to wash their hands in a sink, which will let them know whether or not they’ve spent the required 20 seconds scrubbing.

Visitors can also touch giant models of microbes, hear personal stories about food- and waterborne illnesses on a diner jukebox, and learn about the immune system and infectious disease-related careers. They can explore the history of diseases like smallpox and HIV/AIDS, or get current infectious disease news on a computer kiosk. One popular exhibit allows visitors to play a quiz game by selecting the answers with their feet.

Disease Detectives opened at SMM on January 5, 2008, and will begin touring in September 2009. The $900,000 exhibition is supported by a Science Education Partnership Award (SEPA) from the National Center for Research Resources, National Institutes of Health.

Details: Laurie Fink, program director for human biology, lfink@smm.org

MARTIAN CHRONICLES—Would you go to Mars? That’s the question that greets visitors in Facing Mars: Would You Survive the Journey?—designed by the Ontario Science Centre in Toronto, Canada. Through 30 interactive exhibits, visitors can experience the sometimes harsh realities that future astronauts would face while traveling to and living on the Red Planet.

On a voyage to Mars, astronauts would have to live in cramped conditions for close to three years. Visitors can get a sense of this experience by spending two minutes in a Confinement Box. In the exhibit Crew Selection, they can assemble a team of astronauts with the right skills and personalities to make the journey a success. Visitors can also learn about space motion sickness in a spinning chair, or get a glimpse of them-

By Emily Schuster

A visitor experiences what it might be like to walk on Mars in Facing Mars: Would You Survive the Journey? Photo courtesy Ontario Science Centre
selves with “puffy faces” caused by the effects of microgravity on circulation. The exhibition also examines the technology astronauts may someday use to live and work on Mars. The Glove Box challenges visitors to perform tasks in a low-pressure space while wearing thick, protective gloves. Would-be astronauts can also explore the planet’s surface in a simulated glider flight, or put on harnesses to experience a walk on Mars in one-third of Earth’s gravity.

At the end of the exhibition, visitors are asked whether they would still go to Mars, puffy face and all. The approximately 7,000-square-foot exhibition, which was on view at the Ontario Science Centre from June 2008 to February 2009, begins its international tour on May 30.

Details: Heather Farnworth, associate director of international sales, heather.farnworth@osc.on.ca

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**THE GREAT OUTDOORS—On October 11, 2008, Pacific Science Center, Seattle, opened the first phase of the expanded Mercer Slough Environmental Education Center (MSEEC). Mercer Slough Nature Park, a 320-acre wetland area in urban Bellevue, Washington, is maintained by the City of Bellevue Department of Parks & Community Services, with education programs by Pacific Science Center.**

The park’s educational activities were previously held in the Sullivan House, which served 8,000 visitors each year. Once its second phase is completed, the new education center will have space for five times as many people. MSEEC has already expanded its teen internship program and premiered new offerings like sleepovers and family workshops. A lecture series and afterschool nature club are planned.

MSEEC consists of a series of buildings occupying 12,000 square feet. The first phase, which cost $11.5 million, marks the debut of the remodeled Sullivan House, a new classroom building, a wet lab, a community building, and a visitor center. The second phase will bring another classroom building and wet lab. MSEEC also features a tree house, as well as boardwalks and overviews that allow visitors to view the wetland with minimal impact.

The center was designed to meet Leadership in Energy and Environmental Design (LEED) standards at the Silver level. Building locations were chosen to preserve existing trees. The buildings feature green roofs and recycled materials. During construction, workers used drills that ran on corn oil to protect the wetland from harmful seepage.

Donors to the project include the City of Bellevue, the U.S. Department of Housing and Urban Development, the State of Washington, Puget Sound Energy, the Allen Foundation, and Penford Corporation.

Details: Apryl Brinkley, Mercer Slough manager, apryl_brinkley@pacsci.org, 425/450-0207

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**Grants & Awards**

In their sixth annual International Science & Engineering Visualization Challenge, Science Magazine and the National Science Foundation (NSF) awarded first place in illustration to Linda Nye and the Exploratorium Visualization Laboratory, San Francisco, for their image entitled “Zoom into the Human Bloodstream.”

The Themed Entertainment Association gave a Thea Award for Museum Exhibit Limited Budget to the Arizona Science Center, Phoenix, for its Forces of Nature gallery, created, designed, and produced by BRC Imagination Arts, Burbank, California.

The government of Flanders will give a total of 26 million euros in grants to Technopolis, the Flemish Science Centre, Mechelen, Belgium, over a period of five years. The grant will sponsor at least one new, large themed project per year.

NSF awarded two grants, totaling close to $5.5 million, to the Science Museum of Minnesota, St. Paul, to support its Future Earth Initiative and Brighter Futures: Public Deliberation about the Science of Early Childhood Development exhibition projects.

The National Institutes of Health (NIH) awarded $4 million to a group of Philippine and U.S. scientists, including the Academy of Natural Sciences in Philadelphia, to support the development of new molecules and biofuels technology from marine mollusks.

The Gordon and Betty Moore Foundation contributed $1.6 million to a two-year pilot program of the Exploratorium, San Francisco, and the Lawrence Hall of Science, Berkeley, to support local elementary school teachers as they adapt to a new California state science curriculum.

The Exploratorium, San Francisco, was one of eight recipients of a 21st Century Museum Professionals grant from the Institute of Museum and Library Services (IMLS). The museum was awarded $206,522 to work with partners to develop design principles for after-school museum science activities, as part of the Museums Afterschool: Principles, Data and Design (MAPDD) project.

Explorit Science Center, Davis, California, received a $200,000 Neighborhood Builders Award from the Bank of America Charitable Foundation to expand its programs, exhibitions, and outreach to underserved students in Northern California.

Unitil Corporation donated $50,000 to the Children’s Museum of New Hampshire, Dover, to support the museum’s capital campaign and sustainability programs.

PA’I Foundation, Aiea, Hawaii, was awarded a $49,250 Native American/Native Hawaiian Museum Services grant from IMLS to partner with Bishop Museum, Honolulu, and other organizations for Maoli Arts Month 2009, a Native Hawaiian art celebration.
On January 12, Hollis J. Gillespie became director of the New Mexico Museum of Natural History & Science, Albuquerque. Her most recent position was vice president of operations, programs, and exhibits at the Turtle Bay Exploration Park in Redding, California. She has also served as director of education for Sea World—Busch Gardens Adventure Parks in Tampa, Florida, and as chief of public outreach programs for the Conservancy of Southwest Florida, Naples.

Mary Tyrie resigned as executive director of Mobius Kids, Spokane, Washington, on December 11 to pursue a new career. Associate director Marty Gonzales, formerly director of operations and membership, has taken over the museum’s operations.

On January 8, Mimi Quintanilla left her position as director of the Witte Museum in San Antonio, Texas, to become a consultant in governance, strategic planning, audience development, and programming. She had worked at the Witte for 28 years and will continue contracting with the museum.

Louis B. Casagrande will step down as president and CEO of the Boston Children’s Museum, Massachusetts, on June 30. He has held the post for 15 years and previously worked at the Science Museum of Minnesota, St. Paul, for 20 years, as head of anthropology and then as senior vice president for programs. On January 13, Casagrande was honored with the 2009 Commonwealth Award for Leadership from the Massachusetts Cultural Council.

After 21 years as executive director of Catawba Science Center (CSC), Hickory, North Carolina, Mark Sinclair will retire in July. Before coming to CSC, he served as director of the Orlando Science Center, Florida, for nine years. In his retirement, Sinclair plans to devote more time to church mission work, travel, and family. A search committee has been formed to find CSC’s next executive director.