Leadership for Change

Leading for Continuity and Change
Referents for Renewal: Finding Inspiration in Unlikely Places
The Practice of Leadership in a Changing Environment
The Business of Leadership: Lessons for CEOs in Hard Times
A Fellowship of Leaders: Building a Community to Serve Communities
ASTC Exhibition Services: Advancing the Science Center Movement
Passing the Helm: Bonnie VanDorn’s Legacy
IN THIS ISSUE November/December 2009

At a time of financial challenge, when a CEO's first tendency might be to hunker down and ride out the storm, it may seem counterintuitive to pursue renewal, form new partnerships, and make long-range plans. But according to our November/December contributors, leaders who keep their institutions focused outward and forward in this way may be doing just what it takes to guarantee long-term survival. In this issue, we analyze the art of adaptive leadership, discover how the Noyce Leadership Institute program is helping its CEO Fellows strengthen themselves and their communities, learn how two Fellows have been applying NLI lessons in their institutions, and recall some high points of ASTC leadership over the past three decades.

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Cover: Where are science centers headed, and how will we get there? In a changing world economy, today's museum leaders must chart a new course.

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Leading for Continuity and Change

By Lynn Luckow

The late John Gardner reminded us that leadership is as much about continuity as it is about change. Effective leaders are able to build bridges from an organization’s past and present to its future. The inability to navigate this delicate balance upends many well-intentioned leaders who either focus too much on status quo and the historical, or advocate a grand vision disconnected from their organization’s core values and purpose. Continuity and change need to go hand in hand.

This leadership principle is especially important during times of turbulence and uncertainty. Organizations and leaders exist in the context of the world around them, and as that world changes they must find ways to adjust to the new context. For science center leaders, it is a particularly opportune time to consider how you can practice “continuity and change” in your context and increase your chances of success in this chaotic world.

Leading for continuity sounds simple in concept, yet you may find it difficult in practice to frequently inquire about, (re)discover, and interpret the core essence of your organization. What does your organization care about? Why does it exist? Whom does it serve? What are its impacts?

Addressing these questions in day-to-day conversations with staff, board, and community members will continuously reveal those purposes and values of your organization that provide continuity and anchoring over time. While it’s true that a leader’s role is to communicate clear answers to such questions publicly, it’s also true that discussing issues of purpose and impact frequently is essential to achieve that clarity and to practice continuity.

To sharpen the change part of your practice, try engaging your board, staff, and community around this question: How will the world be better in positive ways because our science center exists? The resulting reflections and conversations ought to surface key information about who is being served well and who is not being served, what impacts are desired but missing, what new programs and initiatives are needed, and which are outdated and ought to be abandoned.

Involving others, sorting their ideas, and prioritizing how your science center can best contribute to their lives going forward begins to shape a change the organization can move toward. The conversation can then turn to this question: Does the change we envision build on the continuity of our values and what we care about? If it doesn’t, implementing that change will be a rocky road and unlikely to succeed.

For many, change is a scary thought. Holding continuity and change in the same breath, in the same hand, can reduce fears. Change then becomes about the desired end-state and publics served, and focus can shift to the real concerns about what it takes to make a transition to that new place. Leaders successful at leading change also tend to be good at leading transitions—accurately articulating an organization’s current state and values, where it is headed, and the terrain and pain it will take to get from one point to another.

Another characteristic of leaders who practice continuity plus change is that they see themselves as a “leader of leaders,” rather than as the sole leader of an institution. The world is far too complex for any one person to have all the answers. Everyone in an organization has a foot in the broader world and can contribute insights useful to the organization’s future.

The whole community must be included in the conversation about what it cares about and what would make the science center essential to it. Simply said, effective leaders find ways to engage and listen to their staff and the publics in their communities.

It is rare in my experience that organizations can thrive by preferring continuity over change, or change over continuity. It takes both. It takes a balance. Leaders and organizations must continuously reflect on the differences they want to make in their institutions and in the lives of others, and assess what’s moving them forward toward those ends.

Engaging in continuous growth, renewal, and change—anchored in the context of our times and the continuity of who we are as individuals or organizations—is essential for leading both successful public lives and successful public institutions that make a positive difference in the world.

Lynn Luckow is currently president and CEO of Craigslist Foundation, a nonprofit foundation characterized as a “catalyst for community vitality.” He is consulting dean of the Noyce Leadership Institute and a member of the NLI faculty.
“Leadership is not a job or a position, but a way of influencing others towards ends recognized as valuable and fulfilling.”

—Amanda Sinclair, *Leadership for the Disillusioned: Moving Beyond Myths and Heroes to Leading That Liberates*

Who are the leaders in your organization? Close your eyes and think for a moment. Who is the first person that comes to mind? Is it your director/president? Someone from senior management? The coordinator of community outreach? What about the head of security or the ticket taker at the front door? Is it you?

We often think of the words *leader* and *director* in the same breath, but this way of thinking sets up a situation where staff members across the institution treat the identified leader with such deference that they abdicate their own power to make a difference in achieving organizational outcomes. Those who are not in positions of assigned authority may tend to wait for vision and direction from “on high,” rather than taking initiative to create positive change.

Today, museums are operating in a climate of change that calls for new ways of thinking about how leaders and followers across the institution take and support initiative in service of creating value. While it may be less stressful for those without positional power to give over responsibility to those with formal authority, the organization thereby ultimately becomes less creative and connected. When all are engaged in the work and take responsibility for direction, then our organizations will achieve alignment and balanced pursuit of goals.

**Leading from within**

In understanding leadership at all levels of an organization, it is important to recognize the distinction between and overlap of management and leadership. In his 1990 book *A Force for Change: How Leadership Differs from Management*, John P. Kotter points out that in some ways the function of management (to provide order and consistency) is in direct opposition to the function of leadership (to produce change and movement). Although these two disparate aims can reside in single individuals, their purposes are distinct.

Management emphasizes planning, organizing, and operating efficiently and effectively. Leadership, on the other hand, is not a linear process by which organizational direction is set out for followers, but rather an interactive practice that includes participation across levels of position and power. It is an activity that is available to all who are engaged. Leadership is a dynamic relationship between the fluid roles of leaders and followers.

Rather than understanding leadership in terms of the traits or qualities of a leader, one can understand it as a process. Such a view suggests that leadership is a phenomenon situated in context and available to everyone.

Moving away from the heroic, “great man” theory that was prevalent in the 1980s, today’s understanding is more relational—envisioning leadership, as Joyce K. Fletcher notes in a 2004 article as a “multi-directional social process … aimed at collective outcomes.” Leaders, then, are not solely those who are assigned to formal positions of authority. Equally important are the emergent leaders who establish informal authority based on how others respond to them in a given situation.

**Think systems**

How does this relate to museums? Museums cannot be totally understood by simply looking at the units of which they are composed—any more than mayonnaise can be understood by looking at eggs and oil. Museums are complex adaptive systems (CAS), made up of elements (individuals, teams, departments, divisions, etc.) that are interdependent.

CAS emphasizes the relationships and interactions among the elements. Through these interactions—which are based on shared knowledge, goals, previous history, and worldview—new learning, creativity, capabilities, and adaptability surface. It is important to note that what surfaces is the result of the interactions among elements and not the particular actions

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of an individual or a group. In addition, in CAS, history cannot be revisited (you cannot reset the museum to an earlier period of time), order is emergent (it is created out of the interactions), and the future is typically unpredictable.

Understanding museums in terms of CAS will bring new solutions for current times. Museums are social organisms, and the work in which they engage is exhilarating yet messy. Complexity science is a frame that enables us to embrace the messiness and see the strength and creativity that results when systems connect, collide, and/or coalesce. A CAS perspective supports thinking about leaders and followers as roles that individuals play at different times and in different contexts.  

So what does it mean to lead in complex adaptive systems? Who leads and who follows? The answer is, it depends.

**Leading in a complex environment**

In his 1989 book *Managing as a Performing Art*, Peter Vaill describes complex systems as environments of “permanent white water.” Navigating in permanent white water requires an approach to leadership that differs from that exercised in more stable environments and more hierarchical organizations.

Turbulent conditions call for what Ron Heifetz described in 1994, in *Leadership Without Easy Answers*, as “adaptive leadership.” According to Heifetz, two basic types of issues require steering: “technical challenges” and “adaptive challenges.” When facing technical challenges (those that have been faced and solved before, and for which solutions are clear), management is needed; when facing adaptive challenges (those for which no response has yet been developed or tested), leadership is needed.

Complex challenges frequently traverse barriers of knowledge, skill, and function. The solutions are often murky and may not easily be seen from the corner office. One of the greatest challenges in adaptive leadership is that in times of stress those not in formal positions of authority are often quite willing to give away power to those in assigned positions of authority.

Staff may tend to look to traditional leaders to provide answers they do not have, and traditional leaders may step up to the pressure by falling back on the technical solutions they know. This disables some of the most important personal and collective resources that could be available for accomplishing adaptive work at a time when creativity and divergent solutions are most needed.

Adaptive leadership suggests that solutions to those important challenges that are not routine are best addressed in the context of shared leadership, recognizing that those in authority do not—and should not—be expected to have all the answers. Heifetz identifies five strategic principles of leadership that those in authority can apply to engage the leadership resources within the organization:

1. Identify the adaptive challenge;
2. Keep the level of stress high enough to encourage action, but not so high that the top blows off;
3. Focus attention on issues rather than stress-reducing distractions;
4. Distribute the work at a rate that people can handle; and
5. Protect voices of leadership without authority.

When these principles are applied, emergent leaders and engaged followers are supported in leaving the safe shelter of dependence and deference, which may require sharing risks, costs, and responsibilities. They also share in the rewards of leadership.

**Conclusion**

The world in which museums operate is exciting and complex. There is constant competition for resources that must be allocated to achieve myriad priorities. The challenges of today are far more intricate than those of 5, 10, or 20 years ago. Understanding and embracing our organizations’ complex natures can provide energy and avenues for greater creativity and innovation. Incorporating a framework of relation-based leadership can open up the process to many—in particular, those who may not see themselves as being in positions of power.

This shift in concepts of power and authority may best be understood in the context of feminist leadership theory. Power within an organization can be granted on the basis of position or be derived from followers. If one continues to accept the traditional perspective of power as a zero-sum commodity, in which power taken by one equals power lost by another, the emplacement of power within an informal leader may seem threatening to management and control.

However, within the context of feminist theory, as Peter G. Northouse explains in *Leadership: Theory and Practice*, power is defined in terms of energy and strength, “a source of synergy … to be taught and shared.” In this context, power expands as it is distributed, creating more power. When an individual steps up to leadership, there is room for others to step up as well.

Museum professionals come to the field because they are passionate about their craft, their area of interest, and their potential to make a difference. The structures within our institutions can either support or limit the ability to employ creativity and passion in the service of leadership. How can museums fully engage the passions that exist for implementing the organization’s mission? How can museums be better positioned to engage with their communities to create public value?

(Continued on page 8)
By Dennis Bartels

Referents for Renewal: Finding Inspiration in Unlikely Places

This is both a thrilling and a terrifying moment in the Exploratorium's 40-year history. Our institution, with its strong image loaded with meaning for different constituencies, is going to move from its current location at the Palace of Fine Arts, that familiar dark cave on the north edge of San Francisco, to the spotlit center stage of the city's front porch, the Embarcadero waterfront. It is easy to imagine all the ways we can mess this up.

Just a few short years away from opening our new home, we admit we don’t have all the answers. What gives us comfort or confidence that we will get this right—that we won't sacrifice continuity in our quest for relevance? Where are we finding inspiration for this massive institutional renewal?

From many places, to be truthful, but I want to focus on two less obvious sources, if only because they are easily dismissed or ignored—out-of-field references and the history of our science center movement.

Outside references

In a famous 1983 article based on organizational research, sociologists Paul J. DiMaggio and Walter W. Powell hypothesized that any new field might start with great variation but would tend over time to homogenize.*

DiMaggio and Powell identified more than a dozen mechanisms that work to make members of an organizational population begin to resemble each other over time, primarily because they look inward for points of comparison, sources of ideas, and even personnel.

In most industries, it is common to look for models among one’s peers and competitors. Universities look to other universities, silicon chipmakers to other chipmakers, and preschools to other preschools. Forty years ago, the science center movement was a wonderful variant introduced into the population of cultural and educational institutions—and wonderful variation still exists within our field. That is among its great strengths. But mindful of DiMaggio and Powell’s prediction of isomorphism for those who look only inward, Exploratorium staff wondered about creative organizations in other fields. Where could we find the producers of exceptional innovations and new ideas?

Our search turned up a few examples, and we took some board members and staff to visit them. We were inspired by the Interactive Technology Program at New York University for the clever way it manages its space to inspire creativity, crosscurrents, and dialogue. We were moved by the programs produced by the American Visionary Art Museum in Baltimore and by its authentic relationship to its neighborhood and community. We loved Millennium Park in Chicago for the way it engages children and adults in outdoor play. The City Museum in St. Louis—with its irreverence toward boundary, rule, or convention—reminded us how important it is for a creative organization to stay out of its own way. And we were awed by the community environment created inside the Seattle Public Library, which seemed to turn the traditional library model on its head.

Each of these organizations is working against type or defies easy categorization. Each is inspiring for a particular reason, often for different things in each organization and different elements in our museum. Each helped us to see things a bit differently.

To be fair, the Exploratorium has important reference points within the movement to democratize science. That grew out of the work of scores of scientists following the Manhattan Project. Many of them were victims of fascism and refugees from prewar Europe. As George Hein noted in a 2005 talk at the Museum of Science, Boston, some of these scientists migrated into science education and curriculum development because they believed, perhaps naively, that the best antidote to the next Hitler or Stalin was a person well trained in the basics of scientific skepticism and empirical evidence.

In the United States before 1950, science was taught only in high school—and only to selected students. It wasn’t until 1961 that the American Association for the Advancement of Science first championed science instruction for every student, from first grade through high school. Frank Oppenheimer worried that science and technology were becoming too important to modern society to leave in the hands of scientists and politicians. By opening the Exploratorium in 1969, he joined the movement to make science accessible to every child and adult.

The power of this history is to remind us that the Exploratorium is as much a social and political institution as an educational one, and that our movement, as former director Goéry
Delacôte understood and declared, is much bigger than one organization or even the science center field. It includes many other scientific, community, and educational organizations, all of which need to be highly networked and working together if we are to make a significant difference for this vision of democratizing science and relating it to our humanity.

To the extent that Frank’s dream was to make science accessible to everybody, one drawback of our current home is that we attract, as often as not, already like-minded people willing to hunt hard to find us. The relocation will place us near the city center, at the intersection of almost every major transit system—BART, Muni, ferry, commuter train, and even pedestrian and tourist traffic—in San Francisco and the Bay Area. In our new location, we will pick up passers-by who don’t even know if they want us (or, as Paul Martin of the Science Museum of Minnesota delicately put it at an Exploratorium planning charrette, “if we want them”).

This new audience mix will necessarily change us, but how? Do we invite in their expectations of us, or do we persuade them to suspend those expectations to experience something else, something unexpected? One thing is clear: We will have to respond and—remembering that the idea from the start was radical accessibility—affirmatively answer Paul’s question: “Yes, we want them!”

**Drawing conclusions**

These are but a few examples of how a look outside the field and a look to the past can inspire us with their relevance. One gift to us all is K.C. Cole’s new biography, *Something Incredibly Wonderful Happens: Frank Oppenheimer and the World He Made Up*. The book is full of so many of the essential ingredients of our movement—art, authority, human values, aesthetics, curriculum, and understanding—and Frank’s lovely expression of them. What these speak to collectively is our moral imperative for being: Why do our kinds of institutions exist?

The answer, I believe, is still to move individuals from other people’s claims and passive consumption of information toward active, personal exploration of the natural and technological worlds and oneself. To the extent that these critical inquiry skills are essential to fuller participation in our civic and economic lives, which are increasingly defined by scientific and technological know-how, then the conditions that created this movement in the 1950s are only more pressing today. I, for one, do not mind being accused of looking backward for a vision that was so forward-looking, even if our expressions of it need to be updated and adapted to the times.

The idea that the Exploratorium will never be finished might seem trite, but in the context of a major relocation project, it is liberating. Like our inspiring reference points, we must design for open frontiers and purposefully leave some areas incomplete. We need empty sets to keep us tilted forward. What a relief! We don’t have to figure it all out now. In fact, one can argue that’s the point of institutional renewal—it was never a destination.

_"Practice," continued from page 5_

In a forthcoming book, Richard A. Couto offers the following definition: “Leadership is taking initiative on behalf of shared values.” We propose that museums will best be positioned as leaders in their communities when it is understood that “taking initiative” is not confined only to the most senior levels of management.

The number of managers in a given organization is finite. We are not all managers, nor do we all aspire to be. However, we all can exercise leadership any day and every day in ways big and small. Leadership must be encouraged and supported across all organizational levels. Leaders at all levels must embrace their capacity to lead, and leadership development must be accessible to all who are engaged in the practice of leading. Nurturing and investing in leadership practice within museums will strengthen museums as leaders in their communities.

_"Practice," continued from page 5_

_Dennis Bartels is director of the Exploratorium, San Francisco, California, and a member of the first cohort of Noyce Leadership Fellows. For news of the Exploratorium’s 40th-anniversary celebration this year, visit Spotslights, page 19._

**Readings**


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**Readings**

In 2007, the Noyce Foundation, in partnership with ASTC, initiated the Noyce Leadership Institute (NLI), with the goal of increasing the capacity of 21st-century science center directors to lead effectively and to have greater public impact in their communities. The first Noyce Leadership Fellows began their program in June 2008 and finished in February 2009; the second cohort started an expanded 12-month program in March 2009. To date, 34 CEOs from science centers, children’s museums, and similar institutions worldwide have participated in NLI.

The design of the program is carefully crafted to encourage the Fellows to take risks and push their own boundaries. It immerses the directors in cutting-edge knowledge and tools, promising practices, and professional networks, all designed to enable them to deepen their institutions’ involvement with their communities. NLI’s vision is that the program will strengthen science centers as innovative educational hubs that engage their publics in science at every age.

Crucial to the success of NLI are three key components designed to help science center leaders meet this goal.

Pushing personal boundaries

Self-assessment and awareness are essential to leadership development. NLI Fellows begin by evaluating their own comfort zones and identifying how they want to stretch their learning about leadership. This exercise can be uncomfortable but enlightening. Participants create development goals for their leadership and think through how they can try out the new ideas or apply them in projects previously pushed to the back burner. As one Fellow summed it up, “I love the idea that if people are not out of their comfort zone, they are not progressing.”

Throughout the program, each Fellow shapes and guides a Strategic Initiative (SI), an essential project that his or her institution needs to undertake to address current challenges. The SI serves as a focal point for applying new knowledge and leadership skills from NLI, a type of “leadership laboratory” that helps each Fellow to practice working outside his or her norm. Reflecting on their SIs, Fellows from Cohort 1 told us, “This experience would have felt two-dimensional without the tension and focus of the Strategic Initiative”;

A Fellowship of Leaders:
Building a Community to Serve Communities

By Jennifer Zoffel

Georgina Ngozi (left), a 2008–2009 Noyce Leadership Fellow, shares progress from her Strategic Initiative with cohort members Linda Abraham-Silver and Patrick Lopez. Photo by Jennifer Zoffel
“If our initial goal is to be necessary [as an institution in our community], then we must face initiatives that stretch us and our organization”; and “I would honestly never have posed my initiative publicly without this program.”

Bold ideas can bring struggles, but participants are encouraged to push forward with new ideas, knowing that either way they are learning and growing. On occasion, an initiative that appears destined to fail develops into an unexpected win for the Fellow and his or her institution. One Fellow set out to work on a large SI with the local school system and quickly found himself caught up in the 2008 financial crisis. His SI had to be scrapped, but the relationships he had fostered within the school system became crucial when negotiating his own institution’s struggle with declining budgets. Another Fellow encountered strong resistance to her SI from her board, but the ensuing conversations and negotiations clarified priorities for the center’s future.

The power of the cohort

Another NLI component that participants continue to identify as invaluable is the cohort. At their own institutions, directors and executives are often isolated, and among their equals in the field, a sense of competition rather than collaboration may cause executives to work in silos. NLI seeks to foster a community of Fellows that enjoys a high level of collegiality, confidentiality, and trust, and one that provides a balance between being challenged and having a good support system.

NLI Fellows connect as a cohort in a variety of ways. Three residential retreats during the fellowship year provide an opportunity to share ideas and to work with leading experts in leadership, strategy, governance, organizational change, nonprofit management, and fund-raising. Before and between retreats, Fellows interact with their peers, as well as with faculty and executive coaches, through audio conferences, telephone calls, and a private web site.

In the months between the face-to-face retreats, Fellows engage in smaller Peer Application Groups that allow them to direct their own conversation topics and apply newly learned concepts to hot issues sparked by the larger group. This small-group interaction has proved particularly effective, say NLI participants. “I feel a strong connection with people [in my group]... I realize they have great advice for me,” said one. Added another, “With our peer groupings, I found a cadre of three other Fellows who openly shared our successes, our shortcomings, and lifted each other’s spirits... Through this group, I gained significant feedback on my daily challenges in my role as a leader.”

Coaching for greater capacity

A third key to success in NLI is the inclusion of executive coaches who work one on one with Fellows as much as possible to help them identify and remain focused on their goals for development as a leader. A coach’s role could include honing the Fellow’s SI to ensure that it creates real change in that director’s science center and community; assisting the Fellow to strategize and problem-solve; helping the Fellow to maintain a healthy balance of work and personal life during the NLI experience; and, ultimately, engaging with the Fellow to build his or her capacity to learn from NLI and other relevant experiences.

When surveyed, the first cohort collectively ranked interaction with their coaches as the “most useful” element of their NLI learning experiences. “[It was my] first time working with an executive coach,” wrote one. “I find her ability to help me rethink situations and strategize upcoming activities very helpful. I plan to continue her counsel [after completing the fellowship].” Another commented, “Best coach I’ve ever had. His sensitivity and perceptiveness, gentle but deliberate probing, specific behavioral suggestions, and supportive and nurturing demeanor were perfect for me.”

Moving forward with NLI

Across all elements of the Noyce Leadership Institute, the Fellows have challenged themselves to determine what is needed to move one’s institution—and perhaps the entire science center field—from nice to necessary. During their time in NLI, Fellows reflect both on how their current programming meets the needs of those they serve and on how they fail to serve facets of their communities. This community focus highlights the need for partnership and collaboration with other organizations, agencies, and businesses serving the same audiences. As Fellows embrace this concept, they broaden their thinking about community impact from tactical to strategic.

Although it has been just under three years since NLI first actualized the notion of a leadership development program for directors of science centers, much has already been accomplished. The first cohort has completed its program, the second is successfully under way, and a third is entering the application process. The leaders in the first two groups have already recognized transformational impacts at the personal, organizational, and community level.

Beginning in 2010, the Noyce Leadership Institute will expand to include a curriculum for senior managers who demonstrate the passion and potential to work as a CEO, COO, or other senior executive within a science center or children’s museum. The third cohort program will be modified to meet the development needs of non-CEOs, while still maintaining the core components that have led to NLI’s success.

In response to significant encouragement and feedback from participants and key stakeholders in the field, NLI will continue to work on its goal to build the capacity and sharpen the impact of science centers. “The fact that this has been focused on science centers is extraordinary,” says one member of the first cohort, “I will always be proud to say that I am a ‘Noyce Leadership Fellow.’”

Jennifer Zoffel is program administrator for the Noyce Leadership Institute. More information on the program, including application details, is available on the Noyce Foundation web site at www.noycefdn.org/leadershipInstitute.php.
The Business of Leadership: Lessons for CEOs in Hard Times

By Kirk Ramsay

Science centers are usually described as “not-for-profits.” The phrase may be difficult for a business leader to assimilate. Anyone who runs a large organization is seeking profit. The details of how science centers measure and express this vary perhaps from those of “profit-making” enterprises, but beyond that what is the difference? We may have certain needs and situations not encountered in other sectors, but we are subject to the same business environments. The profits we accrue may go to further investment in the public good rather than to shareholders, but at base science centers are businesses.

Thus, although I write about leadership from my perspective as CEO of the Glasgow Science Centre (GSC) and a member of the inaugural cohort of Noyce Leadership Institute Fellows, I am also drawing on my experience with diverse areas of the business sector, on the basis that the principles of good business leadership are always transferrable. Here are some that I have found useful.

Point the way

Some of us in CEO positions have enjoyed the privilege of our position without formal training to prepare us for the role. Others have had preparation but may not have formally revisited our skills and competences for some time. In an era when the global meltdown of financial systems and associated negative impacts have changed the business world (and national economies) in ways that most experts agree are irreversible, are we up to navigating in unknown territory?

Ask yourself these questions: Are my skills, competences, and behaviors well suited to the current circumstances? Is my view of my performance supported by others who observe it? Challenging your own abilities is likely to be unsettling at best—and potentially deeply depressing at worst. But a leader cannot be immune to the pain of dealing with new and difficult situations. The more difficult the situation to be addressed, the more important it is to be scrupulously honest with oneself.

Many tools exist to help you get a better fix on yourself and others; choose one or more and get started. If you have not done a Myers-Briggs-type profile, take a look in that mirror to find out who you are. A FIRO-B (Fundamental Interpersonal Relations Orientation-Behavior) profile can help you understand your leadership style. And, for the reality check that tops them all, the 360° feedback process—a structured model in which direct reports, board members, external associates, and other nominated parties all offer their views of you in your role—can confirm your strengths and help you find, accept, and act on your most pressing needs.

Such self-examination can produce revealing insights and lead to a radical re-think of one’s approach. Even more important, the process, when done well and openly, is visible to others, along with subsequent changes in the leader’s behaviors and directions. Acknowledging that “I may be part of the problem” is a powerful message for a CEO to send to the whole organization. Remember: The leader’s role is to point the way. Only then can you work with colleagues to improve their performance as well.

Build the case

Difficult times often require changes in practice, process, or structure. To free money and resources for core activities, a science center may need to lay off staff, dispose of assets, acquire new assets, slow or stop capital development, introduce new fund-raising actions, or strike up new partnerships. (At GSC, we have had to do all of these.) All of these changes will be seen by some—or even all—staff as major and unwelcome disruptions.

Woodrow Wilson said, “If you want to make enemies, try to change some-
thing.” Because few people like change, the way we manage it is a key determinant of success, particularly when the business environment is difficult.

How do we bring about change successfully? By slowing down! Take deliberate and clear steps to define the change, build the case for it, and “sell” it to all. New actions, new products, new services that support the core mission should be seen as welcome, exciting, motivating, inspiring. If those involved in and affected by a proposed change do not accept the case, then they will resist with all their might and your initiative will fail. Remember that when times are hard, people are likely to be suffering at the personal and family level and may thus be even more determined to resist change at work, unless they can see obvious benefits. Your challenge is to turn those “enemies” into supporters.

If your values are well understood and if you clearly live and act by them, it is likely that the majority of your colleagues will respect and support your proposals. But even if they don’t, it’s your job to lead. When a business fails terminally, there may be many reasons, but evidence supports the view that indecision by a leader and his or her acceptance of others’ blocking actions are significant contributing factors. When difficult things should not be avoided, do them and move on.

**Keep your eye on the plan**

How well is your organization prepared for the next year, 5 years, 10 years? With a nod to Good to Great author Jim Collins, do you have a BHAG (Big Hairy Audacious Goal)? Have you built an inspiring vision of the future that will maintain enthusiasm and commitment from staff, stakeholders, and partners through even the worst of times?

Current conditions have caused many organizations to reconsider their actions and how they deliver on outcomes. Although it seems a contradiction when most are looking to short-term solutions, this is the right moment to be clear about long-term plans. Powerful partnerships forged now can help science centers deliver more, better, for less cost, and share risk and reward. Being seen as a bit player limits the scope for such developments.

To move from being merely “nice” to being “necessary” takes revisiting your strategic plan and what it means for your community. Since we did this at GSC, the reactions have been amazing. Key stakeholders have transformed their thinking about what the science center offers as an “anchor” in the community. For example, we are about to open a new visitor center, developed in association with Scottish Power Renewables, at the largest onshore windfarm in Europe at Whitelee, near Glasgow. The center is expected to have 25,000 visitors a year.

Key to this process is the full engagement of your board of directors. It is easy for board members who have only limited contact with the science center to be diverted by short-term local issues and lose perspective. The leader’s role is to ensure that the “big picture” is always the context within which such issues are considered.

The same applies to stakeholders and partners. When choices are to be made by others, the science center should always be on the “must have” list. How that is to be achieved may not be obvious until close to the decision point, but having the big picture and being able to speak forcefully on the rationale for it will prepare us and our partners for making the right case at the right time.

**Learn from failure**

During difficult times it’s natural to seek certainty and a safe way through our troubles. Under a “safety first” policy, science center CEOs may insist on more detailed levels of control, becoming more hands-on in an effort to limit the options for failure. Ironically, such actions restrict the adaptability and agility of an organization and limit progress to the capacity of one leader.

If ever there was a time when science centers needed every bit of productive and creative capacity, it is now. When things are uncertain, when changes are taking place elsewhere before we know it, we need organizations that have no fear of dealing with whatever comes up.

So, hands off. Let your entire staff take ownership and apply their skills to best effect. You may well be surprised. What you can do is to create safe zones and support systems so that when failure occurs, as it inevitably will, you can limit the downside and ensure that the learning is done quickly and without repercussions. In that way, the actions that follow can take full advantage of what has been learned.

As an example, at GSC we brought our commercial catering in-house to improve quality, flexibility and profit margins. We made a lot of mistakes, learned fast, and now have offers and products that are unique in the Scottish market. Just recently, we won a national award for our menus, beating the established lead players in the market. All of this was developed by staff who had little experience in this area of business only 18 months ago.

Some of the best learning humans do is based on failure. Apply that principle to yourself as well as to your organization. Leaders need safe zones and support systems, too. Consider taking on a coach or mentor if you do not have one, and use that person to discuss situations you are dealing with. Open yourself up to facing failure and building your learning. Make sure your staff understands that failure is OK, provided you all react promptly and openly and learn from it. With such recognition and support, advantage can be built from what may otherwise have been seen as a failure.

At GSC, we have employed these principles to create a revitalized and more ambitious view of the future for our organization and the Glasgow communities. We now have a longer list of new initiatives and developments under way than our science center has ever had. Most of these have emerged since the economic downturn started. We may not have moved from “nice” to “necessary” yet, but we are traveling that road with demonstrable benefits that would not be there otherwise.

Kirk Ramsay is chief executive officer of the Glasgow Science Centre, Glasgow, Scotland, U.K.
With its playful enticements to take another look, Everyone Is You and Me is one of the classic exhibits found in science centers worldwide. It wasn’t always so.

In the early 1980s, through a partnership with ASTC and with support from the National Science Foundation (NSF), staffers from San Francisco’s Exploratorium took Looking at the Light, an exhibition comprising this exhibit and a dozen others about light and color, on the road, spreading word to other young science museums about the Exploratorium’s distinctive philosophy and approach to exhibit development.

As the exhibition arrived at each site, an Exploratorium staffer would arrive as well, to demonstrate how the exhibits worked and talk with host museum staff (and sometimes the board and funders) about the pleasures and intrigues of hands-on exhibits. In at least one case, such an event helped clinch the board’s decision to transform a traditional museum into a new-style science center. Added to the Exploratorium’s many other strategies for spreading the word, the traveling exhibition gave exhibit designers a chance to tinker with and get to know intimately exhibits they might have seen only as line drawings in the museum’s popular Cookbook series, launched in 1975.

In the years that followed, through a series of similar partnerships with member museums and other organizations, ASTC pursued its mission of advancing the culture and practice of science centers in North America and beyond, often through the medium of traveling exhibitions. The dual aspects of this acculturation process—traveling exhibitions and professional development—derived in some measure from the origins of ASTC itself, which was founded in 1973 by people who valued mutual support and experiential learning, as well as from the vision of early supporters at NSF, which provided core grants for activities that promoted the science center movement.

A 1975 NSF grant “to support the realization of ideas for experimental projects of general interest to science museums” was followed in 1977 by a five-year grant that supported “better utilization of resources by conducting mutually beneficial programs which would be impossible for most science centers to undertake on their own.” The latter specified that grantees would “develop quality traveling exhibits and accompanying educational programs on science and technology.” That grant expired in the early 1980s, but the tradition continued.

One result of an ASTC collaboration...
with the American Psychological Association and the Ontario Science Centre, beginning in 1983, was the award-winning exhibition Psychology. Its complement of professional development activities ranged from on-site orientations for local school teachers to what would become a long-running series of lectures at the ASTC Annual Conference on psychological research. Both the exhibition itself and the set of discovery boxes left at each host museum helped establish psychology as part of the standard science center repertoire.

In the years that followed, mentoring and apprenticeship were an integral part of several ASTC projects. Among them was the ASTC Traveling Exhibition Training Program, also funded by NSF. Starting in 1988, the program engaged experienced developers from the Science Museum of Minnesota, Boston Children’s Museum, Monterey Bay Aquarium, and other centers (under the sage oversight of former Oregon Museum of Science and Industry exhibit designer Shab Levy) in coaching novice staff from other museums in their first exhibit development projects. ASTC managed tours of the resulting exhibitions, which eventually reached 45 museums nationwide.

Cutting-edge topics and techniques

In partnership with member museums and other organizations, ASTC also led the way in developing exhibitions about new science and new technology, often using novel exhibit approaches.

Chips & Changes, which opened in 1984 with support from the National Endowment for the Humanities, Intel Corporation, and other industry supporters, introduced the “microelectronic revolution” with its display of more than 40 separate computerized devices. The attendant maintenance challenge (especially in the pre-Internet and even pre-word processor days) pushed ASTC to develop higher standards for documentation and technical support.

Soon, some of the larger science centers were banding together to develop more costly, large-scale exhibitions. But ASTC continued to work in collaboration with smaller museums, helping to disseminate small and midscale science-rich exhibitions that nearly always were funded by NSF. In the typical process, NSF provided funds to a museum for research and development, the museum built an exhibition, and ASTC, with its experience and economies of scale, managed the tour to a dozen or more museums, delivering educational materials and sometimes staff development as well. This system satisfied NSF’s requirement that the innovations it supported be disseminated widely and leave a lasting impact on the field.

Eventually, the tours even began to return some revenue to the museums that initiated the projects, funding further exhibition development. In this way, more than 70 NSF-funded exhibitions will have traveled through ASTC to cities and towns in North America and beyond from 1981 through 2009. Some memorable examples include Structures, from the Franklin Institute; a series of exhibitions, including Raceways and Salad Dressing Physics, developed by Bernie Zabrowski of the Boston Children’s Museum and distinguished by their use of everyday materials; the New York Hall of Science’s Hidden Kingdoms, about microbiology; and a series of astronomy exhibitions from the Space Science Institute and the Harvard-Smithsonian Center for Astrophysics.

In the late 1980s, ASTC took the lead again by initiating development of the first U.S. exhibition about global warming. Greenhouse Earth was developed in collaboration with Sheila Grinell (the author’s predecessor at ASTC) and the Franklin Institute and opened in early 1992; its accompanying film, Uncertainties in Global Warming Research, won a CINE Golden Eagle Award in 1993.

Another area where ASTC took the lead was in promoting concern about accessibility in exhibition design. In 1998, NEC Foundation of America provided support for a workshop on universal design; several years later, NEC supported development of accessibility features in Wild Music, a collaboration among ASTC, the University of North Carolina at Greensboro, and the Science Museum of Minnesota. (The exhibition is still traveling; see ASTC Dimensions, July/August 2007).

In 2006, the National Science Board honored ASTC with a Public Service Award for its “major influence on informal science learning” by “enabling scientists and engineers to reach the public through traveling exhibitions, educational programs, and youth initiatives.”

Going virtual

As new technologies appeared and use of the Internet expanded, the role of ASTC’s exhibitions program evolved. In 1996, ASTC led a collaborative experiment with an “electronic library of traveling exhibitions,” funded by NSF’s former Networking Infrastructure for Education program. A group that included the Exploratorium and the Brooklyn Children’s Museum created online representations of two exhibitions—Turbulent Landscapes and Wild About Plants—and the research behind them, and together explored the possibilities and challenges of introducing this new line of work into the flow of exhibition development.

These and further online experiments would eventually inform ASTC’s development, again with NSF support, of ExhibitFiles, a community web site with a growing collection of user-contributed case studies and reviews. Opened in April 2007, ExhibitFiles now has more than 1,300 members worldwide. Some of the old ASTC traveling exhibitions are documented there, and others will join the collection over coming months.

Thus is preserved a lasting ASTC contribution to the field, even as the association discontinues its traveling exhibition management service. Today, ASTC’s collaborative mission continues in new strategies for building the exhibits field and spreading word about the spirit that animates the science center movement worldwide.

Wendy Pollock leads development of ExhibitFiles and the Center for Advance- ment of Informal Science Education (CAISE), both funded by NSF. Until earlier this year, she had headed ASTC’s Exhibition Services program since 1980.
Last January, when Bonnie VanDorn announced her decision to retire from ASTC, she talked with excitement about ASTC’s new strategic direction and her own personal direction, as she prepares to embark on an “encore career.” After 27 years as ASTC’s executive director, Bonnie possesses the seasoned perspective of a captain who has navigated the water of changing times at the helm of the association “ship”—a fitting metaphor for someone who launched her science center career at the Pacific Science Center while living on a sailboat in Puget Sound.

As a leader, Bonnie has left an indelible impression on the field. There were 150 ASTC members in 1982, when she arrived in Washington, D.C., to take over the chief executive role. Today there are 589 members in 44 countries. Membership continues to increase, and surveys indicate a high degree of satisfaction with the services ASTC provides. Several regional associations based on the ASTC model have formed around the world. To achieve such results, through more than two decades of enormous growth and change, requires the steady hand of a leader who believes deeply in the value of science centers and understands the power that comes through collaboration.

Bonnie has been that leader. She leaves behind a legacy of both accomplishment and values. A committed educator, she positioned ASTC to establish the Teacher Educators Network in 1989 and to win support from the National Science Foundation for a series of four Institutes for Teacher Educators at science centers. Participants in the 1991–1994 workshops said the authentic experience of doing inquiry transformed them as educators. The institutes also positioned many of those who attended to play significant roles later in their states’ science education reform efforts.

It was Bonnie’s commitment to equity and diversity as early as 1986 that established ASTC, in partnership with the American Association for the Advancement of Science, as a forerunner in helping science centers engage their communities through inclusive programs. The high quality of this work won financial support from the Carnegie Corporation of New York and later attracted the attention of (and subsequent funding from) NSF and the DeWitt Wallace–Reader’s Digest Fund. Today, that value of inclusivity is evident in the ASTC Equity and Diversity Initiative and the board committee that supports its work, in the ASTC Diversity and Leadership Development Fellows Program, and in the diversity of the ASTC staff itself.

Many international collaborations were fostered and matured under Bonnie’s leadership. As the U.S. representative to the Indo–U.S. Subcommission on Education and Culture’s Joint Subcommittee on Culture from 1985 to 1996, she joined with Saroj Ghose to create innovative cross-cultural collaborations between ASTC and India’s National Council of Science Museums. Over a decade, the resulting exchanges and workshops laid a foundation of respect and shared learning that has since extended to a global exchange of ideas and best practices.

On Bonnie’s watch, the impact and effectiveness of science centers has advanced through the sharing of research and best practices at the ASTC Annual Conference, through ASTC publications and online resources, and through the establishment of the Center for Advancement of Informal Science Education (CAISE). Her sound fiscal management has resulted in a financially strong association.

Before joining the ASTC staff, Bonnie chaired the ASTC Board of Directors’ Professional Assistance Committee and gained an appreciation for the personal development that can result from a volunteer role. She carried that insight into the development of a multitude of opportunities, from committee work to the ASTC RAPs, for science center staff to participate in and engage the work of the association. The value she placed on leadership development for the field has recently resulted in landmark investment by the Noyce Foundation and the formation of the Noyce Leadership Institute (see “A Fellowship of Leaders,” page 9).

Most of all, the thinking and personality of a long-tenured leader are reflected in the culture, relationships, and effectiveness of the organization Bonnie has served. The ASTC “ship” has traveled far since she came aboard. She has helped us to expand our horizons, respond to changing needs, chart a new strategic direction, and prepare to embark on the next journey. We are grateful to Bonnie for the steady hand that has successfully guided us to this place and for the commitment and spirit that will continue within ASTC as a new leader takes the helm.

Nancy Stueber is president and CEO of the Oregon Museum of Science and Industry (OMSI), Portland, and president designate of ASTC.
ASTC Welcomes Bud Rock

By Leisle Lewis

One of the most daunting tasks a board of directors can undertake is the recruitment of a new chief executive officer. The impact of the ultimate decision is significant and will be felt by the organization for years to come. During 2009, the ASTC Board, together with a Search Committee that reflected the breadth and diversity of ASTC membership, undertook this task with enthusiasm and considerable trepidation.

We are all delighted with the result. Anthony (Bud) Rock joined ASTC as CEO in October, following a distinguished career in research, government, and academia. Bud Rock began his career at Columbia University’s Lamont-Doherty Geological Observatory, where he conducted laboratory and at-sea marine geophysical research in the Pacific and Indian Oceans. From there, he moved to Washington, D.C., to join the National Oceanic and Atmospheric Administration (NOAA) as a physical scientist in the National Oceanographic Data Center and as chief of intern-

Incoming ASTC CEO Anthony (Bud) Rock

ational programs for oceanic and atmospheric research. In the latter capacity, he designed and coordinated global research programs addressing climate change and the marine environment. He also served simultaneously as the international director of the National Sea Grant College Program and founder of NOAA’s Partners in Education program.

On leaving NOAA, Bud joined the U.S. Department of State. Over a 20-year period, he filled roles as diverse as chief of policy planning for oceans, environment, and science; director of international health policy; and principal negotiator on technology and trade in the office of the United States Trade Representative. Bud also served outside

Grants & Awards

On July 30, the Institute of Museum and Library Services (IMLS) announced 167 Museums for America grants, totaling $19,176,000. (All awards require matching funds.) Among the recipients were 23 ASTC members:

- **American Museum of Natural History**, New York City: $148,930 to conduct a risk assessment of museum collections currently on exhibit.
- **Ann Arbor Hands-On Museum**, Michigan: $136,490 to identify audiences, evaluate programs, train staff and volunteers, and build community partnerships.
- **Betty Brinn Children’s Museum**, Milwaukee, Wisconsin: $50,000 to create the exhibition Under Construction—Go Green!
- **Brooklyn Children’s Museum**, New York: $146,804 to teach children about environmental stewardship.
- **Catawba Science Center**, Hickory, North Carolina: $148,975 to create science activities based on temporary exhibitions.
- **Children’s Discovery Museum of San Jose**, California: $150,000 to launch an initiative to serve the growing local Vietnamese community.
- **Denver Museum of Nature and Science**, Colorado: $150,000 to support the museum’s Youth and Teacher Initiative.
- **ECHO Lake Aquarium and Science Center**, Burlington, Vermont: $149,169 to expand science lessons in local elementary schools.
- **Field Museum of Natural History**, Chicago: $119,803 to store tissue samples and make them accessible through searchable databases.
- **Imagination Station Science Museum**, Wilson, North Carolina: $150,000 to design a new master plan for exhibitions.
- **Kansas Cosmosphere and Space Center**, Hutchinson: $137,373 to develop an exhibition on the past, present, and future of space exploration.
- **Lawrence Hall of Science**, Berkeley, California: $150,000 to host the traveling exhibition Facing Mars from the Ontario Science Centre, Toronto, and related adult programming.
- **Lindsay Wildlife Museum**, Walnut Creek, California: $150,000 to design the new exhibition Behind the Scenes at the Wildlife Hospital and enhance the existing exhibition The Raptor Experience.
- **Long Island Children’s Museum**, Garden City, New York: $150,000 to reach out to underserved children and families in the community.
- **Museum of Natural and Cultural History**, University of Oregon, Eugene: $148,476 to reorganize the museum’s facilities and collections.
- **Museum of Science**, Boston: $150,000 to purchase a digital projection system for the museum’s planetarium.
- **New Mexico Museum of Natural History and Science**, Albuquerque: $133,170 to provide educational activities for families through museum/library partnerships.
- **Pacific Science Center**, Seattle: $147,474 to create a model for adults to engage in dialogue about science, technology, and social issues.
- **San Diego Society of Natural History**, California: $54,269 to digitize data related to botanical specimens from Baja California.
- **Sci-Port: Louisiana’s Science Center**, Shreveport: $66,948 to institute automated scheduling, reservations, donations, and member data.
- **Staten Island Children’s Museum**, New York: $50,000 to formalize the museum’s new in-school residency curriculum.
- **Utah Museum of Natural History**, Salt Lake City: $141,763 to provide web access to the museum’s major programs.
- **Yale Peabody Museum of Natural History**, New Haven, Connecticut: $149,028 to create a career ladder program to employ underserved teens as interpreters.
the United States as counselor for science, technology, environment, and health at the U.S. embassy in Tel Aviv and the U.S. mission to the European Union in Brussels. He held a similar portfolio as minister counselor at the U.S. embassy in Paris.

Bud’s diplomatic service culminated in his five-year appointment as acting assistant secretary and principal deputy assistant secretary of state responsible for oceans, environment, and science. He was the architect and implementer of U.S. foreign policy in these arenas, in cooperation with the full range of science-based federal agencies, nongovernmental organizations, for-profit entities, and their counterparts from outside the United States.

During his state department career, Bud was a negotiator, authorizer, or signatory for more than 100 science and technology agreements between U.S. institutions and their counterparts in other countries. For his contributions to science in U.S. foreign policy, he was the recipient of numerous departmental awards and the President’s Distinguished Service Medal. He was also recognized for organizing the department’s Partners in Science Education program.

In 2006, Bud accepted a position as the inaugural vice president for global engagement at Arizona State University, taking on broad responsibility to expand global awareness among ASU students and to develop new and creative international programs of research and scholarship. Through Bud’s leadership, ASU achieved unparalleled success in expanding opportunities for international student exchange, and the university established comprehensive partnerships for scientific research with five leading international universities.

In accepting his new position with ASTC, Bud noted that “today, more than ever, science is emerging as an instrumental factor in decisions affecting stability, security, and improved quality of life for the entire planet. Those who employ science for this purpose—those who understand and appreciate the enormous potential (and challenges) of harnessing this knowledge—undoubtedly began with a basic curiosity about all that science has to offer. We have a responsibility to fuel that curiosity and to encourage it as a process of lifelong learning. I look forward to working with ASTC and its members in meeting that important challenge.”

ASTC’s Board, membership, and staff eagerly look forward to working with Bud Rock in the coming years. We are confident that as our new leader, he will assist ASTC and its members to expand our reach, relevance, impact, and sustainability within our local communities, nationally, and internationally.

Lesley Lewis is CEO of the Ontario Science Centre, Toronto, Canada, and outgoing president of ASTC.

CAISE Fellows Announced

The CAISE Fellows program aims to identify and nurture emerging leaders from across informal science education. The 2009–2010 CAISE Fellows are:

- Jennifer Adams, Brooklyn College, Brooklyn, New York
- Alysia Caryl, The Tech Museum of Innovation, San Jose, California
- Trevor Nesbit, Independent Consultant, North Hero, Vermont
- Rose Honey, Hopa Mountain, Missoula, Montana
- Rose High Bear, Wisdom of the Elders, Portland, Oregon
- Christina Soontornvat, Austin Children’s Museum, Austin, Texas
- Steven Williams, National Air and Space Museum, Smithsonian Institution, Washington, D.C.
- Kantave Greene, Jackson State University, Jackson, Mississippi
- Sarah Garlick, The Geoscience Outreach Foundation, Intervale, New Hampshire
- Rebecca Prosino, Sci-Port: Louisiana’s Science Center, Shreveport
- Madlyn Runburg, Utah Museum of Natural History, Salt Lake City, Utah.

This year’s Fellows activities are focused on participation in CAISE inquiry groups. For more information, visit the Center for Advancement of Informal Science Education’s web site, www.insci.org.

Welcome to ASTC

The following new members were approved by ASTC’s Membership Committee in April 2009. Contact information is available in the About ASTC section of the ASTC web site, www.astc.org.

SCIENCE CENTER AND MUSEUM MEMBERS
- Jeddah Science Oasis, Jeddah, Saudi Arabia. This 43,000-square-foot, $3.7 million science center celebrated its official opening in June 2009. Design teams representing China, the Netherlands, South Africa, the United States, and the United Kingdom helped develop the center’s 70 exhibits, which range in topic from robotics to air and aviation to biology.
- Space Center Houston, Houston, Texas. Space Center Houston, back as ASTC members after a six-year hiatus, is the official visitors center of NASA’s Johnson Space Center, home to mission control. Since 1992, the 180,000-square-foot center has hosted more than 11 million visitors and delivered extensive educational programs to space campers, teachers, and students.
- The Works, Edina, Minnesota. First open in 1995, this 7,000-square-foot facility not only features more than 40 interactive exhibits, but hosts summer camps and an annual Tech Fest. The science center’s leadership has plans to expand professional development offerings and school outreach programs.

SUSTAINING MEMBERS
- Chick Russell Communications, Pasadena, California
- Garibay Group, Chicago, Illinois
- LaserHarps.com, Mountain Glen Harps LLC, Phoenix, Oregon.
100 YEARS OF SCIENCE—Originally part of a museum founded in London's South Kensington district after the Great Exhibition of 1851, the Science Museum became an independent entity on June 26, 1909. (A separate arts museum, the Victoria & Albert, was created at the same time.) In 2009, the museum is celebrating its 100th anniversary with a yearlong program designed to take the renowned institution into the future.

Drawing on a vast collection of artifacts from science, engineering, technology, and medicine (more than 15,000 items are on public display), the museum has selected 10 iconic objects for a Centenary Journey exhibition. Visitors were invited to vote for the one that has had the most impact, with results of the poll to be announced in October. In honor of the centenary year, the Science Museum is creating two more galleries with a yearlong program designed to take the renowned institution into the future.

Not content to trade on its past, the museum is actively planning for its future. In June, director Chris Rapley announced “Museum of the Future,” the Science Museum’s master plan for renovation and expansion of its current facilities, through an accompanying capital campaign. Key elements of the Museum of the Future will include the Beacon, a glass-and-light feature on the façade that will be visible far down Exhibition Road; SkySpace, an immense rooftop space where innovative interpretation programs will showcase the theme of cosmology; and two new galleries, Making Modern Communication and Making Modern Science.

Said Rapley, “As Britain increases investment in ‘high tech’ industries, the importance of the Science Museum will grow as a place to spark the curiosity and creativity of the scientists, engineers, and entrepreneurs of the future.” —Carolyn Sutterfield

Details: www.sciencemuseum.org.uk

INDIA’S MOTHER OF SCIENCE MUSEUMS—The first truly public scientific and industrial museum in India, the Birla Industrial and Technological Museum (BITM) in Kolkata, celebrates its 50th anniversary this year. BITM is the founding institution for India’s national network of 27 science museums and centers, the National Council of Science Museums (an ASTC member). Almost all of NCSM’s past and current leaders served or trained at BITM during their careers.

The museum’s exhibits recapitulate the story of scientific discovery and technological progress through scale models and demonstrations. Galleries feature life sciences, biotechnology, metals, electricity, physics, television, transportation, motive power, a mock-up underground coal mine, and a 3-D show theater. For its anniversary the museum unveiled new galleries on basic principles of science, an exhibition called A World in Darkness for students with vision loss, and an interactive projection globe showing the dynamic Earth and other planets. Two more galleries on mathematics and communication are being developed.

Visitors to BITM and its eight satellite locations comprise more than 1.32 million people a year. Those who can’t make it to the museum may be lucky enough to have it come to them. Since 1965, BITM and its satellites have operated mobile science units that bring selected exhibits to schools in rural areas. There are now nine such units, covering topics like the laws of motion, mathematics, and global change. The museum is also famous for its outreach to schools, its teacher training program, and its community service programs for challenged and underprivileged areas.

BITM is supported by a nominal entry fee and, like all NCSM museums, by funding from the Indian government. —Heather Sisan

Details: Emdadul Islam, director, eislam@ncsm.gov.in; www.bitmcal.org

A PLACE OF WONDER—On September 26, 1969, a radio signal that originated in a quasar 1.5 billion years ago triggered a laser to dramatically open the new Ontario Science Centre in Toronto, Canada. One of the first purpose-built, non-collections-based, interactive science centers, the new facility was heralded in the press as a “wonderland of science,” “touchable,”
and “a centre to awaken pride.”

Initial plans had called for a traditional museum of transportation and technology, but architect Ray Moriyama and chief designer Taizo Miake envisioned a more dynamic center for science, a living organism that would grow and change constantly. As Moriyama wrote, “The Centre must … arouse curiosity. It must lead to understanding not just knowledge. It must be a place of wonder. It must have immeasurable qualities of comfort and joy, of discovery with others. It must inspire the visitor with ideas through active participation. It must be an emotional experience, with intellectual satisfaction, and it must be fun.”

True to this vision, the Ontario Science Centre has changed dramatically in 40 years but has not strayed far from Moriyama and Miake’s original concept. Its 40-year history includes many elements in which staff take great pride, among them the following:

• The Ontario Science Centre is the most visited cultural institution in the province, a must-see destination for local visitors and tourists.
• Its visitors reflect the remarkable diversity of Toronto.
• The Ontario Science Centre Science School for students in their last two semesters of high school is celebrating its 27th year.
• 2006 saw completion of the most profound transformation in the museum’s history, the Agents of Change initiative.
• The museum has played a key role in developing some of the 2,000+ science centers worldwide.
• As host of the 5th Science Centre World Congress, the Ontario Science Centre played a key role in crafting the Toronto Declaration, the first collective statement of beliefs and commitment by science centers globally.

On September 26, the Ontario Science Centre observed its 40th birthday. As on opening day, thousands of visitors, young and old, flooded through the doors, joining with staff to celebrate this place of wonder and joy, where active participation and science engagement are encouraged for people of all ages.—Lesley Lewis

Details: www.ontariosciencecentre.ca/history/default.asp

THANKS, FRANK—It was in 1968 that physicist and educator Frank Oppenheimer first proposed to create a science museum in the newly renovated Palace of Fine Arts in San Francisco. His Exploratorium, a museum of “science, art, and human perception,” opened in November 1969, and the vaulted halls of the classical structure, the last remnant of the Panama Pacific Exposition of 1915, soon echoed with the shouts and laughter of delighted visitors.

Forty years later, there is no aspect of the science center field that has not been touched by Oppenheimer and his world of wonders. When museum visitors around the globe encounter a Distorted Room, a Tactile Dome, or an Anti-Gravity Mirror, they are enjoying experiences first created at the Exploratorium. Through published resources like the Cookbooks and traveling exhibitions like Bubbles, Memory, and Turbulent Landscapes, the Exploratorium has influenced the work of exhibit designers worldwide. Art and science have long met here in collaboration; visual and performing artists who have worked on-site include MacArthur “Genius” Award winners Ned Kahn and Walter Kitundu. The Exploratorium was the first independent museum to create its own web site; its 25,000-page www.exploratorium.edu now logs over 28 million visits a year.

Another area where the museum has had significant impact is teacher education. Starting with the Teacher Institute in 1983 and continuing with the Inquiry Institute in 1995 and the Center for Informal Learning and Schools, in 2002 (a collaboration with Kings College London and the University of California—Santa Cruz), the Exploratorium has been a rich resource for formal science education, hosting training programs for educators from elementary school through graduate levels.

Under director Goéry Delacôte (1991–2005), the museum instituted a rigorous assessment and evaluation program to study visitor learning.

Change is coming to the Exploratorium. Current director Dennis Bartels, who brought neuroscience into the museum with the 2008 permanent exhibition Mind, will soon preside over the institution’s transition to a new location on San Francisco’s busy Embarcadero waterfront (see “References for Renewal,” page 6).

But for the next year, visitors to the Palace of Fine Arts site can enjoy an array of 40th anniversary events, ranging from weekends of “Electrifying Science” with Dr. Megavolt and “Bubble Magic” with bubble troubadour Tom Noddy to Rewind, the release in podcast of recorded programs from the 1977–1991 Speaking of Music series, and Replay, a six-part series re-examining the museum’s 16mm film collection. And everyone can enjoy Physics of Toys, an interactive laboratory where visitors can explore favorite toys in a one-on-one workshop setting.—Caroly Sutterfield

Details: http://press.exploratorium.edu/40th-anniversary-press-kit/
On September 21, Georgina Ngozi, a 2008–2009 Noyce Leadership Fellow, became president and chief executive officer of the Brooklyn Children’s Museum, New York. The Brooklyn native returned to the museum, where she was director of education from 2002 to 2006, after three years as executive director of the Children’s Museum of the Lowcountry, Charleston, South Carolina. Ngozi also served as director of art education at the Children’s Museum of Houston, Texas, from 1997 to 2002. She succeeds Carol Enseki, who stepped down after 20 years of service to the Brooklyn Children’s Museum. Enseki became president of the museum in 1997 and recently led the $80 million fund-raising campaign to support its major expansion.

In October, Lynne Kennedy retired from her position as deputy executive director, education and exhibits, at the Reuben H. Fleet Science Center, San Diego, California. Kennedy began her career at the center as a part-time education coordinator in 1981 and had served in her deputy executive director role since 1998. She plans to spend her retirement writing.

The Science Museum of Minnesota, St. Paul, has chosen Sarah Olson as its new vice president of human resources. Olson comes to the museum with 15 years of human resources experience, including her most recent position as senior human resources consultant and strategic business partner at C.H. Robinson Worldwide, Inc., a transportation services provider in Eden Prairie, Minnesota.

Jenny Young was recently promoted to the position of education director at Science Central, Fort Wayne, Indiana. Young has spent 13 years in various managerial roles at Science Central, most recently as outreach manager. She succeeds Lou Papai, who is now program director at Sci-Port: Louisiana’s Science Center, Shreveport.

Kathy Lopus has joined Florida’s Orlando Science Center as director of development. Previously, Lopus was development director for the Shepherd’s Hope charity.