A Handbook for Youth Programs in Science Centers and Museums

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INTRODUCTION

HISTORY

In the final decade of the twentieth century, in partnership with the DeWitt Wallace – Reader's Digest Fund (now the Wallace Foundation), the Association of Science-Technology Centers launched a nation-wide initiative, YouthALIVE! (Youth Achievement through Learning, Involvement, Volunteering and Employment) to strengthen the capacity of science centers and museums to engage 10 to 17 year old youths. YouthALIVE! provided financial and technical assistance and professional development for science centers, natural history museums, technology centers, children's museums, aquariums, botanical gardens and zoos in developing, implementing and sustaining dynamic programs for and with adolescents.

Designed to extend access to long-term museum opportunities to adolescents, YouthALIVE! concentrated on engaging youth from underserved communities, particularly children of color and youth from low income communities. Although YouthALIVE! programs were developed well before the current afterschool movement, most of these programs effectively engaged high school students after school, on weekends and during the summer months. A majority are still operational and have adapted in name, size and/or activities to meet contemporary needs and resources.

For the initiative's first eight years, youth program staff from 72 YouthALIVE! science centers and museums participated in the YouthALIVE! Professional Development Network which met twice yearly, to share challenges, learn from each other and youth development specialists and to chronicle successful strategies.

Midway through the initiative, *YouthALIVE! in the Workplace*, a work-skills curriculum based on recommendations from the US Department of Labor's SCANS Report, was implemented. YouthALIVE! program leaders were encouraged to adapt these materials for use in training sessions with other staff and teens. The development and field testing of this curriculum for 14 to 17 year olds in museum-based programs was supported by the Hitachi Foundation.

What difference can these programs make?
Lynn Baum, George Hein and Marilyn Solvay,[1] in analyzing essays by teens participating in YouthALIVE! programs, found that:

- Teens do learn in these programs
- These museum experiences can be life changing
- Teens value highly the programs' relationships and mentoring
- Teens appreciate the opportunities to experience what others take for granted - being in the museum, meeting new people, trips, etc
- Teens are applying their museum program experiences as they prepare for young adulthood

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[1] *In Their Own Words: Teen Voices in Museums*
The Journal of Museum Education
ADOLESCENCE: GROWING UP IN MUSEUMS ; Volume 25, Number 3, Fall 2000
Issue Editor: Wendy Pollock, Association of Science-Technology Centers

ABOUT THIS HANDBOOK

Throughout the initiative, a myriad of local and national youth development resources, professionals, organizations, research and literature, helped the museum field develop a better understanding of adolescents, their needs and their communities. This handbook's core ideas on designing programs that support healthy youth development in museums largely grew out of YouthALIVE! experiences. They were culled from network meeting notes, annual and final program reports, interviews with staff and teens, teen essays and evaluation reports.

This handbook is a compilation of information, suggestions and tools for museum staff wishing to start or enhance a youth program or a museum-based afterschool program for teens. However, in light of the growing awareness of the value of high quality afterschool programs for younger children, perhaps some of the handbook's lessons, gleaned from successful museum-based YouthALIVE! programs, are also relevant to other organizations and agencies seeking to design developmentally appropriate afterschool programs that engage younger students.

A work in progress, this collection represents the input of former ASTC staff and countless youth program staff from science centers and museums throughout the United States, including those who were members of the YouthALIVE! National Network for Professional Development between 1992 and 2000.

As the YouthALIVE! programs grew, YouthALIVE! program staff at ASTC, Laura Benso, Anna Perez Pelaez, Tanya Tucker, Cassandra Johnson and DeAnna Beane, documented the program development experiences of YouthALIVE! museums. Thus the earliest drafts of this handbook were born and changed as the programs evolved. Subsequent drafts by Anna Perez-Pelaez formed the basis of text about program models and operational issues in the Program Design Module. The Fundraising Module was developed by Peggy Ruth Cole (from the first cadre of YouthALIVE! Network members), based on her successful development work while at the New York Hall of Science. Editing of that module was done by Stacy Shelnut-Hendrick (also in the first cadre of YouthALIVE! Network members while with the Brooklyn Children's Museum). The workskills manual, *YouthALIVE! in the Workplace*, was developed by Valerie Egzibher, after serving as the YouthALIVE! project director for Discovery Place in Charlotte, NC.

Recently all this earlier work was brought to completion by a team comprised of several members of the Youth Programs Forum on ASTC Connect. This team refined and expanded existing drafts into modules and developed additional modules for topics not previously addressed. Finally, because of the editing assistance of ASTC staff member Christina Jones, the handbook modules and appendices are now online and available on ASTC Connect.

Fortunately, the museum field can now benefit from a wider range of youth-related programs, policies, practices and resources. The handbook, as well as ASTC's Youth Programs Special Interest Group and the online Youth Programs Forum, are enriched by some of the more recently developed, high quality museum-based youth programs. Their continued involvement is essential to the growth of this community of practice; and the Youth Programs Forum on ASTC Connect can serve as a virtual community for discussing, modifying and expanding the handbook as needed.

Museums are evolving to meet the changing needs of their communities, so must our programs and tools!

APPRECIATIONS

This project and its completion in electronic format would not have been possible without the necessary financial resources and professional expertise. The Association of Science-Technology Centers is genuinely appreciative of all who contributed to this effort, particularly those whose contributions are described below.

- A decade-long investment by the *DeWitt Wallace-Reader's Digest Fund (now the Wallace Foundation)* brought YouthALIVE! programs to more than 70 science centers and museums and planning support to an additional 110 institutions in this field. That generous investment resulted not only in many institutionalized youth programs serving youth from underserved communities, but also in the knowledge base for this handbook.

- Additionally, support from The *Hitachi Foundation* enabled ASTC to develop, *YouthALIVE! in the Workplace*, a curriculum tool which adds focus and consistency to work-based learning programs in museums. This support moved the YouthALIVE! initiative from an abstract notion of workskills to a concept of workskills as a concrete set of behaviors to be incorporated in program design and operations.

- A number of colleagues in the museum field contributed to the handbook in significant ways. The following Youth Programs Forum members volunteered to write or revise modules or segments of modules and/or contribute sample materials:

  Cheronda Frazier (New Jersey Academy for Aquatic Sciences)
  Sarah Huschle (Pacific Science Center)
  Julie Johnson (Science Museum of Minnesota)
  Nina Nolan (formerly with Museum of Science and Industry)
  Angela Wenger (New Jersey Academy for Aquatic Sciences)

- Others participated in telephone interviews, reviewed drafts of modules or contributed sample materials to the appendices:

  Jamie Alonzo (Yale Peabody Museum of Natural History)
  Lynn Baum (Museum of Science)
  Jamie Bell (formerly with Exploratorium)
  Jessica Castiglioni (Saint Louis Science Center)
  Teresa Gonzalez-White (Lowry Park Zoo)
  Lisa Hoover (Chabot Observatory and Science Center)
  Kristen Kloth (Cincinnati Museum Center)
  Amy Robinson (Miami Museum of Science)
  Ryan Sullivan (Museum of Discovery and Science)
  JuWanda Thurmond (Children's Museum of Pittsburgh)
  Susan Tittlebaum (formerly with Louisiana Arts and Science Center)
  Galyn Walker (formerly with Lied Discovery Children's Museum)
  Aimee White (Lowry Park Zoo)

- DeAnna Banks Beane, who served as director of the YouthALIVE! initiative, assembled and worked with the above named team, contributed to the development of the modules, and was responsible for the production of this electronic handbook.

This work is dedicated to the young people from whom we have learned so much.
Thank You!

Module 1: CRITICAL BACKGROUND BRIEFS

ORGANIZATIONAL MISSION

When the mission of a science center or museum supports programs working with youth, it can be a very effective place not only for nurturing young people's interest in science, but also for promoting positive youth development and employment training, particularly for young people with few opportunities. Familiarity with the organization's mission statement is a prerequisite for all program planning. The following are examples of mission statements that not only address science, but also a commitment to engaging all ages, communities and/or diverse audiences. Clearly, any of these audience groups can include youth. Mission-driven commitments open the way for a conversation about an alignment between the organization and the programming designed to integrate youth from underserved and/or diverse communities into the organization's science-rich learning environment.

Mission Statements from Association of Science-Technology Centers (ASTC) Members:

- "*Carnegie Science Center* is dedicated to inspiring learning and curiosity by connecting science and technology with everyday life. The Science Center provides experiences that are entertaining, interactive, first hand, accessible, relevant and understandable. The Science Center strives to identify and meet the needs of the community in its full diversity." www.carnegiesciencecenter.org

- "*Pacific Science Center* is a not-for-profit science foundation serving one million people a year in every county of Washington state, inspiring a lifelong interest in science, math and technology by engaging diverse communities through interactive and innovative exhibits and programs." www.pacsci.org

- The *New Jersey Academy for Aquatic Sciences* promotes the understanding, appreciation and protection of aquatic life and habitats through research, education and youth development programs. www.njaas.org

- The mission of the *Brooklyn Children's Museum* is to engage children in educational experiences through innovation and excellence in exhibitions, programs, and use of its collection. The Museum encourages children to develop an understanding of and respect for themselves, others and the world around them by exploring cultures, the arts, science and the environment. www.bchildmus.org

- "The mission of the *Science Museum of Minnesota* is to invite learners of all ages to experience their changing world through science." www.smm.org

- *Miami Science Museum:* "We inspire people of all ages and cultures to enjoy science and technology, in order to better understand ourselves and our world." www.miamisci.org

- "The mission of the *Museum of Science, Boston* is to stimulate interest in and further understanding of science and technology and their importance for individuals and for society. To accomplish this educational mission, the staff, volunteers, overseers, and trustees of the Museum are dedicated to attracting the broadest possible spectrum of participants and involving them in activities, exhibits, and programs which will: encourage curiosity, questioning and exploration; inform and educate; enhance a sense

of personal achievement in learning; respect individual interests, backgrounds and abilities; and promote life-long learning and informed and active citizenship." www.mos.org

ASTC's Mission

The Association of Science-Technology Centers (ASTC) is an organization of science centers and museums dedicated to furthering the public understanding of science among increasingly diverse audiences. ASTC encourages excellence and innovation in informal science learning by serving and linking its members worldwide and advancing their common goals. ASTC provides professional development for the science center field, promotes best practices, supports effective communication, strengthens the position of science centers within the community at large, and fosters the creation of successful partnerships and collaborations.

NEW AUDIENCES

ADOLESCENTS DURING OUT-OF-SCHOOL HOURS

Who am I? What are my talents? Where do I belong? Who needs me? An effective youth program can help young people in their quest to discover answers to these usually unspoken questions.

Perhaps it is customary to think of school groups, families and adults, but not adolescents or teens, as traditional audiences for science centers and museums. Developing a museum-based program for the out-of-school hours for this new audience, requires us to quickly learn as much as possible about adolescents and their development. Adolescence is, as most adults know, a time of change on the physical, hormonal, intellectual and social levels. However, few know, other than researchers, how these changes occur, how the rate of change may vary among adolescents, and what conditions help or hinder healthy transitions during this period.

> *"Understanding adolescent development and the factors contributing to the healthy development of all young people is critical to the design and implementation of community programs for youth."*
>
> Community Programs to Promote Youth Development, page 5
> www.nap.edu/catalog/10022.html

When ASTC began their youth programming initiative in 1996, the developmental needs of young adolescents, as summarized by The Center for Early Adolescence at the University of North Carolina at Chapel Hill, was a helpful, easy to understand tool. Today there are many "user-friendly" resources available on adolescent development; a few are listed at the end of this module.

The Committee on Community-Level Programs for Youth, appointed by the National Research Council and Institute of Medicine, released its comprehensive report, *Community Programs to Promote Youth Development*, in 2002. The report includes rich discussions of research on the personal and social assets that promote positive and healthy development in adolescents, as well as discussions of the qualities of settings or environments that promote positive youth development. The National Academy of Sciences publication is available for purchase or for chapter review at www.nap.edu/catalog/10022.html.

The Committee on Community-Level Programs for Youth grouped the assets and summarized the groupings with practical descriptors to identify the personal and social qualities that help young people successfully move from childhood through adolescence into adulthood.

PERSONAL AND SOCIAL ASSETS THAT FACILITATE POSITIVE YOUTH DEVELOPMENT
Community Programs to Promote Youth Development - Chapter 3

- *Physical Development:* Good health habits and good health risk management skills
- *Intellectual Development:* Knowledge of life skills; vocational skills; school success; critical thinking; reasoning, and decision-making skills; in-depth knowledge of more than one culture; skills to navigate through multiple cultural contexts
- *Psychological and Emotional Development:* Good mental health; emotional self-regulation skills; coping and conflict resolution skills; mastery motivation; confidence in personal efficacy; willing to plan for the future; sense of responsibility for self; realistic optimism; coherent and positive personal and social identity; culturally sensitive values; sense of larger purpose in life; strong moral character; commitment to good use of time
- *Social Development:* Perceived good relationships and trust with parents, peers and some other adults (connectedness); sense of being connected and values by larger social networks; attachments to prosocial institutions like schools, church, non-school youth programs, etc.; ability to navigate in multiple cultural contexts; commitment to civic engagement

The quality of environments that support young people in developing these personal and social assets are grouped and described as:

FEATURES OF POSITIVE DEVELOPMENTAL SETTINGS
Community Programs to Promote Youth Development - Chapter 4

- *Physical and Psychological Safety:* Safe, healthy facilities; safe peer group interaction
- *Appropriate Structure:* Clear and consistent rules and expectations; clear boundaries; continuity and predictability; age appropriate monitoring
- *Supportive Relationships:* Warmth, closeness, connectedness, caring, support, guidance, good communication, secure attachment; responsiveness
- *Opportunities to Belong:* Opportunities for meaningful inclusion regardless of gender, ethnicity, sexual orientation or disability; social engagement and integration; opportunities for socio-cultural identity formation; support for cultural and bicultural competence
- *Positive Social Norms:* Rules of behavior, expectations; procedures, values and morals; obligations for service
- *Support for Efficacy and Mattering:* Youth-based empowerment practices that support autonomy; making a real difference in the community; being taken seriously; being given responsibility and meaningful challenges; program practices that focus on improvement rather that remaining at current performance levels
- *Opportunities for Skill Building:* Opportunities to learn physical, intellectual, psychological, emotional and social skills; exposure to intentional learning experiences; opportunities to learn cultural literacies, media literacy, communication skills, and thinking skills; preparation for adult employment; opportunities to develop social and cultural capital

Module 2: Program Design describes program elements that reflect not only recognition of the assets that adolescents need for their positive or healthy development, but also how a museum program can be shaped to encompasses many of the above environmental features that nurture development of those assets essential to the transition from adolescence to productive adulthood.

Resources on Youth Development

American Youth Policy Forum (AYPF)
http://www.aypf.org
This nonprofit, nonpartisan professional development organization based in Washington, DC, provides learning opportunities for policymakers, practitioners and researchers working on youth and education issues at the national, state and local levels. The website includes many online research-based publications.

Forum for Youth Investment
http://www.forumforyouthinvestment.org/
The Forum for Youth Investment is a nonprofit, nonpartisan organization dedicated to helping communities and the nation prepare young people for college, life and work by the time they reach age 21. The Forum recognized that this goal requires that young people have the support, opportunities and services needed to prosper and contribute where they live, learn, work, play and make a difference. To this end, The Forum provides organizations, government agencies, adult leaders and youth with the information, technical assistance, training, network support and partnership opportunities needed to increase the quality and quantity of youth investment and youth involvement. The Forum's online and print youth development resources publications are timely, research-based and practical.

Community Programs to Promote Youth Development
www.nap.edu/catalog/10022.html
This 2002 report was a 2-year project in which the Committee on Community-Level Programs for Youth evaluated and integrated the current science of adolescent health and development with research findings related to design, implementation and evaluation of community programs for youth. For this report, communities could include neighborhoods, blocks, towns, cities and those communities that are defined by values, family connections, or shared interests, but could not include geography. A set of four core concepts formed the foundation of this comprehensive report:

- Some youth are doing very well
- Some youth are taking dangerous risks and doing poorly
- All youth need a variety of experiences to develop to their full potential
- Some young people have unmet needs and are particularly at risk of participating in problem behaviors (e.g., dropping out of school and participating in violent behavior)
    - These include young people who often live in high-risk neighborhoods, live in low-income families, experience repeated racial, religious and ethnic discrimination and have a substantial amount of unsupervised time during out-of-school hours
    - These also include young people with disabilities, from troubled family situations and with special emotional support needs

The report is available for online purchase and per chapter reading for free.

National Research Council and Institute of Medicine. (2002). Community Programs to Promote Youth Development. J. Eccles and J. Gootman, eds. Board on Children, Youth and Families, Division of Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

Search Institute
http://www.search-institute.org/
Search Institute is an independent nonprofit organization whose mission is to provide leadership, knowledge and resources to promote healthy children, youth and communities. To accomplish this mission, the institute generates and communicates new knowledge as well as bringing together community, state and national leaders. Since 1989, Search Institute's exploration of the developmental needs of youth has been the framework of developmental assets, the positive experiences and personal qualities that young people need to grow up healthy, caring and responsible.
http://www.search-institute.org/content/40-developmental-assets-adolescents-ages-12-18

Museums and Libraries Engaging America's Youth: Final Report of a Study of IMLS Youth Programs, 1998-2003.
http://www.imls.gov/pdf/YouthReport.pdf.
This Institute of Museum and Library Services (IMLS) study, is part of IMLS's initiative, Museums and Libraries Engaging America's Youth. It examined Institute-funded programs for youth aged 9-19 and surveyed nearly 400 museum and library programs on their goals, strategies, impact and outcomes.

The study, released in December 2007, found that museums and libraries bring unique assets to youth development. These assets include dedicated, knowledgeable staff; authentic objects, artifacts and information resources; opportunities for personalized, hands-on learning; support for cognitive and social development; and experiences to help parents, families and caregivers make learning fun and rewarding. According to the study, the most effective youth programs:

- Include long-term, trusting and supportive relationships between and among youth, staff, and other adults
- Partner with community-based organizations and other cultural institutions
- Substantively involve youth in program design and decision making
- Regularly assess or evaluate to improve the program and strengthen other youth development efforts

DIVERSITY

Diversity here can include socio-economic background, culture, race, ethnicity, religion, gender, sexual orientation, physical/cognitive development and physical ability.

Diversity and the Museum

Our perceptions of the world and its people are shaped by the norms, language, customs and values of the family, institutions and communities in which we grew up. Since each of us views other people, places and situations through our own cultural lens, it is quite likely that the cultural lens of the museum and its staff will differ from that of young people from underserved communities. Historically, the families of most of these young people have not been regular museum visitors. Language, colloquialisms, celebrations, heroes/heroines, music, worship practices, travel experiences and leisure activities can be quite different. How can we develop museum-based youth programs that allow everybody to work together with the aid of an evolving common lens?

For some staff, the idea of any group of teens spending out-of-school hours in the museum exhibit halls may be unnerving. We can surmise that even the traditional teen volunteer programs (for those with family memberships) were not initially welcomed by all staff. Over time, however, as museums began to experience the positive benefits of the energy and loyalty that teens can bring, most moved beyond those initial uncertainties.

Nevertheless, still unfathomable to many staff members may be the idea of recruiting teens who differ from the usual museum visitors, members and staff, in ethnic, cultural, racial or socio-economic background. Yet these youth are the audience for our long-term engagement youth programs. These are the young people with least access to opportunities that nurture positive social, economic and intellectual development.

With any group of adolescents, we must be prepared to work with differences in the rate of physical, intellectual, social and intellectual changes; but inclusion of an underserved teen audience will require more than highlighting aspects of adolescent development for staff.

Inclusion—intentionally creating and maintaining a museum environment that is welcoming to and accepting of underserved populations—is a highly important, but often neglected, task. Ideally, sustained attention to issues of diversity, including differences, similarities, expectations and biases, as well as institutional/program policies and practices should be integrated into a museum's professional development program for all staff. The ASTC Equity and Diversity Toolkit, found online in the ASTC Resource Center, offers basic information and comprehensive collections of annotated resources for science centers and museums seeking tools for developing institutional and personal competence with diversity. This Toolkit is undergoing revisions and will be repost when complete.
http://www.astc.org/resource/equity/index.htm

However, the following section is particularly relevant to youth program staff seeking to enhance their personal competence with diversity. These resources are drawn from several sources, including the ASTC Equity and Diversity Toolkit, experiences of the YouthALIVE! Professional Development Network members and the ASTC Conference Fellowship Program.

Respect and Connectedness: Essential Ingredients for Inclusion

Feeling respected and connected are essential to the sustained engagement of teens in any program. When the museum has not been accustomed to having teens of color or teens from low-income communities "in-house" regularly, youth program staff should not be surprised to find unconscious negative attitudes and subtle negative actions by some staff and visitors. It is important, however, to know that these negative interactions can generate feelings of isolation and/or defensiveness among the teens, and youth program staff should be expect to intervene between the young people and with museum staff.

These are young people who are already somewhat isolated because they come from communities that are underserved by mainstream society's institutions. Much of this handbook's Program Design section is intended to guide the development of an infrastructure that nurture teens' sense of connectedness – to the museum, to each other, to staff, to their communities and to museum audiences.

Staff members committed to a more inclusive museum environment recognize that, if there is to be a "leveled playing field" for the young people in their program, they (the staff) have a major role to play organizing training, experiences, contacts, supports and recognition that help these young people feel that they are a valued part of the museum's in-house community. They design their programs knowing that these young people may require additional experiences and support, and that the program will need allies and advocates among the general staff. Experiences of others in the museum field tell us that the cultivation of allies can be accomplished through one-on-one conversations, special invitations, intervention by senior staff and in some cases, well-planned diversity training.

Museum staff members, particularly those working effectively with youth programs, have employed a variety of strategies to help develop their own personal diversity competence. Through cross cultural discussions, films and readings, workshops, conferences, partnerships with community-based organizations, field trips into communities, networking with colleagues in other museums and, of course, informal conversations with the teens and their parents, many are more easily able to value and respect the differences in others. They are also more able to identify and build on the values and ideas that we all have in common. This ongoing professional development has helped them become more aware of the impact that their behavior can have on others, particularly on the teens. They have a better understanding of communication style differences and are more aware of the ways in which their communication style may affect others whose backgrounds may differ from theirs.

Achieving diversity competency is an ongoing process. Populations shift, communities change, neglected societal inequities are revealed, laws are revised, etc., but the constant need for diversity competent staff members and their continued effort to progress from being unaware to valuing and respecting the differences of others.

The ASTC Equity and Diversity Toolkit reminds us that staff with personal core competencies:

- Act professionally toward others at work and in the community who do not share their values or beliefs
- Acknowledge the dynamics of privilege, power, discrimination and personal experience in relation to others
- Understand characteristics of diverse populations, without resorting to stereotyping
- Treat colleagues and community members fairly, respectfully and equitably
- Challenge discriminatory actions or speech that create a hostile work or learning environment because of one's diversity
- Continuously expand cultural knowledge and engage in activities that increase understanding of cross-cultural values and systems
- Recognize that their style of communication and conflict resolution may inhibit or enhance interaction with others who are different
- Use effective means to foster trust between persons and groups

Diversity and the Young People

Finally, since this handbook focuses on work-based learning programs for teens, a word about helping young people develop the interpersonal skills essential to succeeding in the program, in the museum and in an increasingly diverse general environment. Although the participants may all live in the same community or neighboring communities, they may go

to different schools. At a minimum, they are likely to represent racial, ethnic, educational, geographic, linguistic and socio-economic diversity. The museum program may be the very first time they have met one another.

Consequently, in planning programs for and with teens, opportunities to work on the following diversity competencies selected from the above list for adult staff are vital. Program components should include activities, discussions and feedback that foster interpersonal skills that enable teens to:

- Act professionally toward others at work and in the community who do not share their values or beliefs
- Treat colleagues and community members fairly, respectfully and equitably
- Continuously expand cultural knowledge and engage in activities that increase understanding of cross-cultural values and systems
- Recognize that their style of communication and conflict resolution may inhibit or enhance interaction with others who are different
- Use effective means to foster trust between persons and groups

DIVERSITY RESOURCES

ASTC's Equity and Diversity Toolkit
http://www.astc.org/resource/equity/index.htm
The annotated resources in this toolkit were complied to provide ASTC members with access to variety of diversity-related tools in the areas of: leadership support, assessment, communication, professional development, career pipeline and implementation roles and responsibilities. This Toolkit is undergoing revisions and will be repost when complete.

Diversity Resource Center
http://www.diversityresources.com
This organization offers professional training and resources for establishing functionality and efficiency in the diverse and multicultural workplace.

National Association for Multicultural Education (NAME)
http://www.nameorg.org
NAME's main objective is to give educators support and knowledge for working with multiethnic students. The NAME website includes an extensive resource center of online articles.

Tolerance.org
http://www.tolerance.org; http://www.tolerance.org/101_tools/index.html
This organization is well known as a resource for people interested in dismantling bigotry and valuing diversity within oneself, at home, at school, at work or within the community. The website offers guidebooks for all ages, resources, downloadable public service announcements and games for young children. "101 tools for Tolerance…" offers simple ideas for promoting diversity and has been used by museum staff.

Youth Service California
http://www.yscal.org
The Diversity in Service Learning Inventory, produced by Youth Service California is available for purchase through the publications page on the website's resource center. A

second relevant resource, The Diversity in Youth Service Programs Tool Kit, is designed to support youth service programs in becoming more aware and knowledgeable about diversity issues within their programs, schools, organizations and community partnerships. Developed by Youth Service California and respected diversity trainers Bettina Mok and Dave Nakashima, the kit includes best practices, assessment and action planning tools, annotated resources and a framework for training and discussion. For information on the toolkit Contact: Phone: 510-302-0550 or by Email: info@yscal.org.

Note: For the purposes of this Tool Kit, the term diversity refers, but is not limited, to differences between people and groups in terms of their ethnicity, age, gender, cultural practices, sexual orientation, physical and learning abilities, workplace hierarchy, spiritual beliefs, socio-economic status, educational background, geographic location, work experience and language.

COMMUNITY PARTNERS

Unless there is a history of collaborating with the community, museums and science centers, by their very nature, may have little access to, and no practical knowledge of underserved communities and the young people residing there. A community-based organization can serve as a critical link between the museum or science center and the residents of an underserved community. *Module 2: Program Design: Part 2: Meeting Mission and Need* discusses collaboration with community-based, youth-serving organizations for the needs assessment and program planning phases.

Museums have used a variety of routes to locate the most appropriate and willing partner for a new youth program. Some municipalities have a local government agency, usually a division of youth affairs or a youth council, that is aware of the most stable youth-serving organizations serving specific communities. Local funders like The United Way maintain records on youth-serving organizations and encourage the possibility of expanded program options for one or more of these organizations. Additionally, it is usually not difficult to find the local Boys and Girls Clubs, the Girls Scouts, the YMCA, the YWCA, Girls Inc, community centers, recreation departments and other social service organizations with afterschool programs, including those operated by churches and other houses of worship.

However, in addition to assistance with planning, recruitment and evaluation, community-based organizations can serve other roles vital to the young people's success. By working with these organizations, "outsiders" can be introduced to the customs, values and strengths of local underserved communities. These organizations are more likely to be linked to other local resources that can assist when teens face challenges that exceed the expertise of the museum's youth program staff. Museum-based youth programs have not only recruited teens through community partners, but have also supported those teens in introducing science into the afterschool programs of those community organizations.

From collective experience of YouthALIVE! programs, we learned that community collaborations:

- Are crucial in helping a program meet teen needs
- Begin with a conversation; Face-to-face interaction is important
- Must center around a common need and be mutually beneficial
- Require open minds and flexibility

- Require time and effort to develop trust
- Require mutual respect
- Depend on a willingness to learn from and be open to other cultures
- Can provide access to community leaders
- Evolve and change
- Provide critical insight into the real needs of the community
- Can foster advocates and ambassadors in the underserved communities
- Can contribute to the diversity of museum audiences and staff
- Can enhance museum's credibility in the community

Summarized from YouthALIVE! Program Profiles

COMMUNITY PARTNERSHIPS RESOURCE

"Developing Partnerships for Service-Learning: Starting Points for Community-Based Organizations (Expanded)"
http://www.servicelearning.org/instant_info/fact_sheets/cb_facts/developing_partnerships/
This online fact sheet, disseminated by Learn and Serve, America's National Service Learning Clearinghouse, was developed for community-based organizations seeking partners for service learning projects. However, it also contains very practical insights that would be helpful to museums as well. Topics include: What Makes Partnerships Work? How Do You Shape a Partnership? What Kinds of Problems Face Partners and How Can They Be Dealt With? What Kinds of Partnerships Are Most Effective? And, How Do We Get Started?

STAFFING FOR YOUTH PROGRAMS

Whether a youth program will be staffed by members of the museum's education, outreach or visitor services departments; or by someone hired from outside the museum, our more recent experiences with museums confirm the responses that teens several decades ago gave when asked about the qualities they considered important for program leaders. Below are some of their answers, paraphrased, followed by our own observations. Youth Program staff should be:

- Independent: someone who is genuine with students because they are secure in themselves
- Flexible: someone who is willing not to be in control all the time and can be friends with teens and advisors simultaneously
- Generous: Someone who is willing to give extra time to teens
- Enthusiastic and have a good sense of humor
- Good listeners: not someone who pretends to have all the answers
- Reliable: someone who is always there and on time
- Motivated: someone who is willing to go the extra mile to help teens reach their goals
- Trusting: someone who gives teens the benefit of the doubt and has a genuine interest in everybody
- Good leader: someone who can direct students into positive action and give information about alternatives

The young people's responses not only reflect more recent research findings, but confirm our experiences in science museum youth programs. We have found that adolescents need adult leaders who:

- Feel comfortable around teens
- Are not intimidated by science
- Care about the young people and their lives
- Believe in the potential that each young person brings
- Are flexible enough to be willing to learn from young people
- Are respectful of young people and their parents
- Expect respect from the young people
- Hold high expectations and are committed to helping young people meet them
- Are willing to serve as a role model and mentor
- Have knowledge, skills and behaviors that young people will want to acquire
- Are team players with teens and with other staff
- Are willing to cultivate allies and advocates for the program
- Can initiate and maintain healthy relationships with organizations serving the young people's communities
- Are enthusiastic about the museum or science center as a good environment for youth development and youth employment training

Although it is unlikely that any one person is able to embody all of these qualities all of the time, it is helpful to at least be aware of the qualities which contribute to a stable, supportive environment in which adolescents can safely acquire the knowledge, skills, responsibilities and confidence needed for transitioning into productive young adulthood.

Does youth program staff need a background in the sciences? Although this is an important consideration for science centers and science museums, there is no one answer that fits all situations. The ideal candidate would have a college degree in one of the sciences or in science education, and would demonstrate the skills and passion for working with underserved youth, in informal learning environments. In some science museums new youth programs were led by a science educator who hired someone with youth development experience to coordinate the program and work closely with the teens. In other programs, a youth development specialist led the program, with support from some of the museum's scientists and science educators. This arrangement can be frustrating when science specialists are too busy or when museum policy requires the youth program to use its limited funds to pay for time members of another department spend working with the teens.

Assess the museum's human resources to determine what kind of small team can be assembled to support the youth program, regardless of if the plan is to hire one outside person. Internal staff expressing interest could be invited to share in some aspects of the planning, and there could be an agreement on how the costs might be shared, if necessary.

"Where do we look for people with these qualities?" First, there are key considerations related to the program itself. Financial resources will be a major determining factor in the size of the program, the number of young people served and the number and roles of program staff needed. Since smaller youth programs have been found to be more effective, plan for an initial staff of two, with at least one being full time. Staff turnover is an unfortunate reality that can be somewhat offset by having at least two staff involved.

Now knowing that the program might need a staff of two, the next step would be to develop position descriptions, beginning with the full time position. The second description can be developed later with the full time person participating in the process. The position can be posted internally and existing staff who might be interested and who fit the criteria should be invited to apply.

A number of science centers and museums have used the launch of a new program, as an opportunity to increase staff diversity. Many have seen this as particularly fitting when the program is structured to increase the audience diversity. In the case of recruiting diverse staff for a youth program, the museum must be intentional in getting the announcement out into various communities. Local ethnic media, youth serving community–based organizations, the local Urban League, churches, social/professional organizations, local school and even city government agencies could help get the word out. Organizations that contributed to the program planning process may have a vested interest in the beginning program and may be particularly helpful in the search for the right staff.

No matter who the staff is, the program will benefit from ongoing professional development and support. A growing number of colleges and universities now offer certificate programs in Youth Work, and these may become resources for recruiting youth program staff. With the help of university certification programs or local professional development programs for youth workers, professionals trained in the sciences are able to complement their science knowledge with an enhanced understanding of youth and their developmental needs.

RESOURCES

Academy for Education (AED)
http://nti.aed.org/
AED's National Training Institute for Community Youth Work (NTI) has organized the BEST (Building Exemplary Systems for Training Youth Workers) Network. Cities in the BEST network offer youth development training and other professional development opportunities to better equip youth program staff to serve young people from a developmental approach. Participants in the youth development trainings come from all types of youth-serving settings including school-based after-school programs, residential juvenile justice facilities, parks & recreation centers, faith-based programs, independent out-of-school time programs and many others. There are 32 communities currently offering youth development training for their youth workers.

Association of Science-Technology Centers (ASTC)
ASTC resources that can support professional development of youth program staff include:

- ISEN – ASTC - L, the online listserv for informal science educators http://www.astc.org/profdev/listserv.htm
- Science Center Basics, an online introductory course to working in science centers http://www.astc.org/astc_connect/login/index.php
- ASTC Dimensions, a bimonthly news journal http://www.astc.org/pubs/dimensions.htm
- ASTC RAPS, weekend seminars and workshops hosted by ASTC members http://www.astc.org/profdev/raps/index.htm
- ASTC's Annual Conference http://www.astc.org/conference/index.htm

American Museum of Natural History (AMNH)
http://www.amnh.org
AMNH developed *Seminars on Science*, its online teacher professional development program, in order to connect educators across the United States and around the world to cutting-edge research and to provide them with powerful classroom resources. The program consists of eight online graduate courses in the life, Earth, and physical sciences. Online courses rich with imagery, video, interactive simulations and vibrant discussion connect learners to the Museum's scientists, laboratories, expeditions and specimens. Courses are co-taught by Courses are co-taught by an experienced educator and a Museum scientist.

University of Wisconsin-Milwaukee School of Continuing Education
sce@uwm.edu or call 1-800-222-3623
The Youth Work Learning Center is a partnership involving the Wisconsin Association of Child and Youth Care Professionals, the University of Wisconsin-Milwaukee School of Continuing Education and dozens of community organizations. *The Youth Work Certificate* is the first interdisciplinary program for the study of the principles of youth work in the United States. The program is available to students in Social Work, Educational Policy and Community Education, Exceptional Education and Educational Studies. It is ideal for student who wants to learn more about adolescence and working with youth in a variety of settings.

Module 2: PROGRAM DESIGN

Part A: Models

OVERVIEW

Proven Program Models in Science Centers and Museums
Variations of *Hands-on Educational Enrichment* and *Work-Based Learning*, two broad categories of museum-based youth programs identified in an early evaluation of the YouthALIVE! Initiative (http://www.astc.org/resource/youth/index.htm) can be observed in numerous science centers and museums today. An overview of these general program types is a good way to begin research in program design. The discussions following the summarizing chart, *Program Types, Formats and Activities* provide more details and links to specific programs that illustrate the program type described.

Although this handbook focuses primarily on work-based learning programs, because of the heightened interest in afterschool programs that extend and enhance learning, this section begins with an introduction to museum-based educational enrichment for younger adolescents. A visit to the following websites can provide helpful planning frameworks for anyone starting up an afterschool program.

- Afterschool Alliance: www.afterschoolalliance.org
- AfterSchool.gov: Connects providers to federal resources, www.afterschool.gov
- Promising Practices in Afterschool: www.afterschool.org
- National Institute for Out-of-School Time: www.niost.org
- Coalition for Science Afterschool: http://www.scienceafterschool.org/
- Concepts to Classroom: A website containing online workshops of which one is on afterschool programming, http://www.thirteen.org/edonline/concept2class/index.html

PROGRAM TYPES, FORMATS AND ACTIVITIES

Program Types	Minimum Age Range	Format of Core Program	Examples of Activities in Core Program	Examples of Possible Outcomes
Hands-On Educational Enrichment: Structured Opportunities for Working Intensely with Materials or Objects	10-13 (most common)	• Clubs • Camps • Classes	• Science Activities • Art Activities • Field Trips • Projects • Exhibit Production	• Heightened Motivation • Increased Interest in Learning
	14-17 (less common)	• Clubs • Classes • Workshops • One-on-One Mentoring by Staff Professionals	• Scientific Investigations and Research • Field and Lab Work Projects • Exhibit Design and Construction	• Understanding of Specific Concepts • Development of Inquiry Skills • Career awareness
Work-Based Learning: Opportunities to Learn New Skills and Information While Helping Others	14-17 (most common)	• Explainers	• Orientation and Training • Interpreting Exhibits • Assisting Visitors & Staff • Conducting Demonstrations	• Job Skills • Self-Confidence • Heightened Communication Skills • Expanded Knowledge Base
Work-based Learning	16-18	(Extensive experience in enrichment or explainer programs is usually a prerequisite for these formats) • Apprentice-ships • Teaching Assistants • Internships • Part-Time Jobs	• Assisting in Science Center Classes • Working in Science Center Store • Assisting with Exhibits Maintenance • Assisting in Setting up Exhibits • Front End Evaluation of Exhibits	• Job Skills • Career Development • Extensive Knowledge of the Science Center

HANDS-ON EDUCATIONAL ENRICHMENT PROGRAMS

Hands-On Educational Enrichment Programs generally take the form of after-school programs, camps and clubs. Through structured programs offering activity-based educational enrichment, younger adolescents (10 to 13 years old) can take advantage of the resources available in the science center or museum, without the traditional requirement of an accompanying adult. On a developmental level, these types of programs allow younger teens to focus on building a foundation for academic achievement and social skills. Although camps traditionally run during the summer months, meeting with youth only in the summer is not enough to sustain a relationship, maintain an interest in science or to develop the positive academic and social skills that can be life altering. These young people need year-round, out-of-school activities that offer exposure to a variety of engaging activities, projects and experiences that will build and maintain learning momentum. A club format suggests that the participants have a significant role in planning certain aspects of the activities, even if the focus is science.

Examples:

- Brooklyn Children's Museum: http://www.brooklynkids.org/index.php/afterschoolandsummer/afterschoolandsummer
- Children's Museum of Pittsburgh: http://www.pittsburghkids.org/Templates/CMP_Level3_List.aspx?CID=394&SECID=4&MENUID=266)
- Museum of Science Boston, Computer Clubhouse: http://www.computerclubhouse.org/index.htm

Many community-based organizations (CBOs) that work closely with underserved populations, have been interested in programmatic enhancements for their afterschool programs and have partnered with science centers/museums. Frequently, during the program's start-up years, participants for science centers' youth programs are recruited from these CBOs. In some cases the CBO partner schedules sessions in which the teens and science center staff bring hands-on science activities to elementary school age children who participate in the CBO's afterschool and summer programs.

Examples:

- Chabot Space & Science Center, Galaxy Explorers program http://www.galaxyexplorers.org/
- New Jersey Academy for Aquatic Sciences, C.A.U.S.E. program http://www.njaas.org/Community/CAUSE.html
- Carnegie Science Center (Pittsburgh), Science in Your Neighborhood program http://www.carnegiesciencecenter.org/default.aspx?pageId=157

Recent publications have focused on the challenges and importance of engaging and retaining older youth in enrichment activities. Special attention is made to the decline of participation that occurs as kids near the end of middle-school. Enrichment-only programs for these youth, 14-18, do exist and contain many of the same elements as the programs for younger youth. One important difference may be that teens have more involvement in the selection of topics to be pursued, or another may be the that the academic rigor in these programs not only extend what young people have access to in their schools but also enable them to succeed in the in-school environment in different ways. Check the Resources section for articles of interest.

Examples:

- Yale Peabody Museum, EVOLUTIONS program http://www.peabody.yale.edu/education/afterschool.html

- Academy of Natural Sciences, WINS program
  http://www.ansp.org/education/special_programs/wins.php

Advantages of Enrichment Programs	
Science Center's Point-of-View	**Young Person's Point-of-View**
These types of programs can: • Increase the science center's visibility and credibility in schools and the community • Help science center staff develop skills in working closely with underserved children from their communities • Broaden the science center's audience and, eventually, support base • Inform science center's exhibit and program development for this audience	Young teens: • Have fun while learning science skills and concepts that they'll be able to transfer to other experiences • Develop confidence in themselves as learners • Enhance their social skills through activities that foster cooperation, understanding, and appreciating others Older teens: • Can serve as role models and mentors • Gain experience by assisting staff in planning for and teaching younger peers

The staff to youth ratio varies depending on age. In general, look to have a 1-to-15 ratio for programs with youth ages 14 and up and a 1-to-10 ratio for programs with ages 10-13.

WORK-BASED LEARNING PROGRAMS

Research tells us that adolescence is a time when young people are trying to figure out where they fit in the world. Who needs them? What special talent can they offer to the world? At the science center or museum, with sufficient training and support, they can be engaged in meaningful and authentic work. They will begin to understand that their museum needs and wants them. While learning to be effective exhibit explainers, demonstrators, teaching assistants and outreach workers, teens are becoming more science literate and are contributing themselves to the experiences that their institutions offer the public. Through carefully designed job-training components of these programs, young people in these programs are developing transferable workplace skills, as well as science knowledge. With help, they are ready to think about their future learning and work goals.

Many youth programs are composites of four program types and formats which include:
1) Explainer
2) Demonstrator
3) Internship, Apprenticeship & Mentor
4) Cross-age Teaching
Each is described below.

EXPLAINER PROGRAMS

Examples of Explainer Programs:

- Exploratorium, Explainer Program http://www.exploratorium.edu/programs/explainer/program_info.html
- New York Hall of Science http://www.nyscience.org/join_getinvolved/www.nyscience.org/SCL

Explainers enrich visitors' experiences by encouraging interaction with the exhibit. They help visitors extend their learning experience by explaining the concept of an exhibit or model, and facilitating engagement with the exhibit. Explainers enrich visitors' experiences by encouraging interaction with the exhibit. They may ask probing questions to facilitate personal inquiry or provide other assistance. By engaging in their own informal learning--ongoing work with specific exhibits, additional reading and consulting with specialists--some Explainers become *experts* on certain topics.

These programs are work-intensive, but appealing to teens, science centers, and many visitors. Training, staff supervision and support are critical for this type of youth program which lends itself to weekend and summer employment. (It's more difficult to maintain a successful Explainer program after school since explaining is no fun for teens when the science center has few visitors. However, these young people can be valuable resources for science centers with on-site afterschool programs for younger children.) To prevent boredom, - especially for new Explainers - programs often rotate the Explainers among the exhibits. A minimum age of 14 is advised for Explainers, even for volunteers. Younger teens require more vigilant and consistent supervision and shorter work shifts.

Don't be fooled by what may seem like a simplistic youth program model. In order for youth to be successful, substantial content training and modeling by staff of what a 'good explainer' looks like is key. As further detailed *Module 2: Part D: Core Content-Curriculum*, training in communication skills is also very important. Learning to engage visitors in dialogue, understanding how people use exhibits, handling visitors' questions, etc., are all part of a knowledge base that these young people will need. In addition, the training

program for Explainers should culminate in a series of job shadowing with experienced Explainers before going solo. A manager of the Explainer Program at the Exploratorium in San Francisco once broke 'explaining' down into levels:

Level 1: Being There: Simply being present in an exhibit section says to visitors that there are explainers on staff who are available for help and to answer questions.

Level 2: Modeling: Demonstrating how the exhibits can be used and played with shows visitors, in a non-pedantic way, how they might also interact with the exhibits.

Level 3: Facilitation: Respectfully watching and listening to visitors can provide entry points for explainers to begin conversations and occasionally show visitors which buttons to push.

Level 4: Explaining: Approaching visitors who are interacting with exhibits that explainers are well-versed in and excited about provides explainers with opportunities to try out what they have learned and practice interacting with a variety of people.

Suggested Staff to Youth Ratio: 1 staff per 15 youth

Advantages of Explainer Programs	
Science Center's Point-of-View	**Teen's Point-of-View**
Explainers: • Enhance and add vitality to the visitor experience, especially for children and families • Make a statement about the science center's commitment to the community • Observer and identify broken exhibits and assist with facility maintenance • Help prevent abuse of the exhibits by visitors • Provide much-needed services to the science center at a very reasonable rate of pay • Diversify the science center's staff • Are poised to become advocates/ambassadors for the science center • Demonstrate the capacity of young people	Through a well-designed Explainer experience, a young person can: • Acquire an understanding of certain concepts and the interpersonal skills to present them to different audiences • Become aware of their individual learning styles and how to further develop them • Become an important member of a community institution and receive positive attention from community, family and friends for their contributions • Gain communication skills that can enhance their self-image, confidence and willingness to interact with adults and groups • Get bona fide employment experience with a stipend, build a resume or portfolio and prepare them for his/her next job

DEMONSTRATOR PROGRAMS

Examples of Demonstrator Programs

- New York Hall of Science, Career Ladder program http://www.nyscience.org/nyhs-pressroom/pr-programspotlight/pr-explainer.html
- Roger Williams Park Zoo, Zoo Crew program http://www.rogerwilliamsparkzoo.org/get_involved/zoocrew.cfm

Demonstrators can provide an interactive link to a particular exhibit by following a scripted piece that can be delivered theater-style or with improvisation using carts with materials packed in a moveable display or demos that fit into lab coat, vest pocket or backpack.

Young people usually require individual coaching on their performance and a dependable, patient adult to turn to when problems arise. With training most discover the role of good questioning skills in engaging the audience and maintaining their interest. Scripts are often only used initially; some programs find that scripts become repetitive and the teens end up sounding uninspired. As with the Explainers, varying the activities maintains the enthusiasm of the youth. Young people who are encouraged to be creative in planning and evaluating their demos, are less likely to become bored. Once a teen has developed confidence with both the content matter and interacting with the public, he/she may be given the flexibility and guidance to personalize their demo. Even after a teen has gained the confidence to go solo–-an accessible adult is still recommended. Despite their seemingly sophisticated demeanor, teenagers sometimes still need support when you least expect it.

Some programs are structured such that teens who have been in the program for a period of time and who have demonstrated skill proficiency are able to develop new demonstration programs for visitors. This is something you might think about as you plan your program.

Suggested staff to youth ratio: Minimum of 1 staff per 10 youth.

Advantages of Demonstrator Programs	
Science Center's Point-of-View	**Teen's Point-of-View**
Demonstrators: • Make the visitors' science center visit more entertaining and engaging • Use additional objects to link the concept explained in the exhibit to examples or applications of the concept • Can increase revenue to the science center if demonstrations can be packaged for sale in the science center store or marketed as a public program • Can vitalize the science center's image	Through a well-designed Demonstrator-type program, a young person can: • Develop sophisticated communication and other interpersonal skills • Master new concepts • Learn how to interact with people they don't know--which can matter tremendously to a teenager • Earn a stipend while having fun and learning new, relevant skills and information

INTERN, APPRENTICE AND MENTORSHIP PROGRAMS

Examples of Intern, Apprentice, and Mentorship Programs

- Henry Ford Museum, Youth Mentorship Program
  http://www.thehenryford.org/education/youthmentorship.aspx
- Academy of Natural Sciences, WINS program
  http://www.ansp.org/education/special_programs/wins.php
- Philadelphia Zoo, Junior Zoo Apprentice Program
  http://www2.philadelphiazoo.org/getdoc/16b68a6d-0aef-4728-bb39-82d9d82221df/Interns.htm

Internships and related program types support young people by developing the knowledge and skills required for work in science center/museum departments or offices, including exhibit development, education, gift shop or administration, rather than the museum floor. Since tasks depend on the department or office where the young person is assigned, the common experience that makes this type of program cohesive is the general focus on work skills development within the context of a very specific system: the science center or museum. In science centers and museums that have expanded their youth programs to include more intense work opportunities, teens who have demonstrated readiness and interest can apply for apprenticeships or internships. A major advantage of internships as part of a structured youth program is the support that the interns continue to receive from the core youth development program, while transitioning into the museum's mainstream workforce. The training for this type of employment is highly individualized and is usually conducted by the teen's supervisor in the specific department where the teen is assigned. The youth program leader usually recruits mentors in other departments to work with teens, but also serves as a confidante and mentor (for both the teens and the department supervisors), coordinator and source of support. The supervisors/mentors in the participating departments provide teens--and their youth program leader--with regular feedback and performance assessments. It is equally important that supervisors and mentors of teens receive training that includes understanding the unique needs of teens and cross-cultural sensitivity.

Suggested staff to youth ratio: Approximately 1 staff per 2 or 3 youth

Advantages of Apprenticeships, Mentorships and Internships	
Science Center's Point-of-View	**Teen's Point-of-View**
Apprentices/Interns: • Provide much-needed services to the science center at a very reasonable rate of pay • Bring a fresh perspective to the work normally done in a science center • Can diversify the science center profession	Through an Apprenticeship or Internship, a young person can: • Acquire work place etiquette and know-how • Become an important member of a department • Get bona fide employment experience that provides a stipend, builds a resume or portfolio and prepares him/her for the next job

CROSS-AGE TEACHING PROGRAMS

Examples of Cross-Age Teaching Programs

- Utah Museum of Natural History: Youth Teaching Youth http://www.umnh.utah.edu/pageview.aspx?id=19923
- National Aquarium in Baltimore http://www.aqua.org/aquariumonwheels.html
- Science Museum of Minnesota, Youth Science Center http://www.smm.org/about/kaysc/
- St. Louis Science Center http://www.youthexploringscience.com/programs

Across YouthALIVE! programs, one of the most meaningful experiences reported by teens, was that of engaging younger children in learning activities. Although outreach to young audiences through special events out in the community is one venue for cross-age teaching, the most common environments are afterschool and summer programs. For some science centers/museums, teens assist museum educators with in-house classes for children. Regardless of where the teaching occurs, the teens train intensely, learning the science concepts, practicing the activities and developing questioning techniques that they will use in their work with the children. This training, usually lead by the youth program staff, can include sessions with a scientist or curator who can deepen the teens' understanding of the science concepts on which the activities are based. In most programs, staff model the inquiry-based teaching behaviors that they want the teens to use with the children. (The Exploratorium is a great resource for anyone interested in exploring inquiry as a pedagogical tool for informal science. http://www.exploratorium.edu/ifi/about/index.html)

In programs where the teens are teaching only in the summer, the preparatory activities are the main focus of the teens' science center work during the school year. In other programs, the teens may spend several sessions each week throughout the school year, engaged in the requisite preparatory activities before their weekly sessions with the children in afterschool programs. Teens with experience are able and encouraged to design new activities. For some teens, these kinds of programs stimulate an interest in careers which involve working with children and youth.

PROGRAM MODELS: ADDITIONAL RESOURCES

American Youth Policy Forum. (2006). Helping youth succeed through out-of-school time programs. Washington, DC: Author. Available at www.aypf.org.

Association of Science-Technology Centers. (2001). YouthALIVE! From enrichment to employment: The YouthALIVE! Experience. Washington, DC: Author. Limited number of copies may still be available

Doering, Z.D. (ed). (2005). A focus on youth, science and museums. Curator: The museum journal. 48(2). Walnut Creek, CA: Altamira Press.

Duffet, A., Johnson, J., Farkas, S., Kung, S., & Ott, A. (2004). All work and no play? Listening to what kids and parents really want from out-of-school time. New York: Public Agenda. Available at http://www.publicagenda.org/research/research_reports_details.cfm?list=2.

Harvard Family Research Project. (2006). Exploring quality standards for middle school after school programs: What we know and what we need to know. Cambridge, MA: Author. Available at http://www.gse.harvard.edu/hfrp/projects/afterschool/resources/demographic.html.

Lauver, S., & Little, P. M. D. (2005). Finding the right hook: Strategies for attracting and sustaining participation in after-school programs. The School Administrator, 62(5). Available at www.aasa.org/publications/saarticledetail.cfm?ItemNumber=2522&snItemNumber=950&tnItemNumber=951

Module 2: PROGRAM DESIGN

Part B: MEETING MISSION AND NEED

What kind of youth program is best for my science center/museum?

Program Design: Part A: Models offered several program models that demonstrated ways in which teens are authentically integrated into the operations of science centers and museums. However, you will have to identify ways in which youth might be ideally integrated into the operations of your own institution that may or may not be similar to examples given. This section offers examples of how a youth program can benefit a science center or museum while supporting healthy youth development. It also suggests strategies and resources for identifying the needs of museum as well as those of the youth in your community.

MUSEUM MISSION AND TEEN NEEDS

Where is the convergence between your science center/museum's needs and the needs of your community's young people? Begin by assessing your institution's overall mission and objectives from the perspective of how could a teen program help fulfill those objectives and move the mission forward. Then to follow, discuss possible teen programs with CBO staff, community leaders, young people, parents and teachers to help build a clear picture of your community's youth wants and needs. Core elements of your youth programs must reside where the needs of the science center/museum and the community's youth overlap.

Most youth programs cited throughout this guide have been operating for more than a decade. Their sustainability suggests that they are successful in at least four critical areas:

1. Meeting the museum's mission goals and objectives
2. Meeting educational, social and developmental needs of program participants
3. Meeting a community need
4. Securing funding to sustain their work

Since program design must address the needs of the institution and the needs of the youth, one could say that the sustainability of these programs is directly, but not solely, related to the core program design and the program's ability to adapt as needs and resources change. For example, staff often find that as young teens from after-school programs mature, they become interested in continuing their participation on a deeper level. These programs often develop 'career ladders' that the teens 'climb' by incrementally increasing their responsibilities as service providers for their museum. New York Hall of Science is an excellent example of a fully institutionalized ladder program.

New York Hall of Science
http://www.nyscience.org/join_getinvolved/www.nyscience.org/SCL

ADDRESSING A TEEN NEED: Developing Workplace Competencies

Many of the youth programs that participated in Phase II of the YouthALIVE! (Youth Achievement through Learning, Involvement, Volunteering and Employment) Initiative began to align their job training and performance assessments with the five competencies identified by the U.S. Department of Labor Secretary's Commission on Achieving Necessary Skills (SCANS) research for the beginning of the 21st Century.

U.S. Department of Labor Employment and Training Administration
http://wdr.doleta.gov/SCANS/whatwork/

A common job training framework, YouthALIVE! in the workplace (Appendix V), was created by adapting these SCANS competencies to work done in science centers/museums. The five competencies include:

Resources: Identifies, organizes, plans and allocates time, money, materials, facilities and human resources.

Interpersonal: Works with others as team members, explainers, teachers, visitor service representatives, etc.; Develops skill in handling conflicts and embraces diversity

Information: Acquires, evaluates, organizes, interprets and communicates information

Systems: Understands the science center/museum as a set of complex interrelationships; recognizes own role in system's operation; Monitors and corrects own performance within the system

Technology – Selects and applies appropriate technology to tasks

Each of these skill areas, while important in the larger work-world, can be readily recognized as essential to the smooth operation of a science center or museum. This makes these institutions, already perceived as safe havens by some, ideal environments in which to nurture these skills as part of a structured, services-oriented youth program.

ADDRESSING A TEEN NEED: PREPARING FOR COLLEGE

Recognizing that far too many young people enter their junior or senior years of high school without any notion of what is required for college admission, a number of museum-based youth programs are incorporating elements that support academic performance, college preparation and career awareness, for all high school-age participants. Science centers and museums are finding that admissions officers from local colleges serve as effective partners for these activities.

ADDRESSING A MUSEUM NEED: Diversity

Due to the ever-changing demographics of the United States and many other countries around the world, nurturing an organizational climate that embraces inclusive practices is key for securing the relevancy of science centers and museums. Initially, the programs

launched under YouthALIVE! targeted underserved populations, youth of color and youth from low income communities. However, more broadly speaking, 'underserved' refers to any and all populations that are not proportionally represented in the core visiting audience of the science center or museum. Engaging youth from underserved populations presents an exciting opportunity for both the institution and youth participants. Well-designed youth programs provide an opportunity for young people to share their unique worldviews. In these safe, supportive environments you people who may differ in socio-economic status, age, cultural diversity, religion, physical ability and sexual orientation are able to educate each other and their adult mentors. While empirical research on the impact of diversity in science centers and museums remains to be done, studies of diversity in workplaces and on college campuses have shown the benefits.
Hrweb.berkeley.edu/seads/diverse.htm
www.jobwise.gov.au/Jobwise/News/UKsurveyolderyoungerworke.htm

Science centers/museums also benefit from establishing meaningful long-term relationships with youth by creating a pool of young adult that may transition into full-time employment upon graduating from high school or continue working with the museum part-time while attending university. Young people from diverse backgrounds provide staff with an opportunity to increase their cultural competency; and positioning the institution as an entity that is invested in bettering the outcomes for the entire community.

Diversity Resources

Who Benefits from Racial Diversity in Higher Education? by Mitchell J. Chang, Associate Dean of the College of Liberal Arts, Loyola Marymount University and Alexander W. Astin, Director, Higher Education Research Institute, University of California-Los Angeles.
www.diversityweb.org/Digest/W97/research.html

Why Diversity Matters, Human Resources, University of California, Berkeley
http://hrweb.berkeley.edu/seads/diverse.htm

Young and Old Recognize the Benefits of Having a Diverse Workplace, Jobwise
www.jobwise.gov.au/Jobwise/News/UKsurveyolderyoungerworke.htm

IDENTIFYING NEEDS AND RESOURCES

Rather than relying on assumptions to create or affirm the goals and desired outcomes of your program, set aside time for research on local needs and resources. Since your goals, desired outcomes, and program design must consider both youth and institutional needs, begin researching within your museum and then extend your search to the community to garner input and support. If your purpose is to enhance an existing youth program, first, review all previous grant proposals and other documents regarding the current youth program. Then, study other current or previous programs offered for adolescents in your science center or museum. What needs were they designed to meet? How successful were they? Regardless of whether you are designing a new program or refining an existing program, the goals and objectives of the youth program should be well defined.

ORGANIZING A PLANNING TEAM

Recruit one or two colleagues to form an in-house planning team. Discuss the program with your development office during the beginning stages, especially if grant funds have been secured. The planning team can begin internal research by conducting a short survey of key staff members. This could take the form of informal interviews conducted by planning team members or a written questionnaire presented at an 'All Staff' Meeting. Ideally, the CEO/Director will demonstrate his/her support of the program by signing off on the memo accompanied by the questionnaire or by offering verbal support of the project in a live forum. If the planning team has initial ideas regarding the scope of the program, communications with other staff might include a brief description of the program model(s) being considered and an outline emphasizing possible program goals and objectives, target audience, anticipated frequency of sessions, etc. To maximize staff feedback, keep answers confidential and give plenty of time to respond during the interview or in returning the questionnaire. Be certain to assess staff receptiveness and knowledge of adolescents. In addition, gain a sense of who might be interested in assisting with the program and on what level. Compile the results and share them with the planning team. Together, you are beginning to answer the question, "What might a perfect youth program look like at our institution?"

SEEK OUTSIDE EXPERTISE

To assist in the planning, identify two or three individuals who are highly regarded for their expertise in program development, youth employment training, informal education, community-based organizations or hands-on science education. These planning advisors, all of whom should be very familiar with the communities targeted for your program, can become members of your formal advisory committee. This handbook and the Youth Programs Forum at ASTC Connect can provide access to many successful museum-based youth programs that can serve as planning and problem-solving resources.

WORKING WITH THE COMMUNITY

Building relationships in your community is just as important as building relationships within your organization. As discussed in Module 1, science centers usually seek out community-based organizations (CBOs) as partners for launching youth programs that engage youth from underserved communities. A well-developed understanding of each stakeholder's agenda and mission will provide opportunities for ways in which you and your partners can work together.

The National Assembly of Voluntary Health and Social Welfare Agencies (www.nassembly.org) states that active support of leadership is critical to a successful partnership. Partnerships take time to develop and yield results. Partnerships should continue for many projects which are different from coalitions in which the members come together to accomplish a specific goal. A successful partnership depends on the commitment of leadership of both organizations. However, CBO leaders frequently look for indicators of commitment of investment in the program by the science center's leadership. Only leadership can shelter a partnership from being cut off completely during a dry spell in funding.

Regardless of whether you work with previous organizations or forge new relationships, keep in mind the following facts:

- Partnerships take time to grow.
- Partnerships involve give and take.
- Partnerships evolve.

"When choosing a community partner, realize that keeping the "s" off the word partner may save you! We began with an advisory board of six: three school administrators, two community youth group coordinators and one local university educator. We received verbal or written communication from all of them but as time passed it was evident who would support us with their ideas, facilities, crisis services and/or staff."

The Newark Museum

FINDING PARTNERS

Prospecting for community contacts is somewhat like fundraising--be on the alert, looking for good talent and recognizing the conjunction of interests. Remember, you want a partner organization that knows the teens, their families and their culture. You will need a partner who will assist in recruiting teens for your program and will connect you with social service agencies, if the need arises. Learn in advance about the community, its history, its current issues, its values and its communications systems.

Create a map of the community and identify centers of power and key institutions. Find people willing to act as guides within the community, to introduce you to key community members and to vouch for you and your science center's trustworthiness. Attend community events, churches and community centers. Many school districts, committed to reforming science education, may be open to innovative science center-based programs that enhance students' interest, motivation, knowledge and skills in science and technology.

During the planning phase of your program, you will need your community partner's input not only to determine what the teens need and to make sure that your team is designing a program that will be attractive to the teens of that community, but to secure the input and support of the teen's parent/guardians. When most science centers are ready to launch new youth programs, they turn to their community partners for help with recruiting teen participants and contacting families. Later, if teen issues arise requiring intervention, these community partners can connect the museum staff to local social service networks.

However, before you look for community partners, prepare materials and a presentation about the science center and your program. You need to be able to convincingly and concisely tell folks:

- What the science center and a youth program can offer
- What makes the program you envision special
- What exactly the youth and the community organizations will get out of participating in your program.

Also be very clear about what type of participation you need from them.

Be aware that funding is usually an ongoing challenge for many community organizations and staff attrition is not unusual. The person who helps get your program started may eventually move on. Therefore, if you expect ongoing input and collaboration from a CBO partner, consider including that partner, even a minimal amount if funds are quite limited, as you plan the budget for this program. In subsequent years, this CBO may be willing to partner with your museum to secure grants for your program.

CONVENE YOUTH FOCUS GROUP(S)

Regardless of the format, programs that excel involve youth early in the planning process. An essential part of your research should include getting youth feedback on program possibilities. By involving teens early, you'll spend time designing and planning a program that teens want and need rather than a program based on isolated assumptions. To this end, plan to hold at least one focus group designed to assess what the needs and interests of youth are in your community. Start forming your focus group questions early. The number and specificity of questions will depend on how much information the teens already have about the science center, your time availability and the expertise of the facilitator. Share your proposed questions with people from your advisory committee and elicit their feedback.

IDEAS:

Host an open house at the science center for potential partners. This could also serve as an opportunity for other science center staff to become more familiar with the work of these organizations.

Ask current community partners to recommend or introduce you to other community-based organizations. (This gives you the advantage of credibility right from the beginning) Visible leaders in the target community are also excellent sources of information and support. Also, try your local elected officials, school board members, church leaders, the board of United Way or human service agencies, universities, colleges and community colleges.

Select a diverse group of young people for the focus group. Draw from the population from whom you would like to recruit. The needs of young people from different parts of your community may overlap in some areas and differ radically in other crucial areas (e.g. whether or not they receive help with educational planning, have transportation issues or value diversity). Your potential community partners can expedite the recruitment process by identifying young people who would be good participants and possibly even provide the space for the focus group, if there isn't any space available in the science center.

Arrange the focus group at a time when you can give a tour of the science center as well as introduce the teens to various departmental staff in a science center. Not many teens have an opportunity to go behind-the-scenes of a science center or even to experience a science

center on a personal level. Develop activities to give the teens a good idea of the scope of what your institution can do. The teens will be able to provide much more relevant feedback this way.

1. Develop a simplified outline of a preliminary program timeline and possible activities to give the teens something specific to refer to and comment on.
2. Before inviting key adult stakeholders to attend focus group meetings, make it clear that they are attending as observers only.
3. Arrange for snacks and a small thank-you token for the teens' participation.

FOCUS GROUP FINESSE

Needless to say, the key concept is focus. The group needs to remain focused and flexible. If the conversation strays too far from the discussion topics, re-establish the focus while keeping an ear tuned for passing comments/observations that may actually be useful with a little probing.

- Compose specific questions that focus on areas where program design concepts are the weakest.
- Develop specific and answerable questions.
- Develop a list of follow-up questions to elicit more detail to responses.
- Circulate the questions to your community partners and advisory committee for their feedback.
- Do a test run.

RECRUITING FOCUS GROUP PARTICIPANTS

Contact your community partners and explain that you are creating a focus group to fine tune the program. Specify the ways that you'll need their help. Be prepared to answer questions regarding logistics of the focus group, including how long the focus group will last and how the teens will get to and from the science center. Ideally, you should deliver the invitations to the focus group in person, to answer the questions the young people may have. Inform the community partner's contact person that you will be sending a memo that can be distributed to interested teens. The memo should be on science center letterhead and include the following:

- A permission slip and release form for the young person's parent/guardian to sign and return to you before the focus group. Specify a hard deadline date and include instructions on how to return the permission slip back to you. Every participant in the focus group must have submitted all the signed forms before the focus group meeting.

- Explain the reason for convening a focus group and state very clearly what you need the teens to do. Give an example or two of the types of questions that you'll be asking. Also explain the skills that a focus group participant should have--willingness and comfort with expressing him or herself, ability to listen well, ability to get along with others, a willingness to solve problems, etc.

- Include on the invitation the time the teens should be at the science center and the time they can expect to leave. If you are providing transportation, explain when and where to meet. If you are not providing transportation, clearly explain how to use public transportation to get to the science center and detailed driving instructions. Reimburse teens for cost of travel to and from the science center, if possible.

- If you intend to record the focus group, inform teens that they will be recorded and include a release form with their permission slip and introductory memo. The sample release form in Appendix I can be modified for this purpose.

- Be sure to mention that snacks and a small token of appreciation of will provided.

During a public interview session at the YouthALIVE! National Network meeting in Portland, OR, youth program participants surprised program directors when they noted how important their initial impressions of the buildings were.

Focus Group Follow-Up

Send thank you notes to focus group participants following the session. Transcribe the focus group discussion as soon after the meeting as possible, but do not analyze their responses immediately. It's advisable to give yourself a week before you correlate the youths' responses with the issues they pertain to and begin to see connections. As you mull over the implications of what you observe, also think about how, or if, you'll address them.

PULLING IT ALL TOGETHER

As your planning committee gathers information from the staff, the community, and from focus groups, all notes should be collected and reviewed with your planning advisors. Use knowledge base on youth programming models in museums and the needs of local teens to discuss the ideal ways for your science center or museum to respond programmatically. You can create the big picture (Explainer Program, Cross-Age Teaching, etc.) for what teens will be doing in your museum. The needs assessment process has prepared you to now develop goals and desired outcomes for your program. Please see the following section, *Module 2: Program Design: Part C: Setting Goals and Outcomes* for more information.

Ideally, you should bring your program schematic to the museum administration staff and discuss it in depth. This is the perfect time to identify any logistical concerns that may arise as well as develop a common understanding on youth expectations, the program and the museum. It is also an ideal time to identify and discuss internal allies for your program.

Module 2: PROGRAM DESIGN

Part C: GOALS AND OUTCOMES

What kind of changes or benefits do I want to result from my program?

In *Module 2, Part B: Meeting Mission and Need*, we focused on the importance of becoming familiar with the needs of youth in your community and the needs of your museum. Clearly no one program can meet all the needs of either the museum or the youth. However, after reviewing program models in *Module 2: Part A: Program Models*, and using strategies suggested in *Module 2: Part B: Meeting Mission and Need*, you should know where the needs of youth intersect with the needs of your museum.

STATEMENT OF PURPOSE, GOALS AND OBJECTIVES

STATEMENT OF PURPOSE

Your program's purpose, goals and core components should be developed out of that intersection of needs and take into account financial and human resources – resources that are available now and those anticipated in the near future. Take time to write your program's primary purpose before attempting to refine that purpose into a statement of one or more goals. Your purpose statement should include the target population and a general description of the services to be provided.

Sample Statement of Purpose:
Youth Horizons, a program of the XYZ Science Museum, promotes youth development and science literacy for neighborhood teens – through museum-based work experiences, career preparation, academic enrichment, and a support circle of positive adults and peers.

WRITING/REFINEING GOAL STATEMENTS

Goals are general statements which guide the activities of the program, focus on teens and services provided and used to measure program effectiveness.

Possible goals for our sample purpose might be:

- To provide neighborhood teens with basic entry-level workplace skills and opportunities for advancement
- To deepen teens' understanding of selected science concepts
- To encourage academic achievement and preparation for life after high school
- To increase the science museum's capacity to serve underrepresented populations
- To help teens from the neighboring community see the science museum as a resource for themselves and their families

WRITING/REFINING PROGRAM OBJECTIVES

Program objectives are specific and usually quantifiable statements of program achievement. You will often refer back to your objectives when considering program evaluation.

Examples of Objectives for Selected Sample Goals:

Goals:

- To provide neighborhood teens with basic entry-level workplace skills and opportunities for advancement
- To deepen teens' understanding of selected science concepts

Objectives:

- Fifteen young people, ages 14-17, will be recruited from local community organizations for a work-based learning program
- Each teen participant will complete the museum orientation and introductory training program focusing on the museum as a public service system
- Teen participants will meet weekly for science enrichment and ongoing workskills training sessions in interpersonal skills, communication, resource allocation and technology
- Teens will research, discuss, practice and schedule hands-on science activities for use with visitors and community children

Goal:

- To increase the science museum's capacity to serve underrepresented populations

Objectives:

- Staff will develop a partnership with at least one youth-serving community organization from which teens will be recruited
- Workshops focused on working with teens will be organized for museum staff
- Teens will serve a semester as apprentices to museum education department outreach staff
- Teens will serve a semester as interns in the visitor services department
- Staff will develop job opportunities with increasing levels of responsibilities for teens

DEVELOPING A LOGIC MODEL

A Logic Model, a graphic tool often used by program planners and evaluators, is a good way to summarize your program by describing its various elements and the connections between them. A simple logic model might present program inputs (including staff, participants, funding, partnerships, etc), activities, intermediate outcomes (immediate results) and long-term outcomes (desired behavior changes).

SAMPLE LOGIC MODEL FOR A MUSEUM-BASED YOUTH PROGRAM
(See sample statement of purpose at beginning of this section)

Program Inputs	Program Outputs (Activities)	Immediate Outcomes (Immediate Results)	Longer-Term Outcomes (Desired Changes)
• Community Partner (CP) Staff • Museum Youth Program Staff • 15 Youths (Ages 14-17) • Parents • Museum Staff – Education Dept, Visitor Services, Facilities • Volunteers • Uno Foundation Grant • Afterschool for Teens Grant • Volunteer Guidance Counselor • Local College Admissions Officer	• Outreach & regular meetings with CPs • Needs assessments • Recruitment of teens • Open house for families • Staff training sessions on working with teens • Museum orientation & training for youth • Ongoing workskills training for youth • Weekly hands-on science sessions • Outreach apprenticeship visitor services internship • Performance assessments • "Preparing for Your Future" workshops (4-6 annually)	• Museum & CP agree on goals, structure & selection criteria • Program meets teen & museum needs • 15 active participants • Parents aware of program goals • Teens develop awareness of mission, staff, structure, facilities & relevant policies • Teens demonstrate basic competencies in interpersonal communication, adhering to museum policies for staff • Teens demonstrate basic competencies in working with visitors, managing Time, space, materials & people • Teens engage children in hands-on science activities & technology use • Most teens become interns or apprentices • Teens value education • Teens have resumes • All seniors complete job or college applications	• Museum and CP collaborate to develop ongoing programming that involves community members • Museum has a new cadre of experienced part-time employees • Teens & families are comfortable coming to museum and use it as a resource • After 2 years in the program, all teens are employable • All teens graduate from high School with a plan for further education or employment • Career choices of graduates include museum work, science, education, youthwork

Designing and refining reasonable goals and desired outcomes will take time and requires knowledge of available resources (INPUTS), but once this step is done, subsequent work will flow more smoothly. Since many evaluators and researchers use some variation of a logic model as they prepare to study and document a program, it may help to seek the advice of an evaluator at this point in the planning process. If you do not have access to a formally trained evaluator, perhaps your museum's director of education can provide feedback on your proposed inputs, outputs and outcomes.

BENEFITS OF A LOGIC MODEL

Many program leaders have found logic models quite useful in presenting their program to potential funders or other key stakeholders and in preparing reports. Even if you are not able to have an evaluator for your program, as you implement your program, your logic model can help you which records to keep and how to organize that information for future reports.

Once your program is fully operational, expect to revisit and – if necessary – refine your goals, objectives and activities.

One experienced program leader, after reflecting on how helpful the process of generating a logic model was, made the following comment: "I very much appreciate how a well defined set of goals can inform all program activities. It's nice to have an overriding guide, especially as it informs program development. That said, I've also grown to appreciate how things can change and the need to revisit and refine goals as you refine your curriculum, sense of what works and vision."

The following resources can guide you in creating a logic model for your program:
www.twc.state.tx.us/svcs/youthinit/materials/evaluationtools.doc
www.nccccurricula.info/documents/LogicModel.ppt
www.vsuw.org/site/DocServer/Logic_Model_Handbook_Updated_2007.pdf?docID=801

Module 2: PROGRAM DESIGN

Part D: CORE CONTENT – CURRICULUM

CURRICULUM DEVELOPMENT

As discussed in previous chapters, the mission of your museum or science center needs to be at the core of your program's curriculum. For example, if your institution wants young people to discover themselves through the wonders of science, then science, mathematics and/or technology must comprise the core activities of your program. Ideally, these activities should relate to your museum or science center's collection or exhibition content. All activities should have the museum at its center. If not, the program could take place at the local Parks and Recreation Center or YWCA. The beauty or distinctiveness of a science museum-based youth program is that it grows from the science-rich collection and/or science discipline(s) at the core of the institution.

To develop your curriculum, you will need to know the schools' schedule and science curriculum standards.

CURRICULUM IDEAS

Cognitive (related to the intellect)	**Affective (involving emotions)**
• Science-related topics that are reflected in the exhibits • Science topics and projects aligned with state and science standards • Science topics of high interest to participants • Activities that integrate math and science • Activities that encourage the use of science process skills (questioning, hypothesizing, observing, collecting data, inferring, etc.) • Technology skills (e.g. rudimentary computer skills) • Other academic skills, educational planning/college prep • Art Activities • Projects, field trips	• Interpersonal skills (including team-building, conflict resolution, self-discovery, leadership, communication (oral and written), presentation skills, multicultural awareness, self-esteem, responsibility, respect, etiquette, negotiation, honesty) • Time management • Goal setting • Work ethic • Critical teen issues • Community service • Visitor service

RULES FOR WORKING WITH TEENS

Throughout the stages of program planning, implementation and evaluation, it would be wise to refer back to a few basic guidelines for working with and mentoring teens. Make sure the activities and scheduling for your program take into account caveats passed along by other youth program leaders which are summarized on the next page.

12 BASIC RULES FOR WORKING WITH TEENS

1. Treat each teen with respect for the unique individual he/she is and for what he/she brings to the group.

2. Create a safe, supportive environment where teens know they can dream, explore, make mistakes, try again and succeed.

3. Remember that, despite some arrogance, most adolescents struggle with the feeling that they are small. Try to create opportunities for them to feel important.

4. Set parameters that are important, explain the reasons for them clearly and enforce them fairly and firmly with a set of progressive sanctions.

5. Offer honest feedback to teens, letting them know firmly but caringly when you cannot accept certain behaviors (not the persons displaying those behaviors).

6. Take time to respond to each teen as an individual and let them know they are valued in every appropriate way possible.

7. Model the behaviors you wish the teens to adopt: loving, fair-minded, moral, humorous, honest, reliable, giving, hopeful, etc.

8. Do not burden teens with personal, adult problems; it takes all of their energy to handle the circumstances of their own lives.

9. Know how to identify teens who may need additional support and have references available to meet those needs.

10. Be very aware of varying personal, cultural and societal customs regarding family and gender roles, physical space, eye contact, touching, time, religious codes, etc. and teach teens to observe and respect those customs.

11. Respect confidentiality; let teens know early on that you are obligated to report legal information such as child abuse, theft or other criminal activities, but all other personal information will be kept confidential.

12. Make a commitment to continue learning all you can about working with adolescents.

From the Introduction to YouthALIVE! In the Workplace for the "12 Basic Rules For Working With Teens." (Appendix V)

DEVELOPING THE PROGRAM

Now that you have thought carefully about your audience, have decided on the type of program that best fits your situation and have developed a set of written goals and outcomes, it's time to figure out the content and operational details for your program. You know what you want the teens to get out of their participation in the program, but exactly what experiences will they need in order to achieve those outcomes? How will you structure time so that when the teens are with you, the teens and the program are moving in the desired direction?

There are a multitude of curriculum options available to positively impact your youth participants. It is important to consider striking the right balance of experience for your youth that you or your resource partners can provide.
Students will have a spectrum of knowledge and abilities when they begin. As their supervisor and mentor you should assess their needs ensuring opportunities to grow in those areas which they are most deficient.

Consider the variety of activities and skills imbedded in several popular programs that prepare teens for working with visitors on the museum floor.

In the programs discussed later in this section, look for the ways in which specific program elements can address particular developmental needs like:

- Learning to respect people and things
- Learning and perfecting new skills
- Developing strategies for positive peer interactions
- Creative expression
- Opportunities to explore new behaviors
- Meaningful participation
- Relationships with caring adults willing to share their knowledge and skills

PROGRAM COMPONENTS

Each program, regardless of type, should consider weaving in specific program components to ensure that they address the whole participant. Consider the following program components:

- Content Knowledge/Science Literacy
- Soft Skills and Workplace Competency
- Critical Teen Issues
- Basic College Preparedness/Academic Support

CONTENT KNOWLEDGE/SCIENCE LITERACY COMPONENT

This component includes any content training the youth should receive. Training sessions should be designed to meet your specific program goals but they can also include training on exhibits, in-house and out-of-house programming and/or demonstrations. Sessions should not only include specific content knowledge that the youth are required to learn but should begin with a science literacy component so students understand the science behind their facilitation. Keep in mind that there may be many content and experiential gaps in your young people's prior science education. Therefore, your content-rich program can be an opportunity to validate the effectiveness of your science center or museum as a science learning resource.

Training youth is not always an easy task and requires skill. Once a topic has been selected, sufficient time must be allotted for the young people to explore, question, discuss and summarize their new understanding of the topic. Trainers should be skilled in setting up science exploration experiences and delivering content rich information that provides enough background from which the young people can work, but is also easy to understand. This is accomplished by utilizing all learning styles. Your training sessions should address all styles and may be done through a combination of hands-on activities, visuals (such as props and video) and lecture or discussion. See below for an explanation of learning styles.

1. *Kinesthetic/Tactile Learners:* Learn through a hands-on approach and do best by touching, moving and doing. Hands-on activities, demonstrations and/or manipulating items are perfectly suited for the kinesthetic learner. This type of learner may find it difficult to sit for long periods of time and may become distracted. If the young people are working with younger children, it is very important that their training sessions model teaching and learning situations that utilize kinesthetic strategies.

2. *Visual Learners:* Learn best through the use of objects (or props) and visuals such as illustrations, diagrams, video, PowerPoint presentations and overhead transparencies. This type of learner will take copious, detailed notes to absorb the information in an auditory environment.

3. *Auditory Learners:* Learn best through verbal lectures and discussions. They need to hear the information. Written curriculum often has no benefit until the words are heard. These learners often read text aloud and use tape recorders for playback.

Trainers should become familiar with the art of inquiry-based learning and model it in their sessions. Youth participants should be taught how to use the inquiry process in their facilitation/demonstrations to provide a good learning experience for visitors. Because inquiry relies on questioning, training should not only help the young people develop good questioning skills, but appropriate responses when asked questions that they are not able to answer. Visit the following links for more information, resource techniques and downloadable activities on inquiry based learning and teaching.

http://hea-www.harvard.edu/ECT/
http://www.nap.edu/openbook.php?record_id=10126&page=475
http://www.biology.duke.edu/cibl/; http://www.ciblearning.org/resource.exercise.php

SOFT SKILLS AND WORKPLACE COMPETENCY COMPONENT

In addition to science content training, all teen staff should participate in workshops and or training sessions that address soft skills and workplace competency. This type of preparation will assist youth in understanding how to view and interact with others, working as part of a team, building responsibility and work ethic, professionalism and workforce preparation.

Soft Skills

Soft skills refer to the skills that help us interact with one another. Soft skills training will assist youth with understanding, recognizing and practicing new patterns of behavior that enable them to work effectively with others. Soft skills may include effective communication (oral and written), teambuilding/collaboration, listening, problem solving, multicultural skills, creativity, self-esteem, respect, honesty, conflict resolution and leadership. All of these skills will help your youth to better interact with the public and deliver programming that is second to none.

For activities and ideas, for more information, resources, and activities on specific soft skills see the Interpersonal Module of YouthALIVE! in the Workplace (Appendix V) and the following links:

www.tolerance.org/teach/index.jsp
www.tolerance.org/teens/index.jsp
www.edchange.org/multicultural/

Workplace Competency

Workplace competency refers to skills that enable individuals to be successful in their specific jobs. Soft skills and workplace competency go hand-in-hand. All soft skills are included under the workplace competency umbrella. In addition to soft skills, workplace competencies for the museum environment can include ability to motivate others, time management, organizational skills, use and allocation of resources, good customer service, conflict resolution, work with a variety of technologies and the ability to self monitor. Career planning and skills needed for specific careers, resume writing and interviewing skills should also be explored in this component. Career fairs and guest speakers are good ways to have teens begin conversations about the future and perspective careers.

Visit YouthALIVE! in the Workplace (Appendix V) for more information, resources and activities on workplace competencies. Several sections may be particularly helpful:

- YouthALIVE! in the Workplace: Interpersonal Skills Module
- YouthALIVE! in the Workplace: Appendix B: "Tools for Helping Teens Succeed,"
- YouthALIVE! in the Workplace: Appendix C: "Supplements for Supervisors," includes assessment tools for both the supervisor and teen.

Be sure to include all your youth in these workshops, no matter what their specific responsibilities. You can highlight and stress which pieces they will be using more in their specific positions but all should be included. Specific soft skills for explainer, demonstrator and apprenticeship and internship positions are highlighted below.

NOTE:

For those who volunteer to come in and share their expertise with your teens, you and/or the teens should be sure to follow-up with thank you letters.

Do not feel that you and/or your team need to do all of this without assistance. Utilize the expertise of professional consultants or other museum staff to help deliver some of these workshops.

CRITICAL TEEN ISSUES COMPONENT

It is imperative that all youth programs include a component focused on issues critical to the lives of teens. In this component, you help teens address personal and/or professional issues within their household, workplace, community and/or school environments. Although you and other museum staff cannot address all of the needs of the teens, you should at least be sensitive to their needs and connect the young people with appropriate community resources that can assist them.

Note to administration staff:

Before you begin working with your youth on critical teen issues, you should obtain permission from parents/guardians. During the interview process, have a list of topics that may be discussed by staff or invited experts during the program and allow parents to decide which ones they do not want their child to participate in. This permission is particularly important for topics such as sexuality. (While sexual harassment and other EEOC regulations logically fit under workplace competencies, experiences of other program leaders suggest that general discussions of sensitive topics like sexuality and substance abuse fit better under critical teen issues). These discussions are often prompted by a local event or challenge confronting teens in the community or in your program.

From time to time, teens are going to need to talk out issues, seek advice or require a supportive environment where they feel safe. It is in this component where they can have a voice and let their opinions be heard. Topics might include relationships, sexuality, issues within community, work, school or home, emotions, self-esteem, creative writing, sexual identity, body image, music in the media, etc. Special events like poetry, game and movie nights and talent shows provide teens an opportunity to express themselves.

If you have veteran teens, allow them to take the lead in developing and facilitating these sessions. They often know better than the adults what issues need to be discussed or the latest news spreading in and around the community and schools. Take a group census on

what they would like to discuss during these sessions. As always, observe your youth and offer extra support to those that may need it.

For topic ideas on addressing critical teen issues, visit the following links:

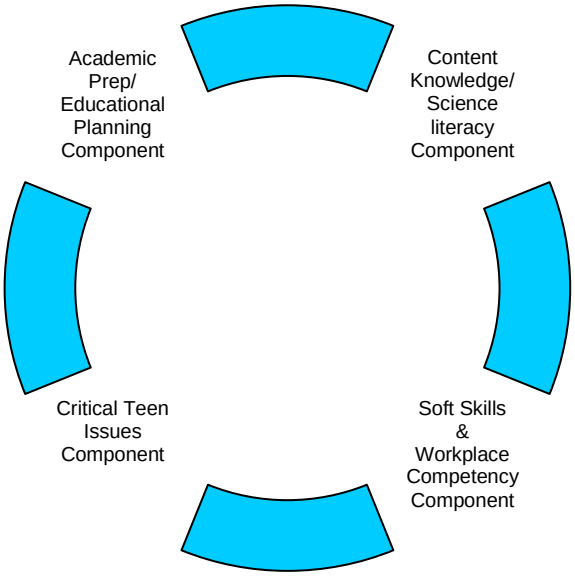
1. www.advocatesforyouth.org/lessonplans/index.htm

2. http://www.focusas.com/SubstanceAbuse.html

3. http://teens.drugabuse.gov/

4. http://health.discovery.com/centers/teen/index/teenindex.html
(Extensive list of topics and helpful information of interest to teens)

ACADEMIC PREP/EDUCATIONAL PLANNING COMPONENT



"We lost a number of teens because of their grades or attendance in school. We (now) encourage the teens to bring in their homework (designated days) and they are required to turn in a copy of their report cards for the semester. For subjects the teens are having difficulty in, we support them by offering informal and sometimes formal tutors. One of the benefits to teens participating in the program is that we promote a higher achievement in academics which will reflect on the school report card."

- Lied Discovery Children's Museum

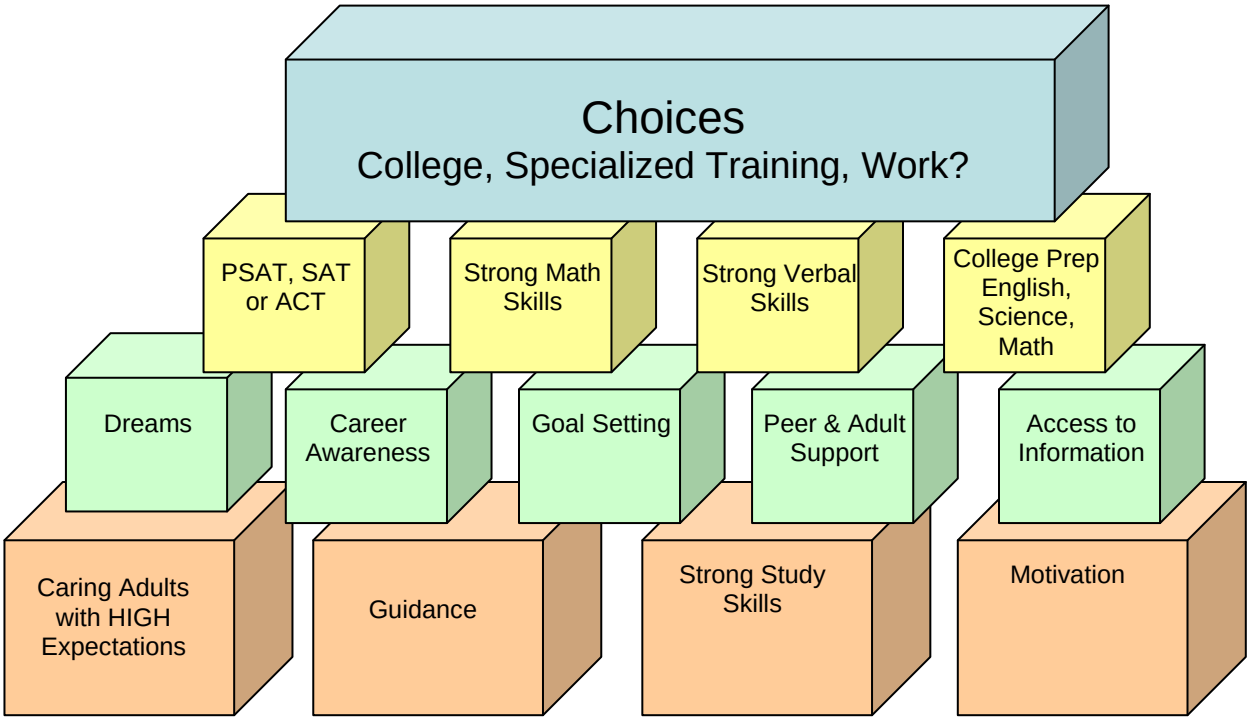
The academic prep/educational planning component reinforces the importance of school and introduces teens to the possibility of higher education. Session topics include study skills and habits, SAT or ACT preparation, college preparation (and tours) and tutoring programs or shadowing programs within and outside of their museum.

Consider the diagram above. It sums up what learning opportunities your program should provide, regardless of which model you select. Some people will design programs which place greater emphasis on one or two components, but this at least can help them remain aware of teens' other learning needs. The above sections discuss the content and workplace competency areas. The Critical Teen Issues component describes the activities that you may employ to allow time for students to discuss and reflect on themes that are particularly relevant to them and affects their lives. The fourth component relates to academic preparedness, which is discussed below. Programs which incorporate both the Workplace Competency component and an Academic component are providing a balance of skills which contribute to teens' preparedness for a future in post secondary education and/or full time employment.

Ideally, the ultimate goal is for all students to pursue post secondary education. Preparing youth to consider this as a viable option begins with awareness and access. Sometimes, students do not choose to do so, even with encouragement and planning opportunities. This is where the soft skills, work competency and content knowledge supports them the most.

There is a wide variety of activities that will fit nicely within your program's core strategic framework and can move your students from awareness to achieving goals.

Building Blocks for Educational Planning



Caring adults know that education is important and convey that to young people in various ways. They communicate high standards for learning and recognize academic achievement. Academic support for students who are not doing well has prompted program staff or resource partners to:

- Offer tutoring support
- Incorporate more writing, vocabulary and math building activities
- Monitoring report cards and grades
- Assist with high school course selection

College Preparedness sessions will help students understand the requirements for and options of 4-year colleges, 2-year colleges or trade schools. Activities to support this component may include:

- Trips to local and regional colleges (large and small)
- Information on colleges and programs designed to support achievement of minority or low income students
    - http://www.smart.net/~pope/hbcu/hbculist.htm
    - http://www.gocollege.com/financial-aid/scholarships/minority/african-american-scholarships.html
    - http://www.hacu.net/hacu/Default_EN.asp
    - http://www.hacu.net/hacu/Scholarship_Resource_List1_EN.asp
    - http://dir.yahoo.com/Education/Higher_Education/Colleges_and_Universities/United_States/American_Indian_Tribal_Colleges/
    - http://www.collegescholarships.org/scholarships/low-income.htm
- SAT/ACT prep
    - http://www.powerprep.com/
    - http://www.studyguidezone.com/
    - http://www.princetonreview.com/college/testprep/testprep.asp?TPRPAGE=746&TYPE=SATSubject-TOOLS
    - http://www.princetonreview.com/college/testprep/testprep.asp?TPRPAGE=39&TYPE=PSAT-HOME
    - http://www.princetonreview.com/college/testprep/testprep.asp?TPRPAGE=2&TYPE=ACT-HOME
- Studying/note taking skills
- Workshops with financial and admissions counselors
- Internet research
    - http://www.collegeprep101.com/
    - http://www.powerprep.com/collguid.htm
- College life panels discussions with program alumni and/or young professionals
- Career exploration, relating content to careers; access to professionals
- Building a portfolios and refining interviewing skills
- Parent involvement/awareness opportunities

The following chart, Building Blocks for Educational Planning: A Menu of Strategies offers examples of many ways a youth program can build in activities to promote academic success, develop career awareness, encourage the development of personal goals and support planning for college and work. No one program can expect to incorporate all of these strategies, but many science centers and museums in the YouthALIVE! Network were able to make post-secondary education and training a reality for their young people by modifying their program design to include several of these strategies as core curriculum components.

Building Blocks for Educational Planning: A Menu of Strategies

I. Assuring Academic Success – Middle and High School Students

Programmatic Objective	Possible Strategies and Activities
Assess Skills	• Skill Assessment Tools: Verizon Literacy Program Self-Assessment Tool http://literacynetwork.verizon.org/Best-Practices.26.0.html Honolulu Community College Intranet http://honolulu.hawaii.edu/intranet/committees/FacDevCom/guidebk/teachtip/scans.htm • Youth program staff confer with school and/or community organization • Youth program staff maintain contact with parent/guardian • Pre-program interviews, mid/end program evaluations and informal discussions • Skill Monitoring and performance assessments by mentors/supervisors (See Appendix V, YouthALIVE! in the Workplace)
Strengthen Study Skills	• Group Discussions • Workshops in setting academic goals, managing time, being organized, remaining motivated, effective listening, reading for comprehension, note taking, test taking, memory techniques, vocabulary building and math problem solving • Peer study groups – for youth by youth • Mentoring relationships with staff or veteran youth from program • Internet research • Summer programs offering academic enrichment and career awareness • Museum experiences that reinforce concepts being learned in school
Assess and Reward Academic Progress	• Track report cards for academic progress, problems areas, annual grade promotion • Maintain records of grades, courses taken, credits earned • Discuss progress with teachers/counselors • Discuss course selections with middles and high school youth • Recognition/incentive activities for milestones and achievement • Students may be able to receive school credit for work done in youth program
Build Student Support	• Keep parents/guardians informed via newsletters, progress reports, workshops • Provide workshops on positive youth development and pedagogy for mentors/supervisors • Organize an open house for families, school staff and community organization staff • Resource partners, program alumni, mentors, tutors provide support for young people • Maintain frequent communication with teachers and counselors • Authentic research, field work or other project activities with mentors build expertise

II. Developing Career Awareness – Middle and High School Students

Programmatic Objective	Possible Strategies and Activities
Introduce Career Fields	• Family math and family science programs • Career cluster discussions • Interviewing professionals from various fields • Field trips to workplaces and colleges • Career fairs and career panels
Encourage Research	• Explore websites for various professions • Use the Occupation Outlook Handbook http://www.bls.gov/OCO/ to find out about the training and education and education needed, expected job prospects, description of the work done, working conditions and salaries for most jobs
Learn on the Job	• Job shadowing in the museum or other worksite; rotation through various departments • Internships or apprenticeships within the museum or a partner organization

III. Developing Goals – Middle and High School Students

Programmatic Objective	Possible Strategies and Activities
Prepare for Work-Related Goals	• Discussion of workplace policies, procedures, expectations, and responsibilities • Youth involved in determining policies and consequences of inappropriate behavior • Review time management, the work ethic, teamwork, etc. • Annual performance reviews and regular check-ins

IV. Planning for College or Work – Middle and High School Students

Programmatic Objective	Possible Strategies and Activities
Focus on Academic Preparation	• Middle schoolers discuss and plan for high school • Annually review high school's course selection options • Pay particular attention to math and science course selection • Create an academic record worksheet or file for each participant • Develop general understanding of college admission requirements • Annually review steps to be taken at each grade level in order to have college as an option • Review course selections to determine if they support expressed career interests • Starting in sophomore year, begin preparing for college entrance exams – PSAT, SAT, ACT
Prepare for Life After High School	• Develop timeline for the future • Monitor balance between academics, the museum program and school-based extracurricular activities • Write full description of museum job

	• Prepare resume • Practice interviewing skills – for jobs, for college admission • Use journaling, creative writing and related activities to prepare students for college essays • Attend college fairs • Become aware of the role of financial planning to support goals, especially college • Find employment – important for most graduating seniors, college-bound or not

V. Getting Into College – Middle and High School Students

Programmatic Objective	**Possible Strategies and Activities**
Get Essential Information	• Internet research on colleges and scholarship possibilities • Learn admissions requirements of specific colleges • Take advantage of opportunities to participate in 'college bound' programs • Secure college materials and applications (Even juniors can benefit from sending for and discussing these materials) • Discuss options and finalize list of colleges that best match needs, interests and financial resources • Financial planning workshop for students and parents (local college admissions offices can be a good resource for this expertise)
Complete the Process	• Keep guidance counselor apprised of progress and press for assistance when needed • Apply for and take PSAT, ACT and SAT (fee waivers may be available, if needed) • Complete applications and essays. Have all materials reviewed for clarity and errors • If colleges require references, make those contacts well before submission time • With parental help, complete the process for applying for financial aid • Submit all application materials as early as possible, well before final deadline

PROGRAM ROUTINES

Although the curriculum that you are developing for your program depends on the type of program that you have outlined, it is important to note that as YouthALIVE! programs evolved in the past, in many of the stronger programs, variations of the following were routine each time the teens met: 1) a check-in, 2) an ice breaker/introductory activity, 3) the main activity, 4) reflection time, 5) next steps and where possible, 6) discretionary time. Before reviewing curriculum elements of several popular program models, think about your routines. Although routine activities will help the young people you are working with feel comfortable at the institution, but it is also important that the activities vary to appeal to a variety of learning styles (hands-on, experiential, cooperative learning group, etc.). Ideally, activities should be multi-disciplinary; off-site study or field trips can often support what is being learned.

1. Check-in
Check-in should not take more than 10 to 15 minutes maximum. The purpose of this activity is to greet each individual; ascertain the gestalt of the group that day—are they distracted, do they need to review what happened during the last session, are they ready to move more quickly, etc.; and take care of any business, including the day's schedule. The young people can help with record keeping by recording attendance and filing their own forms.

2. Icebreakers, Introductory, or Warm-up Activities
Icebreaker type activities are essential at initial program sessions. They ease the transition from outside world to science center world; they build trust by allowing the participants time to get to know their peers and the adults in the program in a non-threatening way; they help set a climate that encourages the young people to experiment and play. When selecting an icebreaker, make sure you are comfortable facilitating it.

Although icebreakers are more useful at the onset of a program, there are well-designed and more complex warm-ups that help the participants get to know each other on a more profound level. Intersperse these throughout the rest of the year. When the group isn't doing ice-breakers, use this time to review activities from the last session that may inform or set the stage for the activities that the teens will be doing that day. Otherwise, use a warm-up activity that sets the stage for the main activity.

To find icebreakers for your youth programs:
http://www.group-games.com/category/ice-breakers
http://wilderdom.com/games/Icebreakers.html

3. Main Activity
What experiences and skills will your young people need in order to achieve each of the program's desired outcomes? Those experiences and the resulting skills, once identified, are gained through carefully crafted, sequenced activities, called a curriculum. Just as the desired participant outcomes for work-based programs will be very different from the hoped-for outcomes of an enrichment program, so must the activities and ways of introducing them be tailored to participant ages and desired outcomes. Introducing an activity that provides teens with practice in asking exhibit visitors open-ended questions, or an activity that prepares them to do a particular demonstration will require teaching strategies unique to skills developed.

Guidelines for Main Activities
Regardless of the program type, these general guidelines can be helpful. Before the activity, the leader:

- Is thoroughly familiar with the directions and has practiced the activity beforehand so the activity flows smoothly
- Has related the activity to science center exhibits/collections when possible

During the activity, the leader:

- Gives clear directions to every participant before beginning the activity
    - With younger teens, begin the activity with them and walk them through the process; this will ensure less confusion and will make the activity run more smoothly and quickly
- Encourages all group members to participate with an open mind; no one should feel left out or inadequate in any way
- Is enthusiastic about the activity

Of course, as your teens become more experienced, the main activity for the day will extend beyond the time in the "inner circle" with you to the work they do with visitors, community groups or in other departments.

4. Reflection
Follow each activity with some type of closure or reflection process. There are several goals beyond mastering the content and having a good time for each activity. Participants are also building trust, relationships and a culture of sharing. As the young people reflect on their experiences, you can also use this time to assess the success of the activity. Be ready to initiate the reflection with a well-chosen question, a short questionnaire, small group discussion, etc.

Journals: Journaling is an essential tool for students to enhance their writing skills. A few programs have begun to experiment with online journals or blogging, but hand-written journals still seem to be preferred by programs that not only place a high value on reflective writing as a tool for personal growth, but have sufficient staff to maintain the journaling component once it is established. Regular reading of participants' blogs and journals can give program staff a better idea of how individual participants are experiencing the activities, relationships and challenges.

Journal Writing TIPS:

- Brainstorm with teens on a list of potential topics for journal entries
- Work with teens to write a list of dos and don'ts for journal writing, e.g. always start with an entry with the time and place
- Don't focus on grammar or punctuation
- Instill a sense of ownership by encouraging the teens to decorate their journals
- Establish a schedule for entries and encourage the use of pictures and other forms of expression in the journal
- Establish a dialogue with the teens through their journals that is sincere and prompt
- Reinforce the importance of privacy by designating a secure place to keep the journals
- Recognize that occasionally a young person will make a journal entry that he or she wishes to keep completely private; allow teens to fold and staple shut any page that is not to be read
- Respond to every entry, even if your response is brief.
- Allocating time each day for journal writing can be difficult, particularly if your program is already under time constraints; build reflection time into the program design as part of the routine

Dialogue journals: This type of journaling can provide a tremendous amount of insight into the participants of a youth program and the program itself. A dialogue journal is an ongoing, private conversation, written not spoken, between you, the program leader and a young person. The role of the program leader is pivotal since his/her responses are often the source of motivation for the writer to continue writing. The benefits of responding to each student's journal entry far outweigh the drawbacks that might appear. Once a routine has been established and the writer understands that his/her writing will elicit a response, participants will commit their efforts to writing something of substance. Having another person respond to a piece of writing in a non-judgmental manner is exhilarating, a kind of excitement that is not that dissimilar to receiving a letter from a friend. This commitment can be parlayed into other aspects of the youth program. The sense of being someone who matters will be reflected in the caliber of the participant's performance on non-writing tasks and activities.

Journal writing should be kept simple, with as few rules as possible and prompt responses from staff. Since journals are normally personal, a great deal of time should be given to laying the ground rules for the journal writing/reading process. Youth participants should feel confident that though staff will be collecting and reading the journals, they will not share, by name, any information learned through the journals with other participants.

Finally, you should be aware of the wide range in degree of formal English language mastery that you are likely to find among your participants. Some adolescents have difficulty expressing themselves and their increased self-consciousness only exacerbates their unwillingness to take risks. Teens from other countries have not only the affective issues inherent to their developmental stage, but may also have numerous explicit and implicit obstacles that must be overcome in order to express themselves comfortably. When learning a new language, there is always a disparity between one's comprehension of what is read and heard and what one can say. Journals, particularly dialogue journals, can provide the English as a Second Language (ESL) learner a more comfortable way to express him/herself. The stigma of saying something inappropriate or inappropriately is alleviated, and the writer will take more cognitive (such as analysis, synthesis, etc.) risks as a result.

5. Next Steps
What happens next will be determined by what occurred during that day's activities and what's scheduled to happen during the next meeting. Even if you're asking the teens to prepare for or bring something with them to the next meeting, avoid using the term "homework." Make the instructions clear and the activity doable, i.e. it shouldn't require any money, equipment (unless you're providing it) or time beyond the hours of the program.

6. Discretionary Time
The session, whether working with younger or older adolescents, should have discretionary time built in so that the teens can continue a project they had previously begun or simply socialize (after all, they are teens). Initially, this discretionary time should be structured with clear limits. This can ensure that the young people will have the time to inquire, investigate and question on their own terms. It will give them the opportunity to try, the freedom to fail and the courage to try again.

SPECIFIC CURRICULUM CONSIDERATIONS FOR POPULAR PROGRAMS

EXPLAINER PROGRAM BASICS

Explainers must have multiple opportunities to learn the science content within the exhibit or objects with which they'll be working. Support their learning by arranging meetings/discussions with scientists, challenging them to conduct their own research, and providing substantive training in related topics. Give them time to work with the exhibit so that they actually understand what they are talking about. You may have to start them out with a prepared script or list of probing questions, but they'll soon find a way to make it their own.

Public speaking skills are critical for Explainers. Once they have become comfortable with the content, they will need lots of opportunities to practice and develop their own style of presenting information. Constructive peer critiques are very useful tools for this group of young people. This may be the first time that many teens will be in the public eye and the issue of what is and is not appropriate will need to be discussed on a regular basis.

Develop role plays of possible scenarios (using edited real-life museum-based occurrences is a good strategy). Veteran Explainers can also help new Explainers by mentoring them or leading small group training sessions.

Some programs give new Explainers three-month assignments, rotating their exhibit assignments throughout the year; other programs schedule explainers by the semester or by the year, depending on the number of exhibits that are available. Science centers with highly experienced Explainers may rotate as frequently as every two hours to avoid boredom. If possible, young people should be scheduled to work on the floor at least once a week for at least 3-4 hours at a time or even a full day if they are mature enough to remain attentive to both the exhibits and the visitors' needs the entire time.

The Explainer Program at the Exploratorium in San Francisco, CA breaks "explaining" down into levels:

Level 1: Being There
Simply being present in an exhibit section sends the message to visitors that there are explainers on staff who are available for help or to answer questions

Level 2: Modeling
Demonstrating the various ways in which the exhibits can be used and played with shows visitors, in a non-pedantic way, how they might also interact with them

Level 3: Facilitation
Respectfully watching and listening to visitors can provide entry points for explainers to begin conversations and occasionally show visitors "which button to push"

Level 4: Explaining
Approaching visitors who are interacting with exhibits that explainers are well-versed in and excited about provides explainers with opportunities to try out what they have learned and practice interacting with a variety of people

Teens will probably need help in developing a work ethic, which includes:

- committing to working when they are scheduled
- finding a replacement and notifying their supervisor if they can't make it to work
- punctuality and doing their work well and in a timely manner

In general, working with the public can be a fun and rewarding experience, but there will be days when it is more challenging. So, Explainers will also need to:

- develop visitor service skills for their role as representatives of the science center or museum
- understand the importance of their role in the success of the science center as a system
- learn how to encourage the learning of others by asking questions that promote inquiry
- learn how to listen
- know what their responsibilities and the limits are
- know when and where it's appropriate to vent their frustrations

Curriculum Ideas for Explainer Programs:

- Science-related topics that are reflected in the exhibits
- Developing and honing interpersonal skills
- Techniques to promote inquiry
- SCANS skills, including technology, systems, resource, interpersonal and information skills
- Educational and career planning
- Visitor service

If you are designing a summer program that involves young people for extended periods, be sure to vary the activities to maintain their enthusiasm.

DEMONSTRATOR PROGRAM BASICS

Because learning the science content, public speaking and quality visitor service are critical prerequisites, teen Demonstrators have usually had extensive experience as Explainers. Now, however their training must enable them to become very comfortable with a particular activity, ideally one with interesting objects, designed to attract and engage an audience.

A Demonstrator will probably have a larger audience than an Explainer, must hold the audience's attention for a longer period of time and engage the audience in a different way. The teens will need ample time to master not only the science concepts and the activity, but also pedagogy appropriate for these informal learning sessions. Questioning, probing and listening are all important parts of demonstrating. If you need help with this, consider inviting experienced museum educator to assist with this part of the training. It's not very likely that many teens will have had the chance to learn how to listen.

The teens will need training activities that will help them learn how to respond appropriately and optimally to different people. Teens can begin to become reflective about themselves and how they learn as a path into learning about the different learning styles of others. Practice sessions (videotaped, if possible), with critical feedback from peers and staff are essential to the development of a successful Demonstrator program. Be sure to identify an adult staff resource person to provide ongoing support for each demonstration by providing the necessary information and materials.

Curriculum Ideas for Demonstrator Programs:

- Science-related topics that are reflected in the exhibits
- Questioning techniques
- Diversity
- Conflict resolution; explore issues like right vs. wrong ideas
- Visitor service
- Allocating resources; time, money, materials, staff, space-skills
- Interpersonal skills; public speaking, handling questions tactfully, professional demeanor
- Information skills; researching the science behind the demonstration

APPRENTICESHIP AND INTERNSHIP PROGRAM BASICS

The training for this type of employment is highly individualized and will probably be conducted by the teen's supervisor in the specific department where the teen is assigned. Your role in this type of program will be one of a mentor, confidante (for both the teens and the department supervisors), coordinator and source of support. As you recruit other science center staff to work with teens, remember that these department staff:

- Must be comfortable with young people and willing to connect with them on a personal level
- May need your help understanding how to set reasonable standards
- Should know what your expectations, the teen's expectations and his/her own expectations are in working with an apprentice or intern
- May need some insight on how to teach teens the skills they will need
- Need to understand what constitutes meaningful work and, more importantly, what does not
- Must know that they can approach you for help, advice and general support
- Should expect regular meetings with you

The young person's internship supervisor may need assistance in developing an appropriate assessment tool to guide their work with the teen. A Resource: YouthALIVE! in the Workplace: A Workskills Manual can be found in Appendix V of this handbook. Each of the five YouthALIVE! in the Workplace modules as well as its Appendix C all include assessment tools for work-based youth programs in museums and science centers.

TIP:
A staff member should not have more than two interns or apprentices at one time. These types of programs will require your constant attention, especially at the beginning of each assignment and for new supervisors.

Pay close attention to the training of the young person to ensure that the work is meaningful. If necessary, gently remind the supervisor that the internship program is not a source of cheap labor.

This type of placement usually lasts a semester or a summer and is reserved for teens age 16 and older. However, depending on the situation, these placements may continue for a full year or more. Some internships have led to jobs for teens after graduation.

Although teens will still need your support, they need to understand that this is a unique opportunity for them and for the youth program itself. In some instances they'll be ambassadors for the program in other departments. Before assigning teens, make sure they completely understand:

- The responsibilities of working in a different department
- How it will differ and resemble their previous experiences
- Everyone's expectations, including their own
- The importance of seeking regular feedback on their job performance
- Their responsibility in fulfilling their tasks
- To ask for clarification when they're unclear on how to complete an assignment

Regular check-ins with the teens, especially on a one-to-one basis, are particularly important in this type of program. While many issues can be dealt with in a group setting, there also may be issues that will require tact and discretion. Make sure the teens know that in addition to regular gatherings, they can meet with you whenever they need to discuss an issue or problem.
Workshop Curriculum Ideas for Interns:

- Science-related topics that are reflected in the exhibits
- Educational and career planning
- Structure and function of the host department
- Roles of various department members, including the interns
- SCANS skills: resource allocation, interpersonal relations, information acquisition and management, technology use, and understanding systems

CROSS-AGE TEACHING PROGRAM BASICS

Cross-Age teaching programs have multiple benefits: younger children from community programs or elementary school classes have role models who are cool and smart. They are exploring science under the leadership of "cool" teens who have been motivated to master science concepts so that they can do well with their young charges. Out of necessity these programs must have a multi-faceted curriculum that meets the developmental and workforce preparation needs of the teens, prepares them to lead informal science activities with younger children and fully engages all the younger children and the teens in interesting science activities.

Like other work-based models in museums, these programs provide opportunities to learn new skills and information while helping others. Those planning cross-age teaching programs, should consider the above described ingredients, the four core content components and relevant elements found in explainer and demonstrator programs (i.e. science content, public speaking, teaching and learning, and work ethic). However particular care must be made to structure the program so that preparation for their role as "teachers" is thoroughly integrated into the schedule. Beyond the science concepts, the teens will need training in pedagogy – asking questions, listening, responding to questions, giving feedback, working with materials or objects and group or class management. They will need to develop an awareness of factors that contribute to a positive learning experience for the age group of children with whom they will be working.

If the teens are to be successful "teachers", their training should engage them in science in a way that is consistent with the National Science Standards and best practices in informal science education. (A science museum educator can be a great resource for this.) Teens have been most successful where their science content workshop leader has been consistent

in utilizing an inquiry approach when introducing the teens to science concepts, encouraging them to ask questions and engaging them in hands-on activities in search of answers. This gives the teens a set of expectations and a model for their own teaching behavior when working with the children.

For example, the Exploratorium's website is an excellent staff resource for exploring inquiry as an approach to teaching.
http://www.exploratorium.edu/ifi/workshops/index.html

Practice is essential and critical feedback from peers and staff must be built into the practice sessions. After participating in a science content workshop, teens in one program work in pairs, alternating as "teacher" and "learner" facilitating and exploring the new hands-on activity. In another program individual teens take turns "teaching" the group of peers, using the discussion afterwards to help improve their presentations.

Unlike Explainer and Demonstrator programs, there is no automatic audience of museum visitors for the teen "teachers" in cross-age teaching programs. Unless the teens serve as teaching assistants in museum-based programs for children, their audience must be recruited from organizations out in the community. Usually program staff work out agreements or partnerships with the staff of afterschool and summer programs of community-based organizations or with elementary school principals. This means that the teens' training in allocating resources, interpersonal skills and understanding systems might extend beyond working in the museum to working with community organizations or schools.

A resource:
YouthALIVE! in the Workplace: A Workskills Manual for work-based youth programs includes training activities and materials for youth in museums and science centers. See Appendix V of this handbook.

Sample Group Reflection questions:

- How did it go today?
- How would you rate the day on a scale of 1-10?
- What worked well for you and what did not?
- What do you think the children/visitors learned from their time with you?
- What would you do differently next time?
- What do you need more help with?

Finally, in addition to the personal reflection of journaling or blogging, since cross-age teaching is a communal endeavor, it benefits from communal reflection. Providing structured opportunities for teens to think about and discuss the work that they have done can strengthen them as budding informal science teachers, and enables them to gain valuable insight from their program leaders who have observed their sessions with the children.

Teens Teaching in St. Louis

Teens participating in the St. Louis Science Center's "Youth Exploring Science" work in the Science After School program which has been operating in conjunction with the Science Center's teen program for nine years. These YES teens bring inquiry-based science activities to local schools and public libraries throughout the year.

http://www.youthexploringscience.com/programs
See Appendix III of this handbook for a profile of the YES Teen Program. Appendix IV includes an in-depth look at this and several other programs.

AS TEENS MATURE…

Continually ask yourself the question, "Can a young person do this?", and if the answer is yes–let them! Once teens have mastered the first phases of working in a museum or science center, many programs are structured to offer expanded responsibilities like assisting with birthday parties, opening events and community outreach activities, in addition to or instead of, their regular floor assignments.

Career Ladders which are not envisioned when an institution's first youth program is being planned, often evolve over several years as programs seek to match the young people's growing maturity, expertise and commitment to the science center or museum.

Examples of career ladders in youth programs:

Philadelphia Zoo: Junior Apprentice Program (JZAP)
http://www2.philadelphiazoo.org/participate/Volunteer/Teens/Apprentice-Program.htm

New Jersey Academy for Aquatic Sciences: CAUSE Program
http://www.njaquarium.org/community/cause.html

New York Hall of Science: Science Career Ladder
http://www.nyscience.org/join_getinvolved/www.nyscience.org/SCL

In addition to models developed by these and other institutions, there are numerous ways in which the interests and skills of teens can be applied to real needs in their museums and communities. Just remember, your curriculum must always remain flexible enough to offer new challenges commensurate with the new competencies that your young people so proudly demonstrate.

Module 2: PROGRAM DESIGN

Part E: OPERATIONAL and LOGISTICAL ISSUES

OPERATIONAL AND LOGISTICAL ISSUES

SCHEDULING

To develop your program, you will have to work with your community's school schedule. Be sure to check schedules of all schools in your area as their schedules often will vary. To access public school information, call the Board of Education and request a copy of the school calendar or look for a posted calendar on the school district's website. For parochial and charter schools, contact either the local Catholic Diocese or each individual school for their school calendar. Merge the calendar information for the schools as well as that of the science center. Highlight the days off from school and interface those with any special events the science center. Also consider outreaching to home school youth, their school calendar is often very flexible.

After merging the school calendars with the museum or science center's schedule of major events and trends in visitor attendance, carefully look for lulls in the science center's schedule. These lulls in the institution's schedule may be ideal times to 1) start your program since it's much likelier that staff will be available to assist you, 2) plan for ways in which the teens can assist during the museum's busiest times when school is not in session and 3) schedule critical staff training time.

Programs can be organized by semesters and typically last a year or more. This type of work lends itself to weekend and summer employment. Teens generally come at least once a week for at least 2-4 hours during the school year, but work more during the summer. Some programs begin with new recruits who volunteer and build basic skills in the summer and those young people who demonstrated the most progress and competence acquire more responsibility for their demonstrations during the school year and become eligible for a small stipend.

Other programs have found that teens from low income communities need to earn money regularly. Therefore those programs are designed to offer year-round job opportunities for youth.

An example of a youth program: http://www.youthexploringscience.com/

It is important to note that when working with youth that flexibility is of utmost importance. Their schedules change continuously as do their interests. They can have a lot of commitments in school and in other organizations. If you want to keep them involved it is important to work with them and keep them engaged as much as possible.

SPACE

A space devoted to the youth programs and activities is essential, even if only used during program hours. A designated space for youth to gather and participate in program activities allows them to feel at home in the museum. Before initiating your youth program confirm what space you will be using for all your program sessions and where and how you can secure any on-going projects. Make sure the space can be kept tidy throughout the duration of the program. If it is a permanent or semi-permanent space, engage youth in how the space will be decorated.

Investigate your institution's process for reserving additional space for special activities that might occur with your program, including youth-family meetings, training, etc. As much as possible, book your spaces at the beginning of your program.

YouthALIVE! found that while museums might have set aside any available space for the teens initially, as the programs matured, the program staff successfully advocated for a larger and more permanent space in which the teens could learn, train, work, socialize and study. Over time several (Science Museum of Minnesota, St. Louis Science Center and Lowry Park Zoo) were able to create centers dedicated to providing ample space in which teens can grow and thrive; and some teens and staff can be found in these spaces during non-program hours using the computers or other resources.

STAFFING

To run an effective youth program, you need resources, particularly staff support, funding and space. Hiring the right people is an essential task. Consider how many of your staff will be 'content' people (e.g. have a science, math, history background, etc.) and how many will have expertise in youth development and or social services/counseling. Both aspects will be critical to a well-designed staff. Allow plenty of time for ample recruiting and hiring, including the completion of background checks (required in some states for adults working with minors).

Ideally, you want to keep the ratio of youth to adults as small as possible, particularly if running any type of training program or hands-on workshop (see suggested ratios in the Models section). It is important for youth to feel connected to staff and for staff to be accessible to the youth, which can be difficult if attempting to serve large numbers of participants.

Equally important will be your plan for initial and on-going professional development for the program staff. The plan should include mechanisms for the staff to learn from each other. Remember, if you don't plan for it, staff professional development will not happen.

PREPARING THE MUSEUM

Museums have not historically been places that employ teenagers in significant roles. While this is changing, it's very important to think about your organization's culture and how to make it a welcoming place for teen workers, as well as be mindful of current staffs' preconceived notions about youth as co-workers.

The process for preparing staff will include formal workshops or orientations, but should also include some personal ally building across the organization. How can staff from various divisions be part of your training and acclimate teens to their new job functions, for example? How might staff from community partner organizations help you facilitate dialogue and understanding about the assets young people bring to a work environment?

It will also be important to keep staff current on the happenings of the program. Send out emails about events and activities, present information at all staff meetings (or maybe have some of your youth present at all staff meetings) and invite staff to participate in events or activities, as appropriate.

RECRUITMENT AND APPLICATION PROCESS
(See *Module 2: Program Design: Part F: Implementation*)

Depending on the approach you've selected, there may be logistical issues to address. If, for example, the application process includes interviews with teens and their families, will additional rooms need to be reserved? Will childcare be needed to ensure that parents/guardians can attend an orientation or interview with their teen?

STIPENDS OR SCHOOL CREDIT

For many young people the idea of a stipend is equivalent to their first paid employment. This is a real motivator for young people who have access to relatively few resources. If young people are to receive a stipend, work with human resources or other appropriate department to set up a payment schedule and procedures, before the start of the program. If students are to receive school credit, work with your school partner to complete those arrangements prior to the advertising of the program and file the dated written agreement once it has been signed by an authorized representative of the school district administration.

UNIFORMS

In most science centers and museums, teens working with the public have some type of uniform that identifies them as science center or junior staff. The uniform could be the same uniform that the staff uses or a tee-shirt, smock or apron that's been modified for the teen program. For the teen, and the public, the uniform validates the young person's role and worth to the science center, and identifies him/her as a part of the internal science center community. It is also important that there is internal recognition of the youth. This could be lapel pins that the youth can wear on lanyards. The pins could indicate what parts of the program they have completed.

ADDITIONAL TRAINING

Ongoing training for participants shows the youth that you are invested in them. Some programs arrange to have the young people participate in training workshops for volunteers, which contributes to a sense of community and camaraderie with other volunteers. Youth program staff generally schedules intensive training and with many opportunities for practice before the young people are assigned to an exhibit, demonstration or class. Sometimes they are allowed to shadow veteran staff or volunteers as they do their job. In reflection sessions, teens may constructively critique each other's practice presentations and discuss their daily experiences in the exhibit hall.

FIELD TRIPS

Because the energy level of young adolescents often approaches warp speed, they'll need a lot of variety and room to move. Occasional field trips to other cultural institutions, nature centers or special events may absorb some of this energy while allowing participants to explore environments and new ideas. Factor in the availability and cost of transportation when selecting field trip destinations.

Whenever you leave the science center with the young people, you MUST have a sufficient number of adult chaperones and signed permission slips from each participant's guardian/parent. If you plan to have off-site outings, identify the desired outcomes for the

trip's participants. Then make your plans and reservations. Collect all permission slips well in advance. Check with your science center about liability coverage on youth participants who go off-site on a science center-sponsored outing.

DISCIPLINE

For your program to succeed, the young people will have to commit to respecting one another, you, the visitors and the science center. The orientation session and program handbook should be explicit about basic rules and expectations. (See Appendix II for sample program handbook and orientation session materials). It is possible that there will be some young people who are still too immature to handle these expectations. Talk to this individual directly. There may be other issues outside of the museum that they are struggling with. Set up a plan with them to help change the behavior. Enlist the support of other participants to try to help the less mature teens reach a point where they can contribute positively. If peer support doesn't yield any results, talk the situation over with your community partner and arrange a meeting with the teen's guardian/parent and the teen to discuss the problem. Assign appropriate consequences when needed. Give them several chances, possibly including suspension, before asking them to leave the program.

Some programs have found it helpful (and empowering) to include youth in the development of group rules for behavior and the consequences of not adhering to those behaviors. This is something you may want to consider, especially for programs engaging older youth.

PROGRAM ADVISORY COMMITTEE

A program advisory committee can help you with: developing strategies to effectively recruit, work with and retain teens; understanding the political aspects of the community that affects your work; identifying allies who can help the program and who could connect you with potential future funders. Committed advisors can be great advocates for your program.

Try to keep the group small, diverse, productive and influential. There should be no more than 10-12 people on an advisory committee, including those who assisted in planning the program. Seldom will all members be available to attend every meeting, so be prepared to work with smaller numbers than expected.

RECRUITING ADVISORY COMMITTEE MEMBERS

If there are committee members whom you'd like to have on the committee, but their schedule prohibits their participation, consider asking if they could review program plans and give you feedback by telephone or participate more fully in the future. Recruit individuals who represent the community that you'd like to serve. This group of potential candidates can include parents, young people, representatives from youth service and other community-based organizations, local businesses, the school system, larger businesses, etc. Before asking an individual to join your advisory committee, try to assess that person probable commitment to the project/program and ability to be productive, given his/her personality and schedule. Consider asking fellow community members for input and recommendations.

Be prepared to pitch your advisory committee as an important and cutting-edge committee. People, in general, are over-worked, so be specific about what you'll need from the advisors

and how much of their time you think you'll need from them. Have a calendar of meetings ready to give to each potential advisory committee member to help each member to budget their time accordingly.

ADVISORY COMMITTEE ETIQUETTE

Report on the program's progress and success to the committee via post or email. Keep them apprised on funding situations. In the case of rotating advisory committees, consider a small thank you ceremony for departing advisory committee members. Take every opportunity to laud their participation by sending a notice to their place of worship, professional organizations, etc. Extend an open invitation to members to come and see the young people in action at the museum. If an advisory committee member has poor attendance, contact him/her to determine whether his/her schedule prevents participation. Let him/her know you really need the help and ask for specific solutions to the conflicts.

ADVISORY COMMITTEE VS. ADVISORY BOARD

Our discussion thus far has been centered on seeking the advice of knowledgeable others as you plan and begin a new youth program. However, in the Fundraising Module of this handbook, we discuss formal Advisory Boards. As your program matures and succeeds, you may wish to seek funding from large private foundations or the National Science Foundation (Informal Science Division). In that case, you may find it wise to transition from a less formal advisory committee comprised of local people, to a more formal Advisory Board which includes a group of professionals who may live outside of your geographical area, but bring a diversity of expertise to the project for which you seek funding. If you do decide to form a national Advisory Board for a particular project in your youth program, remember that your program's local advisors can be your strongest, ongoing allies and advocates. Find ways to keep them updated, involved and acknowledged.

Module 2: PROGRAM DESIGN

Part F: IMPLEMENTATION

You have community partners, funding, staff, a program outline, space, a schedule and the support of your administration. Now you need your teens!

IDENTIFYING AND RECRUITING YOUTH PARTICIPANTS

How do you recruit your teens? Use your community partners to reach teens beyond your typical science center membership and visitors. They are a vital resource to finding teens in underserved/underrepresented areas of your community and those teens are, in general, more in need of youth programming than others. Before you begin recruiting you need to:

- Be clear about the criteria used to choose program participants and how this criteria was developed through input from your advisory committee, youth focus groups, science center staff and community partners
- Specify the benefits of the program and how they will effect young people and community; For example, educational enrichment for younger children will help boost science test scores and encourages creativity in science
- Highlight the additional benefit of knowledgeable teens able to bring activities learned in the science center back to the CBO to mentor younger teens
- Call upon your allies to help establish trust with teens and follow-up conversations with a thank you call or a note

If you are establishing a work-based learning or youth employment program, use a printed position description as one of your recruiting tools. While preparing the position description for your program, include the number of openings that you are seeking to fill.

CREATING THE APPLICATION

The New Jersey Academy for Aquatic Science not only invites Camden area teens to visit the website for its Community and Urban Science Enrichment Program (CAUSE), http://www.njaas.org/Community/CAUSE.html, and also posts a fact sheet and application for interested teens.

For many teens, filling out the youth programs application will be their first interaction with the working world. It is an opportunity for them to learn what employers are looking for in an applicant. Be specific in you instructions and say exactly what you want, ie., complete all sections, application should look neat, basic information, etc. You will need each teen's contact information including full name, home address, mailing address, phone number(s), email address, emergency contact information (name of adult, relationship, phone number) and demographic information such as date of birth, gender and race/ethnic background.

Other information to include is past volunteer/work experience, community organization affiliation and school name. Have a space for a parent/guardian signature, so that you know that an adult is aware that this teen has applied to your program.

TIP:
Sometimes families may have to move several times within a year or two. To increase the likelihood of remaining in contact with participants after they leave the program, some program leaders also request the name, address and phone number for a relative who is not likely to move out of the area.

Essays: It is also helpful to have applicants answer a few essay-type questions. Essays could be: What is your favorite subject at school? Why? What career(s) are you interested in? How do you think being a part of the Museum program will help you prepare for your future career? etc. Essay questions are what an adult would put in a cover letter. Because teens will have little to no experience with cover letters, essays are a good substitute while helping them through the cover letter writing process. Be lenient in evaluating the essay answers—for some teens, it is an accomplishment that they answered them at all! You can use these applications in a future workshop, after the teens have been accepted into the program by helping them make corrections and necessary improvements. By this time they will have a better idea of what an application should look like.

Recommendations: If the teens are not recommended by one of your community partners, you may wish to have the teen include a written recommendation with his/her application. This recommendation should come from an adult who is not related to the teen, preferably a teacher, coach or religious leader. Since the teen has limited or no work experience, this recommendation should focus on how well the adult thinks this teen will do in your program, what she/he may contribute and what she/he stands to benefit from being involved with the museum.

For a sample recommendation form:
http://www.njaquarium.org/community/cause/recommendation_form.pdf

Deadlines: Make sure that the application deadline is clearly indicated. If you have rolling enrollment, it is helpful to give the teen a deadline of three weeks to return the completed application, so they feel some urgency to complete the application in a timely manner. Also be very clear about how the application is to be returned to you, whether by mail, drop off, fax, email or through a community organization.

Sample application forms:
http://www.nyscience.org/media/file/Explainerintern.pdf

SELECTION CONSIDERATIONS

Interest in museums? Desire for employment? Interest in science, math or technology? Commitment to education? Age and/or grade? Demographic balance? Social skills? Neighborhood? Need for support? All of these?

When asked about their selection considerations, youth program leaders cited two or more of the following:

- Interest in museum
- Commitment to employment
- Interest in science
- Potential for personal growth
- Social skills
- Interest in new experiences
- Openness to working with people of diverse backgrounds and ages

Some programs look for teens who express an interest in the museum, but that is not a sufficient criterion for program leaders who know that if you have never spent time in a science center or museum, you would not have had an opportunity to develop that kind of

interest. In fact, what may be much more apparent is a teen's strong desire for employment.

For museums committed to reaching underserved teens, a commitment to learning to be a good employee is sufficient, even without an initial passion for the museum. In either case, the teens must be ready for new responsibilities. Experienced youth program leaders report that they look for teens for whom participating in the program will be a good experience and whom the program could help move closer to a "professional" future. These leaders try to look at the "whole child" before making a selection.

The teens' interview responses, staff observations of teens' reactions during orientation and training sessions and a teen's interactions with other youth are indicators used by staff to identify the young people who would fit best into the program. Most programs also require written consent from a parent or guardian.

The above discussion of selection criteria is a reminder that the criteria must fit your program. If one of your goals is high school graduation for every participant, then commitment to long-term participation is essential. When filling internship positions, you would want to think about how well the applicant will fit into a particular department. For teaching assistants—does the applicant enjoy being with children? For Explainers—is the applicant willing to work on communication skills and science content mastery?

One program director explained her program's selection criteria as follows:

"Youth must be between the ages of 13 and 18 and be enrolled in a school. Beyond that, our biggest qualifying factor is their commitment to the program. Since our goal is to retain each student until high school graduation, their interest and dedication to the program is of utmost importance. The next thing we look at is their openness to diversity and new opportunities.

Being that we do a lot of work that requires the youth to 'step outside their comfort zone,' being open to new things is extremely important. We gage this criteria based on their responses to interview questions. Once general orientation begins the students know that they are still under review and are not automatically accepted into the program."

For programs that seek diversity and balance among participants, there are other considerations. While some leaders seek a balance between high academic achievers and average or underachievers; others seek to include teens from a range of socio-economic levels; and others desire representation from a number of high schools or communities. Most programs that began as YouthALIVE! sites focused primarily on recruiting teens who had very few prior opportunities to interact with the world beyond their homes, schools or immediate neighborhoods. As a result, greater diversity was reflected in the culture of the museum and in the experiences of teens.

Benefits of Programs that Match the Needs of the Participants:

- Very shy teens have credited Explainer training as helping them gain the confidence needed to converse with museum visitors
- Explainer training has helped extroverted teens focus and refine their social skills
- Teens who have little family support have said that the people of the program are like a family to them
- Teens with supportive families have later recruited younger siblings into the program

RECRUITING YOUTH

Before your visit: Develop eye-catching posters or fliers that describe the program, the benefits of participating, where to get more information and announce your imminent visit; provide your recruiting partner with clear responses to frequently asked questions; and compile application packets that can be distributed and completed while you are there, if time permits.

During your visit: Have all your forms ready to distribute. Your presentation is an infomercial–keep it upbeat, interactive and leave enough time for a question and answer session.

After your visit: Review the applications ASAP. If any of the applications are incomplete, try to notify the applicant (either directly or through the partner). Be aware that there will probably be some applicants who would be excellent program participants, but first may need assistance with the application. Choose a core group of participants and a group of alternates. (Plan for attrition–the alternates can go through the training and if one of the core group drops out, the alternate will be ready to take their place); notify everyone who applied of their status and thank them all for their interest. Be very clear with applicants who were not chosen about the criteria you used in your selection process. This is a very important point, because it sets the tone for how all of the stakeholders will perceive who the program is designed to serve.

Interviews

An interview is a chance for you to get to know each applicant better. In the interview, some qualities will come through that were not apparent in the application. Some applicants express themselves better face-to-face than they do in writing. The interview is also a chance for the teen to get a better sense of what the program is about. Interview all of the applicants if possible. When contacting the teen to schedule the interview, be explicit about what to expect (e.g. "The interview will last 30 minutes and we will give you information about the program and ask you questions about why you want to be involved what makes you a good candidate."; "Dress professionally—no baggy jeans or tee shirts"), how to gain admittance to the museum and where to meet.

Group Interviews: Perhaps one of the most efficient ways to learn how applicants function in a group setting might be to invite all interested applicants to a well-planned orientation meeting. Have one or two group activities that will enable you to evaluate some of the qualities you are looking for. During the activities, keep an eye out for how well each teen works in a group, who is a natural leader, who tends to shy away from the group. Try to make the activities representative of what the teens can expect in the program.

At the end of the session, be very clear about what the next steps are, and when the applicants can expect to hear back from you. Give them your business card so they can contact you if they have any questions.

Teen Involvement: Current program participants are excellent interviewers. Try to have at least one teen on the interview team. Meet with the interview team teen(s) before the interview to walk them through how the interview will proceed and give them a chance to review applications. During the interview, encourage the teen interviewer(s) to talk about their experiences in the program—what was the hardest part about the program, what was

their favorite part and why do they stay involved. Talk with the teens afterwards to get their feedback on how to improve the interview process and evaluate the candidate.

Individual interviews: If you have prepared questions, give the applicant a chance to quickly read through them before you begin the interview. This will help him/her relax since she/he will know what questions you will ask.

TRANSPORTATION

Since young people will need a safe and reliable way to get to and from the science center, you will have to address the issue of transportation – unless the targeted underserved community is within walking distance of the science center.

If the science center can't provide transportation, find out:

- If any of your community partners have a bus that will transport your kids
- If there is a corporate group that allows their company bus to be used on weekends
- Public transportation routes and fares

If you will be providing transportation, use one session with your young people before the program begins to help establish rules for riding the bus. Think creatively, discuss strategies with your partners and never lose sight of your goals.

ESTABLISHING EXPECTATIONS

CLIMATE BUILDING

Cultivate a climate for thinking and mutual respect from the very first day by modeling the behavior that you expect of the teens. One of the easiest ways to do this is to simply listen to them and hear what they have to say. Establish a policy about put downs, insults and hurtful comments early on. Appreciate their individuality and openness and encourage discussions. Emphasize teamwork and learning. Nurture their confidence and give feedback that will encourage them to try again. Building rapport takes time, but it will be time well spent. State your expectations and elicit theirs.

Some of the young participants may attend large, impersonal schools lacking the resources and time to encourage students' thinking, creativity and reflection. For some young people experiences in unsupportive educational environments can become roadblocks to learning. You, as director of the program, and other staff may be able to help the student remove, or at least learn to negotiate, these roadblocks. You may be the first adult outside of their family who helps the young person discover that s/he really is smart.

In a professional setting, youth should be expected to maintain a certain standard of decorum, but that standard needs to be consistent with their developmental capabilities. It is important that staff discuss what can be realistically expected of youth and develop policies and guidelines accordingly. To introduce the parameters in which young people have to operate, create a comprehensive training periods.

ORIENTATION PERIOD

Although the initial orientation is finite, the process continues as the program evolves with the growing abilities of the teens and the shifting needs of the science center. Many programs are structured to offer opportunities for promotions as the young people develop skills and demonstrate job competency. Whether or not your museum or science center offers a structured career ladder for young people, during the initial expectations, and procedures of your program; be specific of how your program will help them in the future This gives them something to look forward to as they mature in the program.

Training is a cyclical process that builds on the knowledge that the young person brings with him or her. Although variety is the spice of life, especially the lives of teens, important information needs to be reiterated periodically. Generally speaking, younger adolescents will need to hear the same information in different ways more often than older teens. Younger teens will also require more support when there are other factors vying for their attention. So, the first few weeks of the program will probably be rife with distractions as the young people become acquainted with each other and their new surroundings.

Try not to introduce complex projects too soon, which for younger teens would be before two or three weeks and at least one or two weeks for older teens. Use this time to build camaraderie, familiarity with the science center environment and a sense of what's appropriate.

THE PROGRAM HANDBOOK

Don't assume that the young people coming into your program will know what is and isn't appropriate work place behavior. Developmentally appropriate guidelines need to be clearly stated at the very beginning of the program and constantly reinforced. For this purpose, a Program Handbook might prove helpful.

Every organization has some sort of manual or handbook that explains the mission, history, rules, expectations, etc. of the organization. A good handbook helps everyone understand what's expected of them to do their job more easily. This one document can contribute directly to your program's success. Though your science center's handbook is probably a little too technical for the young people in the program, you can modify it into a teen-friendly version. If your science center has a human resources office, ask them to peruse your handbook and give you feedback on whether or not it's complete. Keep the text short and simple. Avoid jargon and technical phrases.

Your handbook should contain the following sections:

Policies
This section of the handbook should explain the science center's policies in such a way that they make sense to someone who has never had a job before. Include a short explanation as to why each policy is important and, most importantly, a clear explanation of the consequences of not following the policies. Issues you should cover are:

- Punctuality and procedures for notifying staff of future absences
- Procedures for arriving to and departing from the science center, specifically, arriving too early and not being picked up at the end of the day
- Rules about food and drink in the science center, including gum chewing
- What the teens need to do to get their paycheck
- Which sessions are mandatory
- Emergency procedures for the science center
- Equipment use, including appropriate telephone, cell phone, beeper, etc., usage
- Appropriate conduct, including dress code (specifically cite what is and isn't appropriate, including jewelry), exhibit floor dress code, proper language, rules about smoking and visiting friends and family

Err on the side of redundancy about what is and isn't appropriate. Emphasize that if they are not sure about what is appropriate, they should ask you. To encourage this level of openness, treat each question as legitimate without being judgmental. It is likely that if one young person has a question, then others will also.

Science Center Information
Although different program's handbooks detail different information, in general, they all include:

- Science center hours of operation
- A floor plan with brief description of exhibits and location of amenities
- Procedures for helping lost people and helping people find lost things
- Emergency procedures
- An organizational chart that explains who does what and how things are decided
- Some programs give each young person a loose-leaf binder (that stays at the science center) in which to keep important information

FAMILY/PARENT INVOLVEMENT

For its Galaxy Explorers program, the Chabot Space and Science Center in Oakland, CA created a multipurpose form for parents. It includes requests for emergency contact information, participation permission and essential medical information. http://www.galaxyexplorers.org/download/GEemergencyform.pdf

Another issue to consider is how to welcome the parents of these young people. They will want to know what you have planned for their children. They want to know what the teens will be learning and they want to know that they will be safe. Once a teen has been accepted into your program, you need to provide the following information to the teens' parents/guardians for their reference. Include:

- How to get in touch with you
- How to reach the teen while he or she is at the science center
- A simplified calendar of when the program meets
- A short welcome letter from the science center's director
- A brief description of what the teens will be doing in the program and why it's such a good idea for them to be in the program
- Program policies and grounds for dismissal

Many of the museums in the YouthALIVE! Initiative found that potluck suppers or other food-centered social events are a great way to welcome and inform parents. When planning these festivities include the younger siblings of the youth participants. Many families will not be able to attend unless they can bring the whole family. These occasions are wonderful opportunities to let the families see what your museum has to offer. In the past, program directors have discovered that many of the families had never been inside the museum.

NOTE:
If you decide to create a similar form for your program, be sure to have your science center/museum's administrator who handles legal documentation sign off on it before distributing it to parents.

ACKNOWLEDGEMENT OF ACHIEVEMENT

Youth who have excelled in the program should be acknowledged and rewarded by being handed increasing levels of responsibility. Another suggestion to acknowledge achievements is to have an end of the year celebration and give out certificates/awards to highlight each teen's accomplishment. One program director reported, "We have a large celebration with guest speakers, dinner, etc., this also gives me an opportunity to meet family members and build a stronger connection with teens and their involvement with the science center."

YOUTH ADVISORY COUNCIL

One fruitful way of acknowledging high achieving youth is through the establishment of a Youth Advisory Council. Several YouthALIVE! programs found Youth Advisory Councils to be quite effective in developing youth leadership skills and youth investment in science center operations. In Ft. Lauderdale's Museum of Discovery and Science, the Youth Advisory Council plans social and recreational activities for their peers, and helps staff remain cognizant of the needs and challenges of the youth program participants. A Youth Advisory

Council is usually elected by program participants and can provide an "official" vehicle for sharing the ideas and concerns of the young people with the museum leadership. This level of involvement may contribute to interests in a career in the science center or museum. Several alumni of the original Youth Advisory Council at the Miami Science Museum later became full time staff members.

Miami's current peer-elected Youth Advisory Board (YAB) contributes to the leadership of the Museum's Upward Bound Program, a federally funded TRIO program which supports high school students in their quest to be the first in their families to graduate from college. Because of the TRIO program, Miami's YAB members are able to participate in the National Student Leadership Congress which is held annually during the summer in Washington, DC. Current members developed the following mission statement for Miami's YAB: *"YAB's purpose is to excite, educate and influence our fellow peers to maintain a positive attitude towards the Upward Bound Program. We motivate student involvement and demonstrate leadership. Through our leadership, fieldtrips and fundraising events, we continue the legacy of excellence that lays the foundation of the Upward Bound Program."*

DOCUMENT, DOCUMENT, DOCUMENT

Even as you prepare to implement your program, have a plan for evaluation and fund-raising. Concrete strategies for documentation, evaluation and marketing, as the program begins, can support your later efforts to sustain the program.

You have worked hard to get your program up and running. Documentation can serve as evidence of past and future work. This evidence will probably matter to your museum's management team, your partners and current and potential funders. You will need to maintain documentation on participants, program activities and program management.

Participant Documentation

Collect as much information on each participant as possible, while not overwhelming either the youth or their parent/guardians. Keep forms simple and ask only what you really need know. Also, access to the information collected from your program participants should be restricted to program staff, unless parental permission has been granted, in writing, for information to be used for other purposes. YouthALIVE! project directors found that having the following information made their jobs a lot easier.

When a teen enters the program, document the following information:

- Parent's/Guardian's name, address, phone/pager number
- Emergency contact
- Name, address, phone/pager number of another relative
- Permission slip to participate in the program (every teen's parent/guardian should sign this form because it gives details about the times, places, expectations, etc. of the program).
- Medications the young person takes regularly; allergies or medical conditions you should know about
- What language(s) (other than English) is spoken at home
- Photo permissions signed by parent
- Name of teen's school; name of teen's guidance counselor

You should have a file for each student in your program and forms should be filed as they are completed.

During a teen's participation in the program, you should keep records of:

- Attendance/ sign-in records
- Contact log (a record of calls or other communication with parents, family and/ or participant)
- Job assignments and performance reviews
- Copies of report cards (if your program requires them)

Administrative Documentation

Your administrative files should include these basic official program records: proposals for funding, blank copies of all forms, attendance records, annual reports to funders, program summaries, program-related correspondence and internal documents like memos, meeting minutes, invoices, purchase orders, budgets, etc.

Program Documentation

Your program files should include copies of all program materials: orientation and training materials; curriculum materials; schedules and calendars; materials distributed to participants, parents, advisors, staff; samples of participants' work; participants' feedback on the program and materials used to access participants' progress.

Media-Related Documentation

Good press matters! Maintain a file of any media-related materials that feature your program. This includes articles from newspapers and magazines, press releases, program photographs, DVDs, and videos. This file might also include a well-written one page profile of your program. One program maintains a "Frequently Asked Questions" sheet for distribution as needed and well as a program profile document. Media related documentation could also include websites that feature your program.
http://www.smm.org/ysc/
http://www.youthexploringscience.com/programs

Developing an Evaluation Plan

Module 3: Evaluation offers a comprehensive guide on how to tackle evaluation of your program, including both in-house and outside evaluators. Discuss evaluation of your program early and often. Have your plan for evaluation BEFORE your program begins. Evaluation should coincide with program implementation not follow. Be certain to use what is learned through evaluation to improve your program whenever possible. A successful youth program is always evolving!

MARKETING YOUR PROGRAM

Who should know about your awesome program, besides the participants, their families and your community partner? Your audience for this information may be quite broad, but begin internally.

What vehicles exist for introducing the program to the museum staff and maintaining awareness? Presentations at all-staff meetings? Internal email? Memos or flyers? One-on-one meetings? Special presentations by the teens?

Experience has taught us that, to reduce the likelihood of embarrassing situations as the teens begin coming to the museum, it is important solicit support from important "gatekeepers" like security, admissions and floor staff. Your internal "marketing/ informational materials" should provide staff with basic information about your program, including goals, main activities, meeting days and times, number of participants and your contact information.

An effective youth program, particularly one that is designed to creatively meet the needs of the youth and their communities, contributes to the mission and image of your museum. The program can be an asset when your supervisor, the museum's director, the development director and/or the public relations or marketing director present the museum to the "outside world." Your external audiences might include your community partner(s); parents; leaders of other youth-serving organizations; local and state policy makers; city agencies; philanthropic organizations; local educators, including principals, guidance counselors and college admissions officers; and local media.

Sometimes you, the program leader, will be the person who can most effectively convey the merits of your program. When appropriate and feasible, seize local and national opportunities to share information about your program and the contributions of your teens. Consider participating in a consortium of professionals who represent local youth-serving agencies. If you are active in any national or international organization that serves science center or museum professionals, find out what support is offered for youth program staff. The Association of Science-Technology Centers (ASTC) maintains a listserv, ISEN, the Informal Science Educators' Network. This e-mail discussion list links more than 1,200 informal science professionals from around the world and might be a cost effective way of reaching out beyond your community. Others who are doing similar work are likely to respond to your questions.
http://www.astc.org/profdev/listserv.htm

Also, ASTC's annual conference usually includes sessions relevant to the field's youth programs staff.
http://www.astc.org/conference/index.htm

If you must prepare your own marketing materials without assistance from the marketing department, be sure your letters, press releases, brochures, announcements, invitations, fliers, videos and websites are accurate, professional, attractive and timely. To the extent possible, style consistent. Find out the policy related to using the official logo of your museum or science center. Having a logo for your program and using it, along with the museum's name and logo, on all of your materials can help lend consistency to your marketing. It is usually wise to credit the program's funding sources and your contact information on all marketing materials. Lastly, before launching your marketing materials,

have your supervisor/museum's director's stamp of approval, especially when using science center/museum logos and information.

PROGRAM IMPLEMENTATION RESOURCES

Americans for The Arts: Youth Arts Toolkit
http://www.americansforthearts.org/youtharts/planning/program.asp

http://www.americansforthearts.org/youtharts/evaluation/

University of Kentucky County Extension Service, Department of Agriculture
Program Implementation
http://www.ca.uky.edu/AgPSD/progimp.pdf

Module 3: MAINTAINING PROGRAM QUALITY: EVALUATION

INTRODUCTION

This segment of the Guide to Museum-Based Youth Programs offers some support in the area of evaluation and documentation of a museum-based youth program. Evaluation is not an option regarding youth programs, and in fact, it is an essential element of program design and supports on-going fundraising. Ideally, strategies for evaluating the effectiveness of a youth program should be integrated into the initial design, but in reality most of us think about evaluation after our program has begun. In fact, if you created a logic model as discussed in *Module 2: Program Design: Part C: Goals and Outcomes*, as part of your program planning process, it would be helpful to have it in hand as you think about how your program will be evaluated.

You may know that your program is having a positive impact on its youth participants, but if you cannot prove or document this impact, your program is at an immediate disadvantage. An ongoing structured assessment of your program is critical for you and your museum. It helps you understand what connections are being made, or missed, in your program. In turn it helps you make informed improvements and move closer to obtaining your goals. You need information upon which to base programmatic decisions and to build support for your program inside and outside your institution. Information gained from evaluation enables funders and other community partners to objectively assess the investment of time, people and money given to your program and, ideally, affirm their participation and its value.

In addition, evaluation can be a significant program element that provides youth participants a structured opportunity to reflect upon their experiences, interactions and learning. It can offer them the all-too-rare opportunity to direct and support their education, and most importantly give them a feeling of control and self-esteem by knowing that their opinion is important and valued by adults.

This module offers a brief overview of the key issues related to evaluation. First you must decide who will coordinate the evaluation process. The program staff will always play an essential role in designing the overall evaluation plan, but there needs to be a single entity placed in charged of creating a detailed evaluation plan, designing the measurement tools and gathering the data on which findings and reports will be based. This person can be either inside or outside of your organization. There are both benefits and challenges to either option. To help you, this module lists questions to ask and key factors to look at to decide on whether to select an internal or an external evaluator, largely based on the resources and needs of your institution. If an outside or external evaluator is elected, don’t abdicate all of the responsibilities regarding the program evaluation to them — play an active role from beginning to end.

PART A: TYPES OF EVALUATIONS

No matter who designs and conducts the evaluation, you will have to know what kind of evaluation is most needed at this stage of the program's development.

PLANNING EVALUATION

Planning evaluation assesses the understanding of program goals, objectives, strategies and timelines. It addresses the following types of questions:

- Why was the program developed? What is the problem or need it is attempting to address?
- Who are the stakeholders? Who are the people involved in the program? Who are the people interested in the program who may not be involved? What do the stakeholders want to know?
- What questions are most important to which stakeholders? What questions are secondary in importance? Where do concerns coincide? Where are they in conflict?
- Who are the participants served? What are the activities and strategies that will involve the participants? What is the intervention? How will participants benefit? What are the expected outcomes?
- Where will the program be located (educational level, geographic area)? How many months of the school year or calendar year will the program be in operation? When will the program begin and end? How much, if anything, does it cost the participants? What is the budget for program? What human, material and institutional resources are needed? How much is needed for evaluation? For dissemination?
- What are measurable outcomes? What is the expected impact of the program in the short run? The long run?
- What arrangements have been made for data collection? What are the understandings regarding record keeping, survey response and test participation?

FORMATIVE EVALUATION

Formative evaluation assesses inputs, implementation and ongoing program activities. It assesses whether the program is being conducted as planned and progress made by the participants toward the program goals. It addresses the following types of questions:

- Were the appropriate participants selected and involved in the planned activities? Do the activities and strategies match those described in the plan? If not, are the changes in activities justified and described? Were activities conducted according to the proposed timeline? By appropriate personnel?
- Were the appropriate staff members hired and trained, and are they working in accordance with the proposed plan? Were the appropriate materials and equipment obtained?
- Was a management plan developed and followed?
- Are the participants moving toward the anticipated goals of the program?
- Which of the activities and strategies are aiding the participants in moving toward program goals?

SUMMATIVE EVALUATION

Summative Evaluation assesses program outputs and program successes—the extent to which the completed program has met its goals. It addresses the following types of questions:

- How many people were served? How much were they involved? What products or programs were created? How extensively were the products shared?
- Was the program successful? What components were the most effective? What were the major challenges and how were they resolved?
- Did the program meet the overall goals?
- Did the participants benefit from the program?
- Were the results worth the program's cost?

PART B: WHO WILL DO THE WORK?

In recent years, there are more and more informal learning institutions with full or part-time staff focused on programmatic and audience evaluation and research. Most of us, however, are still forced to either conduct evaluations ourselves or hire evaluation consultants.

BENEFITS OF EXTERNAL EVALUATORS

An independent evaluator, paid or unpaid, is better equipped to offer an impartial examination of the program and participants might be more willing to frankly critique aspects of the program to someone on the outside. Also, formal or professional evaluations require an extensive technical and theoretical background that program staff may not have. Even if program staff know how to design and conduct an evaluation, they might be too close to the program to give an unbiased view. Also, program staff has limited time and the evaluation will not get the type of attention it warrants.

On a more altruistic note, there are a number of independent evaluators who are quite experienced in the museum field. Their evaluations of museum-based programs and the lessons learned from them contribute to the museum field's knowledge base. In fact, evaluators of informal science programs funded by the National Science Foundation are now expected to post their final reports at www.informalscience.org.

It is a good idea to include money for an independent or external evaluator in your program budget and funding proposals, even if it is not a proposal for government funding. Generally, the rule of thumb is to allot approximately 10% of the entire program budget for evaluation, depending on the complexity of the evaluation study. If you do not have funds for an evaluator you might consider looking to colleges and universities in your area to determine whether your program could be the project of a behavioral research or informal education class or internship.

BENEFITS OF IN-HOUSE EVALUATORS

However, if evaluation has to be conducted internally, there can be some positive outcomes. For one, there is no substitute for the insight that in-house staff will bring to the evaluation process. An evaluation instrument may convey statistics (quantitative information), but not the incredible stories (qualitative information) that make the stats relevant. Program staff know the teens and their stories. Also, an in-house evaluation can focus the process, so the results will achieve your ultimate aims: to run a good program and find the resources, political and financial, to keep it going.

KEY FACTORS IN MAKING THE DECISION

To assess whether or not to hire an external evaluator, you should look at four key factors: funder requirements and support, your institutional infrastructure regarding evaluation, your budget and time.

The Funder
Does your funder require you to complete a formal evaluation? Does the funding agency provide an evaluator to all grant recipients or have an evaluator it recommends? What type of data is the funder looking for? Are they interested in statistical, quantitative results or are they looking for more anecdotal, qualitative feedback? Would they be satisfied with simple attendance records, grade reports, samples of students' journal entries and other

information that you could easily compile throughout the duration of your program? Or do they wish to see the kind of results that require some sort of student testing, interviewing and statistical analysis? Also, does your funder allow you to use any of the award monies for evaluation? Communicate with them about their expectations regarding the evaluation. In the long run, it is in your best interest to avoid any confusion at the outset, rather than submit a report that lacks the key information the funder was interested in learning.

Your Science Center or Museum
Does your institution evaluate programs, events, exhibits, etc. on a regular basis, using in-house staff or outside consultants? Do any staff members have experience with regards to evaluation? Is there an opportunity to offer staff professional development to support an evaluation effort? If funds weren't allotted in the program budget for evaluation, is your institution willing to support an evaluation of the program, through the general operating budget? Does the museum staff know any reputable evaluators? Does the institution have any partners like a university department or advisor that can offer assistance toward an evaluation?

Your Budget
Will your institution or your program be able to fund the evaluation? How much do you have to spend? Will funds you have for evaluation cover all aspects of it, including the dissemination of the findings? Are there any funds to purchase documentation and evaluation software that will help you chart and report findings?

Time
Is there anyone—volunteers, interns or staff members—who can help conduct the evaluation if you choose to do it on your own? Does program staff have time to conduct the evaluation? Is the youth program the only long-term project you are currently working on? Do you have someone who can devote a set number of hours per week to work on an evaluation? Who will be responsible for analysis and summation of findings?

PART C: FINDING A PROFESSIONAL EVALUATOR

RELIABLE RESOURCES

If you conclude that you need and can afford a professional evaluator, you have several options. You can:

- Ask colleagues at other museums or science centers, youth serving organizations and even your funder(s), for recommendations
- Post a query on ASTC ISEN (http://www.astc.org/profdev/listserv.htm), an email discussion list linking more than a thousand informal science professionals
- Check the local universities and colleges for graduate students who might be interested in working on an evaluation project for experience
- Consult with local, regional, and professional organizations and journals
- Look at resources available online

Wonderful resources exist online that will lead you directly to lists of qualified evaluators. Here are a few key sites:

Association of Science and Technology Centers (ASTC):
As this handbook attests, ASTC "encourages excellence and innovation in informal science learning by serving and linking its members worldwide and advancing their common goals." Through a variety of resources, ASTC disseminates best practices in the science center field. Articles by researchers and evaluators can often be found on its website and in its bimonthly news journal. http://www.astc.org/resource/visitors

Informal Science:
The purpose of www.informalscience.org is to promote and advance the field of informal learning in science and other domains. This site is a place to share knowledge and support a community of learners to inform informal science learning standards and practices. It is being developed by the University of Pittsburgh's Center for Learning in Out of School Environments (UPCLOSE) at the Learning Research and Development Center.

Committee on Audience Research and Evaluation (CARE)
A standing professional committee of the American Association of Museums, CARE provides a forum for museum professionals who believe that understanding the visitor is an essential part of museum planning and operation and disseminates information about systematic research and evaluation pertaining to museum audiences. It is also a good a source for names of evaluators. http://www.care-aam.org/Visitor+Studies+101/default.aspx

Visitor Studies Association (VSA)
VSA provides a forum for exchange of information in the field of visitor studies, including organizing an annual conference. http://www.visitorstudies.org/

American Association of Museums' Marketplace
Museum Marketplace Online™ (MMO) is an online directory of companies, organizations and consultants serving the museum industry. The companies listed represent all areas of the museum industry from exhibit design to educational services and career development. http://www.museummarketplace.com/ (Note: Type "evaluation" in the SEARCH box).

MAKING A SELECTION

What type of evaluation is needed?

Once you have identified potential candidates to coordinate and implement the evaluation, write a brief outline of your evaluation needs based on goals and objectives outlined in the program proposal, your preliminary conversations with the funder and any thoughts you have regarding what might work best. At the very least, you should decide on what type of evaluation you would like done: planning, formative or summative.

Selecting an evaluator

Your evaluation plan may involve one or all three types of evaluation, but it is important to have a sense of the scope of the effort before you begin talking with potential evaluators. Your program's logic model or a solid, even if brief, outline of your evaluation needs or plans will serve two purposes: to help guide your conversation with potential candidates and act as a rough draft of the contract that you will negotiate with the selected candidate. If you introduce your program's logic mode in discussions with the candidates, expect the one hired as evaluator to create alignment between the evaluation's purpose and process and the logic model.

Once you have your outline, arrange interviews with your top candidates. During the interview make certain you discuss the following:

- Formal training and degrees
- Past experience with evaluation in informal learning institutions (particularly museums and science centers) and youth programs
- References you can contact to find out if he or she is easy to work with, punctual when submitting reports and capable of delivering quality work
- Samples of their work—ask for copies of evaluations or reports they have written and/or published

You should try to interview at least three candidates. The most important purpose of the interview is to decide whether or not you feel comfortable asking the candidate questions about his or her role and aspects of the evaluation process. The terminology connected to evaluation can feel foreign at times, so select someone that can make everything easily comprehensible. If you cannot understand what they are saying or you don't think he or she is listening—keep looking.

Once you select an evaluator, write a contract for their services. According to Davis and Humphreys (1983), ideally, a contract should include:

- Purpose of the evaluation
- Questions to be addressed in the report
- Evaluation plan developed by the evaluator
- Audiences for the report
- Format of the report
- Details on distributing the report
- Comments addressing the authorship issue
- Responsibilities of the client
- Responsibilities of the evaluator
- Timeline (be sure to include regular check-ins with each other)
- Budget
- Specific procedures for resolving grievances

- Decisions about rights and ownership issues with regard to videos, photos, tape recordings, DVDs or web material

Make sure a staff members, advisors or trustees with legal acumen and experience scrutinize your contract before you and the evaluator sign it. Once it is signed by all parties, you are ready to set your evaluation in motion!

PART D: IN-HOUSE EVALUATION - DOING IT YOURSELF

BASELINE DATA

Baseline data are the records, documents and other materials related to your program can be useful sources of information, not only for you and your organization, but also for others who need to understand how your program functions and who you serve. Some of this information may be required by a funder or may help an evaluator determine the impact of your program. There may be times when you will find that your own examination of the data from these records will help build a strong case for seeking modification of the program or the adjustment of resources allocated to it.

Be sure to collect basic information on each participant including: name, age, gender, race, grade, school, address and phone number, an emergency contact person, and several pieces of information that would help you trace a participant after they have left the program (i.e., a guidance counselor, a student identification number, contact information for a community organization or church they attend and an extended family member). This information is not only immediately helpful, but also makes possible a retrospective study or a more detailed evaluation if and when you have the funding. A school identification number may be the most reliable way to find program alumni. Keep accurate program attendance records. Also, keep records of non-participating applicants in case you want to form a control group for a future study.

PROGRAM DOCUMENTATION MATERIALS

Important Note: Access to information collected from your program participants should be restricted to program staff, unless parental permission has been granted, in writing. for other purposes. In working with various data collection strategies, the identity of the respondents must remain confidential.

Program Documentation Checklist

Documentation Includes the Following Types of Materials	**Current Status**			
	In Files	**Will Collect**	**Elsewhere in Org.**	**N/A**
Official Program Records				
- Initial Proposal for Funding				
- Recruitment/Registration Materials				
- Parental Consent & Photo Release Forms				
- Participants' Attendance Records				
- Enrollment Patterns				
- Copies of Participants' Report Cards				
- Program-related Correspondence				
- Annual Reports to Funders				
Program Materials				
- Orientation and Training Materials				
- Lesson Plans				
- Specific Curriculum or Activity-Related Materials				
- Materials Distributed to Participants, Parents, Advisors, Staff				
- Work Schedules & Materials Used to Access Participants' Progress				
- Samples of Participants' Work-Journals, Portfolios, Projects, Etc.				
- Participants' Feedback on Program				
- Parent Feedback				
Internal Documents				
- Memos				
- Meeting Minutes				
- Internal Program Reports				
- Bills & Invoices				
- Purchase Orders				
- Travel Requests				
Media-Related Materials				
- Newspaper Articles				
- Magazine Articles				
- Press Releases				
- Photographs				
- Videos, CDs, and DVDs				

PART E: DEVELOPING YOUR EVALUATION PLAN

After you decide on what type of evaluation best fits your program (planning, formative or summative), begin developing your evaluation plan. Your program's logic module will be an indispensable tool in understanding how to evaluate and what information you will need. The evaluation plan will consist of five essential steps which are discussed in the following section:

Step 1: Identify Type of Information Needed and Formulate Good Evaluation Questions
Step 2: Identify Participant Sample
Step 3: Decide on Your Tools
Step 4: Collect and Analyze Data
Step 5: Prepare the Report

In the resources listed at the end of this section, you will find several excellent, detailed online resources for *Do It Yourself* evaluators.

STEP 1: IDENTIFY TYPE OF INFORMATION YOU NEED OR WANT TO COLLECT

Largely, there are two types of data that can be captured through program evaluation: qualitative and quantitative. Qualitative evaluation acquires data through interviews, observations, journals, conversations and focuses on deep description of program efforts and outcomes. It typically generates themes or categories that emerge through data analysis.

Quantitative data looks at measurable program goals through numerical data (i.e., higher science grades in school, number of youth who complete the program and number of hours youth spent in the program). At times qualitative data is coded and turned into quantitative data for analysis. For example, assessments of attitudes and self esteem can be coded as categories and compared before and after a program.

The goals and objectives outlined in your project proposal provide a good starting point for identifying the type of data you need to collect and developing an evaluation plan. Make sure the goals of your program are clearly articulated and that you have measurable objectives. The goal is your ultimate destination and it guides not only what you do in your program, but also visually shows your program results to you and others within a formal document. Objectives (sometimes referred to as outcomes for evaluation purposes) are the means in which you plan to achieve your goals. Setting measurable objectives will help you design a strong program, build support and assess your success.

If your goals and objectives are too vaguely articulated (and somehow, you got funded anyway) it will be hard to decipher what your program, if anything, is accomplishing. It's important to have a sense of the original goals, but these goals should evolve with the program and its participants over time. Goals and objectives can be created or revised at anytime, but keep in mind the original agreement made with the funder. Most funders expect to be informed of any major changes in the programs that they support. Always look beyond the original goals and objectives to ensure you are able to identify potentially more important aspects of the program as well. If you need help creating goals and objectives, refer to the section: Goals and Outcomes in the Program Design Module 2.

A clear sense of your program's objectives and expected outcomes will enable you to develop strong evaluation questions. The evaluation questions that you develop will determine what kinds of information you will need to collect.

Formulate Good Evaluation Questions

Many believe that evaluation is a process of answering questions. To this end, you will need to develop a comprehensive set of questions, relating to the quality and merits of your program. The following are some of the numerous sources that should consider when developing questions.

- Original Program Proposal: If you haven't read it, read it thoroughly. The goals and objectives outlined should provide a good starting point for developing questions.
- Program Documentation: Search through your records, training materials, student journal entries, notes from parents, etc.
- Conversations with the intended audience(s) of the completed evaluation: Ask funding representatives what outcomes they are interested in.
- Previous Evaluations: Review any and all evaluations implemented on the program or similar programs at your institution.
- Observations: Take the time to watch what is going on in the program. You don't necessarily have to identify problems, but look for areas that can be 'demystified' through a focused study and description.
- Conversations Among Program Staff: Since these are the people who are on the frontlines, they will have a very useful and insightful perspective on areas in the program that could use some level of examination and/or improvement.
- Remarks Expressed By Youth Participants: Either through formal or informal means, program staff should always be listening to the youth participants in their program
- Similar programs in the Field or National Initiatives.

When writing evaluation questions, make sure you

- Write questions that will provide useful information about the program
- Write questions that facilitate decision making
- Write questions so that they will reveal immediate outcomes
- Write questions that you, as evaluator, have time to answer
- Write questions that you can afford to answer
- Write questions using specific language, to have a reasonable chance of knowing whether you have answered them. For instance, "Do participants demonstrate an increased understanding of scientific concept?" rather than "Is this an effective program?"

An example of a measurable objective and related evaluation questions might be:

OUTCOME: Youth participants identify the science museum's program with engaging personal experiences and growth.

- Does the program retain the active involvement of its participants beyond their initial year?
- Do the participants find program's activities to be interesting and engaging?
- Do participants feel that the program makes learning science more fun and exciting?
- Would participants recommend the program to other youth?
- Can the youth participants identify a negative or detractor of the program? Would that detractor prevent them from continuing the program?

- Have participants had any experiences in the program that have later been helpful in school?
- To what extent do participants feel that they have gained new skills while in the program?
- Can participants identify ways in which the program has provided them with opportunities for increased responsibilities?

STEP 2: IDENTIFY WHICH PARTICIPANTS WILL MAKE UP YOUR SAMPLE.

Once you have your questions, you must decide on how to use them. Identifying your sample is a key part of this process. The sample is a group of people selected to respond to or participate in the evaluative process. Depending on the information you are seeking, the sample can be randomly selected or chosen by certain characteristics. Either way, at some point in the future, you should plan to describe the selection process for you readers. For your purposes you might want to question all current participants, returning participants, participants in particular grade levels, program drop-outs, parents, community partners or perhaps other museum staff. It all depends on your evaluation questions.

STEP 3: DECIDE ON YOUR MEASUREMENT TOOLS

Museum-based youth programs have used a variety of techniques to collect information indicating how well their programs are doing or how effective specific, vital components of their programs are. For those considering program evaluation on a larger or more formal scale, the National Science Foundation has identified sources and techniques for collecting evaluation information as well as the advantages and drawbacks of several data collection evaluation procedures. http://www.nsf.gov/pubs/2002/nsf02057/nsf02057_1.pdf

Program components like reflection sessions, daily debriefings, journals, and portfolios have worked well not only for participant feedback, but also as data collecting tools in museum-based-youth programs. Some program leaders have incorporated interview protocols and questionnaires into their evaluation activities.

Participant Feedback Tools: Reflection Sessions
Make a conscious effort to establish and maintain a climate of reflection. Encourage participants, staff, your advisory board and others to join with you in observing, reflecting upon and assessing your youth

TIPS For Creating Measurement Tools:

- Use language that is appropriate to youth.
- Avoid leading questions and injecting your own bias. Objectivity is sometimes difficult to maintain when you're deeply involved in the process.
- Always ask an objective third party to complete the questionnaire or listen to your interview questions before you begin piloting or using them with young people.
- Make sure questions are sufficiently open-ended, meaning they should require a response.
- Keep the questions as short as possible. Longer sentences tend to confuse or, even worse, bore the person trying to answer the question.
- Ask questions that relate to the evaluation question you hope to answer—don't stray.
- Use a combination of measurement tools that will allow you to gather enough qualitative and quantitative data to give a well-rounded picture of who are the participants in the program, what they do in the program and what impact the program has had on them.

program on an on-going basis. Participant input throughout the program is more important than you think. When participants are part of the program planning and evaluation process, they take more ownership of the program and their contributions.

Feedback or debriefing is especially important when young people are working for your museum. Set time aside at the end of every day to find out what happened that day, to tie up any loose ends and to offer advice for improving performance. The debriefing period also gives you the opportunity to see if your program goals and objectives are being met. Encourage comments by saying, "Your input is very helpful; this is a new program and we are always looking for ways to make it better; help us do the best possible job; give us your feedback." Record their observations for use in long-term planning as well as in making immediate program decisions.

Use evaluation to bring about closure for each participant's experience and to help them see what they are learning. What your participants take away from their experiences, either daily or in sum, will be enhanced by helping them to reflect on and articulate what they are learning. In effect, you are teaching young people a critical life skill — how to be reflective — by involving them in evaluating the program.

Participant Feedback Tools: Comment Cards
This tool, used in EQUALS workshops at Lawrence Hall of Science, collects immediate feedback from participants. Have 3x5 index cards easily accessible throughout the session. At the beginning of each session, encourage participants to use the cards throughout the session, writing down comments or questions related to any aspect of the day's activities. They do not have to sign their names unless they want you to speak with them privately about the matter. At the end of the session their cards should be deposited in a collection box so that the session leader can review and respond, as appropriate, at the beginning of the group's next session. This is a flexible method for uncovering any issues among participants.

Participant Feedback Tools: Questionnaires
A questionnaire is a set of written questions designed to collect personal data, opinions, reactions to experiences and sometimes recommendations. Questionnaires can be in an open-ended format, giving respondents full control over their responses, or they can be closed-ended, which forces respondents to reply "yes" or "no", or to select from responses that you provide.

Example of Open-Ended Questions:

- If we offer this program again, what suggestions would you have for us?
- What skills do you have now that you did not do before you joined this program?
- What has been your greatest challenge in this program?

TIP:
Some programs have used pre- and post-program questionnaires in an attempt to measure changes in attitudes and knowledge of youth program participants.

Example of Closed-Ended Question:

- Are you happy you participated in the program?
- Would you encourage other young people to join this program?

Example of Multiple Choice Question Format:

Did any of the following make your participation in the program more difficult?

__ Registration Process
__ Transportation
__ Fellow Participants
__ Program Staff
__ Format of Program
__ Room Environment
__ Other Museum Staff
__ Room Set-Up
__ Time of Program

If yes, check all that apply. Circle the choice that was the greatest problem for you.

Example of Scale Question Format: (Scale questions can provide insight into participants' opinions and attitudes)

Please check the column that best describes your response to each question	**Always 5**	**Usually 4**	**Sometimes 3**	**Rarely 2**	**Never 1**
1. In this museum, I find exhibits and/or activities that really interest me.					
2. This program helps me understand science better.					
3. I am comfortable talking with museum visitors.					
4. When I need help, someone here at the museum is willing to help me.					
5. The work I do here helps the museum.					
6. I am learning information here that can help me in school.					
7. I am learning skills that can help me in future jobs.					

Participant Feedback Tools: Interviews
Whether face–to-face or by telephone, and whether with a group or individual, interviews require considerable prior planning. While the interview format can be structured, semi-structured or unstructured, the interviewer must know what information he or she is seeking, have developed questions and must be prepared to probe responses when necessary. Interviews may be a more effective source of information if conducted by a neutral third party rather than by program staff. Regardless of who conducts the interviews, transcribing the information may be a challenge. Remember the rules of confidentially!

Participant Feedback Tools: Journals
Journals are excellent devices for collecting qualitative information from teens. Journals enable you to assess gradual changes in students' attitudes and skills. Unlike academic writing (such as essays, reports, etc.), journal writing allows the writer to focus almost exclusively on content. In other words, rhetorical devices, punctuation and other elements that render a written piece formal are unimportant. The purpose of a journal is not to improve writing, but rather to give the young person the opportunity to use writing as a reflection and communication device. However, some program leaders who regularly use journal writing, have noticed that their young people's writing skills seem to improve over time. By having students write in journals regularly and frequently, it can provide you with indispensable and highly useful information about your youth program and its participants.

The Miami Museum of Science asked its YouthALIVE! participants to respond to four questions, in addition to any comments they want to supply. **What did I learn today? What did I like the most? What did I like the least? How is this new learning useful to me?**

Staff looked for changes on several fronts: proficiency in technology use and content knowledge in science, math, social science and/or geography. In addition, participants kept journals in electronic format, to support the program's goal of increasing technological literacy while encouraging the development of communication skills, particularly writing.

Participant Feedback Tools: Portfolios
While encouraging a young person to be self-reflective, organized and to think critically, portfolios can provide program staff with important information about what aspects of the program are contributing to the young person's growth, from her or his perspective. Portfolios, through visual images and artifacts, answer the following questions:

- What am I good at?
- What do I like to do?
- What can I use to show others that I have these skills and interests?
- How can I present this information in the most believable way?

Because a portfolio is simply a young person's collection of samples of his or her accomplishments, the process of assembling and updating a portfolio can be particularly engaging for adolescents. Collecting and organizing representations of accomplishments in a single medium — a book, a file folder, a poster, a box, etc. — is one way of demonstrating what the teens have learned and experienced as a member of the museum's youth program. Young people should be aware of the different kinds of portfolios and their purposes, particularly the various models for employability or professional portfolios.

STEP 4: COLLECT AND ANALYZE DATA.

Timeline

Set a timeline for your data collection that allows for a pilot test of your instrument and analysis of that data. Though some data may already exist in your files, you may need to organize the information to be easily accessible to all. Think about the program's yearly calendar, participant recruitment, turnover and attrition when designing your evaluation plan. You may have a great deal of flux among participants, especially those from low-income communities where some families have to move frequently. One science center begins each class by asking whether anyone has moved since the last session, so that addresses are always current. Have a plan that looks at both the overall impact on the participants that stay and captures the reasons that others leave.

Quantitative Data

As discussed earlier, you will be collecting two types of data: numerical information and narrative information. Numerical information results from evaluation questions with quantifiable responses. This will involve calculations of responses and gathering statistical documentation from program files to answer evaluation questions. For example:

Question: Is the program able to sustain participants' interest and involvement?
Answer: Yes. The average length of participation by 14-year-old youth was 2.6 years. [Data gathered from attendance and participation records.]

Question: Does the participation in the program help young people with their school work?
Answer: Seventy-five percent (75%) of the participants in grades seven and eight indicated that within the past three months at school they had used something that they had learned at the museum. [Surmised from questionnaire questions and possibly report cards.]

Qualitative Data

Narrative data, on the other hand, is not based on numbers, but is richer in details collected from individual interviews, group interviews and focus group sessions, journal entries, and open-ended questionnaires. While statistics are utilized to analyze numerical information, content analysis is the method used to analyze narrative data.

Example of content analysis for narrative analysis
Question: Would you encourage a friend to join this youth program? Why or Why not?

Response	**Category**	**#of Comments**	**Sample Quotes** (Total # participants = 24; Total # reasons cited = 43)
Yes	Enjoyment	16	"We have fun helping little kids do science." "It feels good to be here." "It's cool, fun program."
	The Job	15	"It's a real job, with pay." "We get to practice skills that will help us in other jobs."
	Learning	4	"You learn a lot about science, by doing hands-on science."
	Relationships	2	"The other kids are cool and we help each other out." "Out program leader is great!"
No	Time	2	"We have to be here too early on Saturday mornings." "You have to sign up for the whole school year."
	Interest	2	"My friends are more interested in sports." "Nobody else really wants to spend their free time doing science stuff."
	Location	1	"None of my friends live around here."

With narrative information, you must use your interpretations of the data to surmise meaning. Make note of areas where you see consistency within the data and look for patterns. Equally important is to look for interpretations that appear inconsistent or discrepant (e.g., 90 percent of the 15-year-old participants seem to enjoy the volunteer program, but only 30 percent choose to return for a second year).

Please note that by coding comments into a number, you actually move into the realm of quantitative analysis. This is fine, but it is a shift from a strictly qualitative evaluation. Qualitative data is also the basis for case studies, which provides a deep and insightful description of a program. When possible, plan to incorporate both qualitative and quantitative measurement tools.

STEP 5: PREPARE THE REPORT

You have collected all the data for your evaluation, but now what? Before you begin to summarize your findings, think about who will be using the information, internally and externally, and how. There are many entities with interests in your program and those who you will want to share your findings to encourage interest. For instance, the information can be used for:

- Presentations to institutional leadership (the CEO, senior management and Board), for their edification and ongoing support
- Public relations (via press releases, media kits, newspaper, trade magazine and professional journal articles)
- Presentations to the program's advisory board, the museum or science center staff and volunteers

- Presentations to professional organizations, other educators and colleagues
- Presentations to community partners and other local groups
- Inclusion in funding reports to current funders
- Inclusion in funding proposals for potential funders
- Inclusion in annual reports on the program or museum/science center

Many of these are stakeholders who have supported the program in the past; and you expect them to make decisions about future support and involvement. Even so, they are not your most important audience for your findings. You are actually the most important audience for the information learned. The data collected through the evaluation process will undoubtedly help you improve your program and help program staff that comes after you understand the program's strengths and challenges. In any case, your report must be easy to read, credible and timely, while painting the overall picture.

An evaluation report, whether it takes the form of a memo to program staff or a formal document for a larger audience, should be organized clearly. It should begin with a brief statement of the purpose of the study. It then should offer some background on the program followed by a description of the evaluation process and findings. Your discussion of the results will be more meaningful if it is directly related to your original evaluation question(s). It is best to organize your findings using the overarching question(s) that you initially sought to answer.

This is the place to fully present the findings and your interpretation of them. Return to each evaluation question and look at the data you collected that corresponds to that evaluation question(s). For instance, if your question was, Is the program able to sustain participants' interest and involvement? and your measurement tool was a questionnaire, you might have four questions on the questionnaire that relate to this particular evaluation question. Or if you are using journals, your findings would be based journal entries related to participants' interest and involvement in program. In light of your question, what do the findings mean?

Your writing should be as objective as possible, without emotion or value judgments. Presentation of this information can take many forms including narration, tables, graphs, charts, etc. Photos that reflect one or more of your findings help the reader understand or visualize what you are intending. However, keep the analysis of the information simple. Do not use any statistical information that you don't fully understand. Samples of the measurement instruments used should also be included in the report. Bring closure to the report with your conclusions and recommendations. Also remember, when introducing the evaluation report orally to the busiest individuals in your targeted audiences, an executive summary, PowerPoint presentation and/or handout will be appreciated.

Finally, remember that your evaluation process should serve as an ongoing source of information about the extent to which the program is doing what it set out to do. It may also enable you to discover any unexpected outcomes; and it can help you determine where you need to make 'course corrections'. Findings emerging from the evaluation process not only inform your own decisions, as program leader, but also may factor into your museum's discussions about the program. Evaluation is a critical factor in program sustainability.

RESOURCES

Planning & Evaluation Resource Center (PERC)
PERC is a project of the Innovation Center for Community and Youth Development and the Institute for Applied Research in Youth Development at Tufts University. This website is designed for people who want to do self-evaluations of their youth development programs or who want a better understanding of evaluation.
http://www.evaluationtools.org/

Online Evaluation Resource Library
Comprehensive resource, funded by the National Science Foundation, to assist professionals in designing, conducting or reviewing project/program evaluations.
http://oerl.sri.com

Taking Stock: A Practical Guide to Evaluating Your Own Programs
Horizon Research, Inc.
This is a user-friendly, concise text that walks you through developing an evaluation.
http://www.horizon-research.com/reports/1997/taking_stock.php

National Science Foundation (NSF)
NSF has many publications that offer insight with regards to evaluation. Some suggested titles include: Footprints: Strategies For Non-Traditional Program Evaluation, User-Friendly Handbook For Mixed Method Evaluations and The 2002 User-Friendly Handbook For Project Evaluation. Via the NSF's web-site you can access PDF versions of these publications.
http://www.nsf.gov/publications/ods/

American Evaluation Association
Website on evaluation "devoted to the application and exploration of evaluation in all its forms." Includes links for local organizations.
http://www.eval.org/

Basic Guide to Program Evaluation by Carter McNamara
http://www.managementhelp.org/evaluatn/fnl_eval.htm

Portfolios developed by NCREL
http://www.ncrel.org/sdrs/areas/issues/students/earlycld/ea5l143.htm

Utilizing Student Portfolios as an Assessment Tool by Emma McDonald
http://www.education-world.com/a_curr/columnists/mcdonald/mcdonald025.shtml

TERMS TO KNOW

Accuracy: The extent to which an evaluation is truthful or valid in what it says about a program, project or material.

Achievement: A manifested performance determined by some type of assessment or testing.

Affective: The domain of emotions, feelings and attitudes.

Assessment: Often used as a synonym for evaluation. The term is sometimes recommended for restriction to processes that are focused on quantitative and/or testing approaches.

Attitude: A person's mental set toward another person, thing or state.

Attrition: The drop out rate. Attrition is an important factor in program development. Low attrition can be a strong indication of program effectiveness.

Background: The contextual information that describes the reasons for the project, goals, objectives and stakeholders' information needs.

Baseline: Facts about the condition or performance of subjects prior to treatment or intervention.

Behavioral objectives: Specifically stated terms of attainment to be checked by observation or test/measurement.

Bias: A consistent alignment with one point of view.

Case Study: An intensive, detailed description and analysis of a single project, program or instructional material in the context of its environment.

Cognitive: The domain of knowledge.

Conclusions (of an evaluation): Final judgments and recommendations.

Cost-effectiveness: This analysis determines what a program or procedure costs against what it does (effectiveness). Is this product or program worth its costs?

Dissemination: The process of communicating information to specific audiences for the purpose of extending knowledge and, in some cases, with a view to modifying policies and practices.

Executive summary: A non-technical summary statement designed to provide a quick overview of the full-length report on which it is based.

External evaluation: Evaluation conducted by an evaluator from outside the organization within which the object of the study is housed.

Evaluation: A process used to assess the effectiveness of a program by comparing results with program goals.

External (or Outside) *Evaluator:* An evaluation expert or firm, not on the museum staff, hired to conduct the evaluation of a particular project. Outside evaluators are used because they have no vested interest in program outcomes and are therefore neutral and impartial.

Feasibility: The extent to which an evaluation is appropriate for implementation in practical settings.

Focus Group: An ad-hoc group of people representative of a target audience assembled for a short time period to help an evaluator assess prior knowledge, interest or to get reactions to a projected program.

Formative Evaluation: Evaluation designed and used to improve an intervention, especially when it is still being developed. A process used during program development to assess effectiveness and adjust the program/exhibition accordingly. Examples of formative evaluation results are: label copy that is too hard to understand, youth programs that mix incompatible age groups, etc.

Front-End Evaluation: A process used early in exhibition and program development to determine what a particular audience thinks, knows and wonders about the subject to be presented. Front-end evaluation helps the program designer select content and approaches for a particular audience.

Goal: A desired result or condition for a program. Goals describe major results. Goals are general, long term and usually non-measurable, e.g. nurture and sustain youth's interest in science, assure that adult caretakers and family members of youth participants feel comfortable at the museum and have access to museum resources and museum staff, etc.

Impact evaluation: An evaluation focused on outcomes or pay-off.

Informed consent: Agreement by the participants in an evaluation of the use of their names and/or confidential information supplied by them in specific ways, for stated purposes and in light of possible consequences prior to the collection and/or release of this information in the evaluation report.

Instrument: An assessment device (test, questionnaire, protocol, etc.) adopted, adapted or constructed for the purpose of the evaluation.

Internal evaluator: Internal evaluations are those done by project staff, even it they are special evaluation staff, that is, external to the production/writing/teaching/service part of the project.

Longitudinal study: An investigation or study in which a particular individual or group of individuals is followed over a substantial period of time to discover changes due to the influence of the treatment, or maturation or environment.

Longitudinal Data: Information collected over a long time period, well beyond participation in a program. Longitudinal data is usually effective impact data because it shows the long-term effects of participation in the program.

Objective: A specific description of an intended outcome.

Observation: The process of direct sensory inspection involving trained observers.

Outcome: Post-treatment or post-intervention effects.

Pilot Projects: Small, shorter versions of a larger program used to test program ideas and procedures.

Planning Evaluation: Evaluation planning is necessary before a program begins, both to get baseline data and to evaluate the program plan, at least for evaluability. Planning avoids designing a program that cannot be evaluated.

Population: All persons in a particular group.

Pre/Post Testing: A quantifiable evaluation technique where participants are tested before and after an experience to determine measurable changes as a result of the experience. For instance, testing science vocabulary before and after a workshop and comparing results.

Program: The general effort that marshals staff and projects toward defined and funded goals.

Qualitative evaluation: The part of the evaluation that is primarily descriptive and interpretative, and may or may not lend itself to quantitative treatment. Evaluation of non-measurable program goals, e.g. attitude, self-esteem and morale.

Quantitative evaluation: An approach involving the use of numerical measurement and data analysis based on statistical methods. Evaluation of measurable program goals, e.g. higher science grades in school, number of youth who complete the program.

Random sampling: Drawing a number of items of any sort from a larger group or population so that every individual item has a specified probability of being chosen.

Recommendations: Suggestions for specific appropriate actions based upon analytic approaches to the program components.

Replication: Repeating an intervention or evaluation with all essentials unchanged. Replications are often difficult to evaluate because of changes in design or execution.

Research: The general field of disciplined investigation.

Self-Administered Instrument: A questionnaire or report completed by a study participant without the assistance of an interviewer.

Self-Report Instrument: A device in which persons make and report judgments about the functioning of their project, program or instructional material.

Primary Source: National Science Foundation's The 2002 User-Friendly Handbook For Project Evaluation, Chapter 7. http://www.nsf.gov/pubs/2002/nsf02057/nsf02057_1.pdf

Stakeholder: A program's stakeholder is one who has credibility, power or other capital invested in the project, and thus can be held to be some degree at risk with it.

Statistic: A summary number that is typically used to described a characteristic of a sample.

Strategy: A systematic plan of action to research predefined goals.

Summary: A short restatement of the main points of a report.

Summative Evaluation: Evaluation designed to present conclusions about the merit or worth of an intervention and recommendations about whether it should be retained, altered or eliminated. The final evaluation of a program, after all changes have been made. Summative evaluation is usually a final report assessing program effectiveness in relation to program goals.

Surveys: Data collection techniques used by evaluators where a particular group is asked a series of questions designed to elicit pre-determined information. Surveys can be written or oral. For example, written or oral questions for museum visitors to determine where they live, why they came to the museum, their ages, sex, educational level.

Unanticipated Outcomes: A result of a program or interview that was unexpected. Often used as a synonym for side effects, but only a loose equivalent.

BIBLIOGRAPHY

Davis, Barbara Gross, and Humphries, Sheila. EvaluationCounts: A Guide to Evaluating Math & Science Programs for Women. (1983)

Fulwiler, Toby, ed. The Journal Book. Boynton Cook Publishers, 1987.

Holly, Mary Louise (1989). Writing to Grow: Keeping a Professional Journal. Heineman Educational Books.

Slavin, Robert E. Educational Psychology: Theory into Practice. Englewood Cliffs, NJ: Prentice Hall, 1986.

Staton, Jana. "The Power of Responding in Dialogue Journals." In The Journal Book, ed. Toby Fulwiler, Boynton Cook Publishers, 1987.

Stevens, Floraline; Lawrenz, Frances; Sharp, Laure; and Frechtling, Joy - eds. User-Friendly Handbook for Project Evaluation: Science, Mathematics, Engineering and Technology Education. Washington, D.C.: National Science Foundation, 1993.

Taylor, Orlando. Cross-Cultural Communication: An Essential Dimension of Effective Education. Washington, D.C.: The Mid-Atlantic Equity Center School of Education, The American University, 1990.

Module 4: SUSTAINING YOUR PROGRAM: FUNDRAISING

This module was developed from a manuscript written for YouthALIVE! initiative by Peggy Ruth Cole, creator of the Science Career Ladder at the New York Hall of Science and former Director of Program Planning and Development.

INTRODUCTION TO THE WORLD OF FUNDRAISING

This chapter is designed to help you raise money for your youth programs from foundations, not from individuals. It assumes you have little to no fundraising experience and that you need a good understanding of the basics in order to work with your development department or to begin fundraising on your own. Fundraising procedures and approaches differ slightly at every institution And some institutions include program staff in fundraising efforts while others do not.

In small museums, program staff may also raise program funds. Whereas in larger museums, there are usually well staffed development departments whose job is to identify and cultivate funders, write proposals and secure funding. Youth programs may not be a priority for their efforts. Funding priorities are usually set by the director and senior staff and, in some museums, the trustees also have a say.

Think it is impossible to raise money during severe downturns in the economy? Don't give up! Consider the advice from Jim Donovan, President/CEO of Donovan Management, Inc. and a blogger on philanthropic issues of non-profit organizations:

"The best time to raise money is when you need it. This isn't a fundraising issue, it's a communications challenge. You must convince your constituency that your mission is more relevant NOW than ever before. Remind them of the consequences of *not* meeting your mission. Who will suffer, go without, be worse off than they are today?

http://fundraisingcorner.blogspot.com/2008/08/overcoming-objections-to-fund-raising.html

PART A: KEY STAKEHOLDERS IN FUNDRAISING

IN-HOUSE COLLABORATIONS

Regardless of the size of the museum, successful fundraising is the result of the collaborative efforts of key staff members. Since they provide the leadership for establishing and sustaining the program they are, in effect, the *leadership team.* A typical leadership team would include:

Role:	**Function:**
Museum Director	Speaks for the program with funders, trustees and the general public
Development Director	Guides the fundraising process
Public Relations/Marketing Director	Tells the program's story to the media using publications; arranges program-related press conferences and public events showcasing museum activities
Youth Program Director	Provides direct access to the program and its young people, knows the participants, program direction and day-to-day progress

If your museum has a development office, establish a good working relationship with the development staff. You are the person who best understands your youth program and you will be held accountable if promises are made to a funder which can't be delivered.

TIPS:

Think of creative ways to involve leadership team members with your program. For example:

- Arrange for program participants to interview team members
- Invite your director to give the welcome at parents' events and/or orientation sessions

Here are some simple strategies for making this relationship work:

- Get to know development staff so you are comfortable with one another. Set up informal lunches periodically. Keep in touch and stop by to say hello.

- Involve development staff with your programs so they feel knowledgeable, connected and committed. Invite them to program planning meetings, program events and request their feedback.

- Arrange meetings with your director, team members and youth participants for funders and other interested parties

- Create informal opportunities for program stakeholders (teachers, family members, religious leaders) to get together with participants and team members, e.g. pot luck suppers, behind-the-scenes youth-led tours

- Make yourself available to development staff and always provide them with information they request as quickly and graciously as possible. Development staff is often under pressure and may need last minute information to meet proposal deadlines.

- Be sure to thank development staff for their help with proposals, whether or not you get funded. A short thank-you note goes a long way toward establishing good will.

ABOUT THE FUNDERS

Fundraising is a process of establishing relationships that benefit the funder and the fundee. Although funders and fundees share the same goals, they are on different sides of the effort. Funders need program investments and fundees need financial support to accomplish shared goals. Funders are accountable to their trustees for the quality of their investments. Fundees are accountable to funders for the use of their funds.

Your role as a *fund seeker* is to figure out a) if your program goals match the funder's mission, and b) if they do, how to clearly present the match. Think of it this way - You have a terrific youth program that will significantly change the life chances of inner-city youth. A funder has monies earmarked to invest in programs that significantly change the life chances of inner-city youth. You are looking for monies, the funder is looking for programs that will make a difference. A perfect match. Ideally the funder and fundee are a team working to make something they both care about happen.

ACCESS TO NON-TRADITIONAL MUSEUM FUNDING SOURCES

If your program is well designed in addressing one of society's current social or educational priorities, it can give the museum access to previously inaccessible funding sources. Many funders concerned with social change look for unique collaborations among community-based organizations designed to bring the resources of each organization together in the interests of program participants. These collaborations are time-consuming, but they are well worth the staff time required. In Appendix V, you'll find a list of funders of the earliest local YouthALIVE! programs.

WHO GIVES MONEY?

Charitable Trusts
Community Foundations
Corporate Foundations
Government Foundations
Private Foundations
Individuals

WHY DO PEOPLE GIVE MONEY?

In 2006 the Internal Revenue Service received filings from 79,765 private foundations in the United States; and we can assume that these foundations seek to support worthwhile causes. They have monies that are, by law, earmarked for grants and they are required to give that money away. Wealthy individuals, families and corporations form foundations to give away money for any of the following reasons:

- They care passionately about people
- They want to improve the quality of life locally, regionally, and globally
- They want to solve a social problem
- They receive tax advantages
- They want to be perceived as good citizens

The selection of funding focus reflects the concerns of individuals or families. Large private foundations, e.g., Carnegie, Ford, Wallace, C. S. Mott and Kellogg, develop funding goals by researching areas of concern to their trustees, staff and to society. Foundation funding goals change as a function of new social issues or concerns of foundation staff. For example, a funder may support AIDS projects for a few years and then shift its focus to teen pregnancy.

WHO GETS MONEY?

Organizations that:

- Share the same goals as funders
- Do their homework. Know what other efforts are being made locally, regionally, and nationally
- Present a project that has clear goals, is feasible and has well conceived work plans, adequate staff expertise, resources and organizational infrastructures to carry out their plans
- Develop and maintain relationships with funders
- Have strong track records of past success
- Do what they propose to do
- Develop projects with long range impact that can continue after funding ends
- Present realistic budgets with matches from other funders or collaborators
- Have strong internal project support from trustees and directors
- Are knowledgeable about the funder's interests, policies and guidelines and meet the funder's legal requirement for grantees

In short, funders are looking for projects that match their goals and have strong potential for success. Like any other investor, they want to make good investments that yield a return in the form of successful programs.

PART B: FUNDRAISING – HOW IT'S DONE IN YOUR MUSEUM

Fundraising is a team effort involving many different tasks and procedures. Your institution probably differs somewhat from others in terms of staff and board responsibilities.

All fundraising involves the following procedures in the following order:

- Researching potential funders
- Establishing relationships with potential funders
- Presenting the program to potential funders
- Writing proposals or request letters

These procedures help funders understand your organization and its programs as well as help your organization understand the funder. The goals are to engage funders, show them that you are working effectively in areas of mutual concern and to learn the funding priorities and limitations of the funder.

The worksheet, *Who Does What in Your Museum*, can help you determine the fundraising process in your museum. As project director it is likely that you will have to know, and become involved in, some or all of the tasks listed on the worksheet, Depending on the size of your institution, you may be the driving force behind these efforts. As daunting as this may seem, take comfort in the knowledge that many of YouthALIVE! project directors are quite successful, sometimes with and sometimes without direct assistance. You can always call another youth program leader for support and help.

Complete the following worksheet using either names or placing an x in each box to determine how fundraising works at your museum. A discussion of each procedure follows.

WHO DOES WHAT IN YOUR MUSEUM

As you complete this worksheet, you will gain a clearer picture of how fundraising is done in your museum or science center; you will see the key tasks and who carries them out. For museums and science centers that have been successful in sustaining their youth programs, these tasks – or some variation of them – are routinely given serious attention. Depending on your level of responsibility as youth program staff, you will have to know about, or become involved in many of the tasks listed on the next page.

As you place an X or name in each cell on the worksheet, the fundraising process in your organization will become evident.

	Trustees	Director	Dev. Staff	Program Staff	Other
Researching Potential Funders					
Online Research					
Research Print Materials					
Asking Colleagues for Funder Contacts					
Establishing Relationships With Funders					
Calls to Funders					
Letters of Introduction to Funders					
Funder Visits to Museum					
Museum Staff Visits to Funder					
Special Events for Funders					
Meetings With Funders at Professional Conferences					
Presenting Youth Programs to Funders					
Impact Data					
Program Descriptions / Program Profiles					
Photographs					
Program – Related Materials					
Proposal Writing					
Budget Development					
Program Description – Using Funder's Guidelines					
Letters of Commitment					
Evaluation Design					
Advisory Board or Committee					
Museum History					
Professional Input					
Proofreading					
Packaging for Submission					
Maintaining File Copy of Submitted Proposal					

Follow-up Contact With Funder					

PART C: FINDING FUNDERS: RESEARCH AND PROSPECTING

Finding potential funders is detective work. You need to use every resource at your disposal to figure out which funders to approach. Resources include colleagues, trustees, print and on-line materials, attribution plaques in museums, newspaper articles, media information and anything else that leads you to a potential funding source. This section outlines the traditional sources for prospecting; you may also find others that work well for you.

INTRODUCTION TO PROSPECTING

Step 1: Collect publications from museums similar to yours and organizations serving youth (brochures, Annual Reports and newsletters). Complete a list of funders who support these organizations and make copies of the lists. You will use these lists for research purposes.

Step 2: List all the possible categories that describe your program: e.g., youth, education, careers, science, community service, families.

Step 3: Check with your museum's development office and/or director to locate in-house fundraising research tools (publications, Annual Reports, Internet access, past funder files).

Step 4: Locate the Foundation Center nearest to your museum or at www.fdncenter.org. Large, medium and small cities usually have centers, which offer a rich library of resources at no cost on-site.

FOUNDATION CENTERS

Foundation centers can provide you with information on funders nearest to your museum. In addition, ask them to send you a kit of materials and membership information.

Foundation Centers
To locate the nearest Foundation Center contact:

The Foundation Center
79 Fifth Avenue
New York, N.Y. 10003-3076
1-800-424-9836
www.fdncenter.org

If your museum is a member of such an organization they can simply add your name to the access list. Larger foundation centers require access codes. Membership costs vary depending on the services offered.

Most Foundation Centers offer the following services:

- Staff to help with research
- Internet access
- Purchasable funder information on CD ROM
- Telephone consultations
- Printouts and photocopies of requested research
- Annual reports and publications
- Sector publications e.g., Religious, Capital, Endowment, Arts
- Foundation directories
- Foundation IRS information
- Fundraising workshops
- Proposal writing workshops
- Fundraising newsletters, publications, and related resources

TIP: Checking Eligibility and Feasibility

Geographic Limitations: Some funders only fund within their home state, whereas others only fund where they have employees working.

Types of Support: Some funders only give program support while others only give general operating, capital or endowment support.

Match with Funders' Interests: Make sure your youth program actually falls within the funders' program interests. For example, some funders are interested in educating inner-city youth of color, but they are only interested in programs on a national policy level while you are focusing on your community.

Length of Request: Funders will usually indicate whether they fund single- or multi-year projects. Be sure your funding calendar conforms to theirs.

IRS Status: Most funders require

WHAT IS YOUR RESEARCH GOAL?

Your goal is to develop a working list of potential funders that are a good match with your program goals. This list is used to begin contacting funders. You need to determine if your program is both eligible and if approaching the funder is feasible.

When you do research you are screening for:

- Funder's missions and programs (to check match with your youth program)
- Size of grants
- Geographic and other limitations
- Types of grants, i.e., project money, endowments, conference money, matching money
- Recent fundees – types of institutions and types of projects
- Names of Trustees and Program Officers
- Application guidelines
- Special requirements (i.e., some funders do not accept unsolicited proposals, others do not accept proposals from museums but will consider museum-school collaborations if the school applies)

proof of 501C3 status which verifies an organization's non-profit status. If you don't conform, don't apply.

Funding Similar Organizations: Check a funder's funding history to see if other museums like yours have received support. If not, your chances can be significantly reduced. In rare cases your program may be so compelling in the way it matches the funders' mission that it will be considered despite the fact that the funder has not given to museums in the past.

WHERE TO LOOK

Online Resources

Most fundraising databases are available online. Large museums often subscribe to online services providing access to funding databases. You can get the same information in larger public libraries, university libraries and local foundation centers usually at no cost. The advantages of online research are speed, frequent informational updating, sorting, cross references and printouts. CD-ROMS are limited to the information originally inputted; they cannot be updated. Online databases are sorted by program type, geographic area, type of support, grant size and/or many other applicable variables.

Many foundations have websites with complete funding information including Annual Reports, application forms, lists of recent fundees, staff and mission/program descriptions which can be downloaded at low to no cost, depending on the center/library.

There are literally hundreds of fundraising websites. The following are some of the most important ones. Each will lead you to other sites, which could be useful.

www.fdncenter.org
The Foundation Center is a non-profit clearing house of information on grant makers and funding activity. The site provides information about the Foundation Center's programs, publications and the locations of collections and libraries. The site in linked to other fundraising websites including government funding and nonprofit services.

www.nonprofit.gov
The nonprofit Gateway Network is a site created by the White House to help nonprofit organizations access information regarding funding and services provided by federal agencies.

www.afpnet.org
The Association of Fundraising Professionals' website offers a fundraising resource center, professional certification, educational opportunities, directory of consultants and a chapter events listing.

Print Publications

There are literally thousands of print publications related to funding sources. The following list will provide you with basic resources to conduct a

prospecting search. You will certainly find others of use as you begin researching.

Annual Reports
Annual Reports can be requested by telephone or by formal business letter. They provide an in-depth picture of a funder's mission, programs, areas of interest and philosophy. They often contain proposal guidelines and related information. Smaller foundations may not issue an Annual Report but they may offer program policy guidelines for potential applicants.

Chronicle of Philanthropy
The Chronicle of Philanthropy is a bi-weekly publication for the non-profit world containing articles on fundraising trends, lists of upcoming events, synopses of Annual Reports, listings of new grants and funders and a variety of related information. Print copies are available at every Foundation Center. Subscriptions and print copies are also available at:

The Chronicle of Philanthropy, Suite 700
1255 Twenty-Third Street, NW
Washington, D.C. 20037
(202) 466-1200
Also accessible online at http://philanthropy.com/

Corporate Philanthropy Report
The Corporate Philanthropy Report is a monthly publication featuring a corporate sector (i.e. papermaking, pharmaceutical, sports products) and profiles of 5-10 corporate funders per issue. It also contains articles about corporate funding trends. Some fundraising libraries have copies available; most will order it if they don't have it already. You can also get copies from:

Corporate Philanthropy Report
Aspen Publishers, Inc.
For General Orders:
Phone: (800) 638-8437
Fax: (301) 644-3550

Fund Raising Mantra #1

When in doubt, call, find out!
Never approach funders unless you are sure your program meets their guidelines.

Fund Raising Mantra #2

No means NO!
If you are told your project doesn't match their guidelines, don't argue. Thank them politely for their time and ask if they can suggest another funder. (You can go back later to see if their funding priorities have changed)

PART D: ESTABLISHING RELATIONSHIPS WITH FUNDERS

Establishing Relationships - Opening Doors

This is the single most important part of fund raising; developing a relationship with a potential funder so the funder knows and understands your organization and you understand the funder's interests and funding practices. The process takes time and is cumulative; the more contact you have with the funder the stronger your relationship.

Fundraising Mantra #3

People rarely give money to strangers!
They give money to people they know.

Ways to establish relationships with funders:

Here's where a list of foundation trustee/staff can come in handy. If you have a development office this is the time to brainstorm. The following techniques are helpful in opening doors:

- Circulating foundation trustee/staff lists among museum senior staff and trustees to see if there are any contacts. If there are, trustees can arrange introductions. Be sure to get your development director's approval before contacting trustees. Strategies for establishing relationships with funders can also be appropriate for cultivating allies among the museum's trustees.
- Writing query letters briefly reviewing your youth program and asking if the program meets the foundation's funding interests.
- Telephoning the foundation's program officers to discuss your youth program.

Funding Mantra #4

Never approach a funder before checking with your director or development department
It's possible they already have submitted a funding request or are planning to do so in the future.

PART E: PRESENTING YOUR YOUTH PROGRAM

Program materials introduce your youth program to funders, colleagues, visitors, trustees, and the community. You should have multiple copies on hand to respond to queries rapidly. Program materials are used in proposals, brochures, inserts for press packets, sections of Annual Reports handouts at meetings and conferences or other publications presenting the museum and its services. Materials can be produced at low cost by photocopying and/or they can be done up as sleek brochures. You may use some or all of these materials, depending on whom you are trying to reach.

Creating Materials about Your Program

The following is a list of useful program materials to develop and/or collect for presentation purposes.

Introduction to the Museum

Every museum, large or small, has print material introducing the museum. These materials include Annual Reports, brochures, press releases, newspaper articles and boilerplate texts used in proposals. In mid- to large-size museums, the public relations department assembles a variety of hand-picked materials in a folder created with pockets and a place for a business card.

In selecting introductory materials keep in mind the following information which funders need to know:

- Museum mission
- Museum location
- Museum trustees
- Museum staff
- Budget size
- Number of visitors
- Types of services offered
- Museum funders

Program Goals

Every description of your program must have a clear, short and understandable statement of your program goals. Goal statements identify the purpose of your program and what you plan to accomplish.

Examples of Goal Statements:

- The goal of the XXX youth program is to nourish and sustain interest in science among inner-city, middle-school girls of color.
- The goal of the Science Career Ladder is to provide inner-city youth of color with access to science and science teaching careers.
- The goal of Evenings at the XXX museum is to involve the parents of program participants in their children's education.

Program Descriptions
Program descriptions explain what you will do in order to meet your goals by providing details on all program activities. They include a listing of program activities, a calendar and/or timeline, available resources and project staff.

Demographic Data
Demographic data describes the population your program/museum serves. In addition to helping the reader understand the age, education level, ethnic background, languages spoken, family employment and other pertinent information; demographic data shows your awareness and sensitivity to community needs. Large museums have such data available in their development office. Local newspapers, public libraries and municipal governments are usually reliable outside resources for this type of information.

TIP:

Photographs of participants engaged in program activities bring the program to life and provide important demographic and contextual information. If you have a limited budget, color photocopies can be very effective.

Participants' bios are short informational pieces about youth participants with photo portraits. They provide strong visual impact and human interest information. Participant bios help the reader identify with youth. Bios tell a little about participants' families, ethnic identity, school experiences and aspirations. Participating youth can help write their bios and be sure to get parental permission before using these materials to promote your youth program.

Impact Data
Impact data shows that your program works. This data is so important it can make or break your program's future. If you can prove your program is achieving its goals, you can make a strong case for funders to invest in your efforts. If you have weak or no impact data, it is hard to convince someone that your program is or will be successful.

Start-up Program Data
Qualitative data are data from program participants and other stakeholders in the form of statements, impressions and attitudinal surveys. Qualitative

data are the only data available for start-up programs, meaning programs that have been operating for less than three years.

Examples of qualitative data:

- A survey of 30 youth participants done by XXX Consulting Associates in 2007 indicated
    - 90% of students felt they had a better understanding of science after working at the museum.
    - 85% of student participants reported that their science grades improved after working at the museum.

Quantitative data presents hard numbers and statistics for programs that are at least 3-years old.

Examples of strong quantitative impact data:

- A survey of 30 program alumni conducted in 2006, by XXX Consulting Associates showed that
    - 85% of participants enrolled in college after graduating from high school
    - 90% of participants became museum Explainers upon completing the pre-Explainer program
    - 78% of participants took elective science courses in high school

Program Staff
A listing of program staff by name and responsibility with short bios shows you have qualified people working with youth. You may want to include photographs to show staff diversity, age and to add a human component to your staff list.

Museum Resources
Present the resources available to youth in your program using lists, photos and texts,
e.g., use of 50 acres outdoor environmental center, use of medical school laboratory, use of museum collections. You might want to include photographs.

TIP:

Start collecting materials for impact data when you begin your program. Keep records of participants' addresses, phone numbers, schools, majors or courses taken, extra-curricular activities, statements about their experiences in the museum and at school, history of relationship with the museum. You can't collect impact data retroactively!!!!

Partnerships
Collaborations/partnerships are cost-effective ways of sharing resources, expertise and extending program impact. They are often required by funders. Public-private partnerships refer to corporate and non-profit collaborations. Community-based organizations such as local churches, Boys and Girls Clubs, after-school programs and ethnic organizations are important partners for your youth program because they bring expertise about the youth and their cultures.

TIP:

Funders recognize the difference between true collaborations, where each party brings needed expertise and resources that are part of program design, and pro-forma partnerships, created to attract funds.

All partners should be involved in program planning. You will need evidence of true partnerships in the form of program design and letters of commitment.

If your program is a partnership or collaboration among several agencies, e.g. museum and school, museum and church, museum and local youth group, be sure to give each organization equal space and equal treatment in the program description. Background information about each participating organization should include its particular mission, a short history, nature of its involvement in your youth program, resources brought to your program and the participating program staff.

Testimonials
Testimonials are statements by program participants, staff, and parents about their experience with your youth program. They can be collected formally by asking participants for their written impressions of their experiences or informally through observation and recording.

TIP:

Photographs - Charts
Presenting information through photographs and charts is a powerful way to provide important information about your program. Many museums provide graphics services to program staff for this purpose and some have photo archives.

Examples:
"I didn't know what I wanted to do after graduating from high school. Working at the museum helped me decide to become a teacher."
"Since my daughter joined the museum youth program she became a much happier child at home."

PART F: WRITING YOUR PROPOSAL

PROPOSAL WRITING MANTRA #1

Follow the Guidelines. Do What You Are Told.

REQUEST LETTERS

Some funders ask for a letter of request rather than a full proposal. A request letter is similar to a proposal. It contains a project description, project goals and objectives, budget information as well as additional information to help the reader understand your project. Request letters are usually 3-5 pages. They are written on museum letterhead in the form of a business letter.

Request letters are generally required by funders who require a short project description before deciding whether or not to consider a full proposal. If you are unsure about how to approach a request letter, check with your development department or ask a colleague at another museum.

PROPOSAL WRITING

This section will walk you through proposal writing. For every potential funder you approach there are many other organizations competing for the same funds. Your presentation must be clear, easy to understand, convincing, error-free and attractive. The funder must conclude that your goals match his/hers and that you have an effective, realistic and well-developed plan for achieving you goals.

TIP:

Memorize proposal writing mantra #1. Your proposal must comply with the funder's instructions regarding number of pages, font size, margins, line spacing and appendices. It's wise to use the funder's outline as your proposal outline. Most funders will not read a proposal that doesn't comply with

their instructions.

Writing a proposal is a straightforward activity - it means doing exactly what you are told. Follow the guidelines religiously. To insure compliance copy the guideline sections in the same order, using the same headings and numbering that appear in the guidelines. Use this as the template for your proposal. If you are unsure about anything in the guidelines, call the funder and ask.

Some funders accept standard application forms, available through a local foundation center or by calling the funder directly or by accessing them from the funder's website. The sections that follow are based on a standard proposal format. An individual funder may have different requirements but the information in these sections is sure to appear somewhere in the proposal or on the foundation's application form.

STANDARD PROPOSAL FORMAT

Project Summary

The *project summary*, a short but detailed project synopsis, is the first thing the reviewer reads; like all first impressions, it is very important! The summary includes goals, objectives, target audience, program activities, project length, evaluation and dissemination plans. If you can't summarize your project in 2-4 paragraphs your project is too vague. Writing a summary helps focus your thinking. The summary orients the reader to the proposal contents.

Need

The *need* section indicates that your program responds to a real problem and that you are aware of both the problem and other attempted solutions. Strong needs sections must have hard data (statistics) that prove the need exists. If, for example, you are asking for money to support an after-school youth program to provide urban youth with a safe, productive after-school experience, find data showing high crime rates among unsupervised teens during after-school hours. Always cite the source of your data using footnotes, endnotes or citations within the text.

Include a summary of other youth programs addressing the same need and show how your program fits into the bigger picture. Ignorance of similar efforts is a serious flaw in a proposal; most funders are fully aware of other efforts and expect you to be well informed. Funders are usually looking for new investment opportunities unless your project is a replication program.

Youth programs meet the needs of youth and the museum. This important aspect of your youth program should be discussed in the needs section.

Youth programs help museums to:

- Diversify museum audiences
- Provide on-floor interpretation and teaching assistants
- Provide museum education staff with direct, ongoing contact with teen audiences and their needs
- Establish relationships with hard-to reach communities
- Increase community good will and involvement with the museum
- Bring youth, usually not represented in museums, into these organizations. Additionally some youth programs help museums fulfill their missions.

Target Audience

A strong proposal is clear about the *target audience*. It includes detailed information about who they are, their relationship to the museum, recruitment plans, admission criteria, which agencies/stakeholders will be involved and why the program fits this audience's developmental level and needs. The better you understand the target audience, the better your program design will be. Your community partner can help you understand and reach your target audience.

Program Goals and Objectives
Make sure your goals match the funder's goals. *Goals* are the broad program outcomes you hope to achieve - the what. Objectives are the means of achieving those goals - the how.

Examples:

- Goal: To involve parents of teen participants with their children's education.
    - Objective 1: Host five evening dinner meetings for 20 teen participants and parents to include hands-on science activities, information on math/science high school requirements and math-science careers.
    - Objective 2: Provide one-on-one counseling for parents of teen participants on school progress and course selection.

Museum History and Capacity

Somewhere in the proposal you must provide evidence that the museum has the infrastructure, administration, finances and resources to support your youth program. If there is not an explicit section for this information, you can work it into other sections of the proposal or include it in the appendix. This section gives the museum's mission, location, size, annual budget, synopsis of its exhibitions and programs, physical and staff size, number of annual visitors and history with youth programs. If there are particular programs, exhibitions or services unique to your museum they should be described here.

Examples

Your museum:

- Trains 80% of the science teachers in the surrounding districts
- Provides traveling exhibitions to 10 other museums annually
- Uses a community-advisory committee to plan all exhibitions and programs
- Has delivered youth programs for the past 20 years
- Is located in the inner-city and is heavily used by community groups

Museum Staff

Funders want to know that the staff is well qualified for their positions and that there is longevity and stability. Some proposals ask for staff resumes in the appendices, others in the body. Emphasize the qualifications that pertain to your youth program when describing youth program staff e.g., teaching background, work as a camp counselor.

TIP:

A museum with youth program

Project Design
This section describes all project components in detail. Youth program components include: recruitment plans and procedures, attrition plans, orientation activities, project activities, workshop topics and agendas, youth roles, sequences of roles or activities, collaborating organization roles, resources, calendar, activities for parents and work with schools.

staff drawn from the target audience community makes a strong statement about the institution's awareness of program participants and community needs.

Project calendars can be presented in chart form, on timelines, or by lists. Clearly separate each project year and break down activities by season, month, week or day, as appropriate.

Project Administration
This section outlines staff responsibility for project-related tasks and functions. These include:

- Overall project supervision
- Day-to-day project management
- Project-related correspondence
- Record keeping
- Data collection
- Liaison with advisors, collaborators, evaluators, school personnel, etc.
- Report to funders
- Budget management

Advisory Board
Advisory Boards are essential in order to get input and feedback from experts and stakeholders in areas related to your youth program. Federal funders expect to see nationally recognized advisors. A strong youth Advisory Board includes local or national experts in social, cognitive, emotional and physical development of youth. Youth programming, youth services and community members (i.e., parents, teachers, religious leaders and members of partnering organizations) are people who interact with youth and their families in many different settings.

An Advisory Board might have between 8-12 members. The full Board generally meets a few times annually and meetings with sub-groups or individuals are held as necessary. Advisors are also expected to be available by phone, email or fax. Your program design should include Advisory Board meetings strategically timed to get Board input when you need it. Depending on funding, Advisory Board members may be paid a small honorarium ($200 - $300) and travel expenses. If the funder traditionally has funded projects that are advised by national experts, be sure to include national advisor's travel expenses and refreshments for meetings as you develop your budget. Generally, however, the closer advisors are to your museum geographically, the lower their travel costs will be.

Evaluation (see preceding module)
Evaluation is the process by which you assess how well your youth program is meeting your goals and objectives. Many proposals build in monies for outside evaluators who are more objective than museum staff because they are not vested in program outcomes. Evaluators can perform any of the following services:

- Develop evaluation instruments - surveys, questionnaires and observation guides
- Collect data
- Teach your staff data collection and documentation methodology
- Analyze data
- Write evaluation reports
- Provide ongoing feedback during program development

Strong proposals include the resumes of outside evaluators, goals and objectives that will be evaluated and methods for evaluation. Many designers send program descriptions to outside evaluators who, in turn, provide an evaluation strategy to include with the proposal.

The strength of the evaluation plans can determine the fate of a proposal. Funders take evaluation very seriously.

Dissemination
Dissemination is how you get others to know about your youth program. Typical dissemination activities include:

- Presentations of youth programs at professional conferences
- Workshops that show others how to adapt your youth program in their museums
- Articles about your youth program in professional publications
- Online websites for your youth program
- Replication manuals for your youth program
- Videos or DVD's about your youth program

QUALITY CONTROL STEPS

Internal Consistency
Internal consistency is a quality check, essential before submitting any proposal to a funder. Make sure your statistics and terminology are consistent throughout the proposal. If you say your museum serves 150,000 annual visitors on page one, make sure you use that same number on page eight. If you call the person who works directly with youth the Youth Coordinator in the proposal text, be sure you use the same title in the budget. Internal consistency makes it easier for the reader to follow your thinking. Some reviewers will reject proposals that don't show internal consistency. Make sure you check your budget against your narrative for internal consistency.

Proof Reading and Professional Input

Send a draft of your completed proposal to selected colleagues for their critique, input and edits. Limit your readers to 2-3 colleagues whose experience and eye for detail are exemplary to garner few but quality suggestions. Never submit a proposal before it has been reviewed by at least three experienced colleagues. Check for grammar, spelling, punctuation and conformity to required type size and page layout. Computer spell checks are insufficient. Don’t rely on the computer to catch all mistakes.

Keep in mind that once you submit your proposal, the funder will probably ask several experts in the field to review and comment on your proposal. Some reviewers won't read a proposal if they find errors on the first page. If you can't find colleagues to proof your proposal, it's well worth the investment to hire a proofreader.

Boilerplate
This term refers to text, usually generated by the development department, which is used over and over again in different proposals. Boilerplate text includes: mission statements,
staff bios, institutional descriptions, trustee lists, organizational charts and program descriptions. The more boilerplate text you have the easier your job. When you complete your proposal save the boilerplate text on a disc and file it with the hard copy. You will certainly use sections for other proposals and other staff may need information in your proposal for development or marketing purposes. Large museums are often networked so boilerplate text can be downloaded by any department.

BUILDING A BUDGET

Budget building can be a simple or complex task. Simple or complex, your budget must be checked for consistency with the narrative and for mathematical accuracy. The larger the request and the longer the project lasts, the more complex the budget. All budgets are educated estimates of project cost; they are not final commitments. During the course of a funded project there are opportunities to amend the budget if you find you have over-or underestimated in any category. Some funders allow 10% leeway and require formal requests for larger budget modifications.

In building a program budget for the first time, ask the business office or the museum's financial officer for assistance. They can supply you with needed financial information and check your final budgets for accuracy. If you can't get help at your museum call an experienced colleague.

In many museums budgets are built by teams composed of program, development and/or business staff. Some museums will not release salary information to program staff. In that case the development office develops the budget with program staff input.

Budgets are usually presented in single-year segments as well as cumulatively. If you have a three-year project your budget will have four pages, year #1, year #2, year #3 and a cumulative budget for year #4 showing the totals for all three years.

Most budgets are presented in two sections - Personnel and Other Than Personnel (OTPS). The funding guidelines will indicate budget format. If they don't, you can use any format that explains your cost projections (see sample budget on page 20-23). If you are building a complex budget, work with the business office or financial officer.

Budgets are generally built on spreadsheets. Check with your business office to see if there is an Excel or Lotus spreadsheet program available. If so, collect the information and work with the business office to enter the figures on spreadsheets. Spreadsheets are very helpful, but not essential, in building and revising budgets. They are well worth the trouble it takes to enter data.

Whether you are building a simple or complex budget the steps are the same. You need to know four things:

1. The pro-rated salaries of project staff (percentage of the annual salary allocated for the project - check with business office or department head)
2. Fringe benefit rate (check with business office)
3. All other project costs
4. Allowable indirect costs (costs of museum overhead not directly related to the project – heat, electricity, etc.) you need to know the indirect percentage rate. Ask the business office or check other proposals.

SAMPLE BUDGET

Budget Scenario:
This budget is for a year-round youth program for 20 inner-city youth of color, ages 15-17. The program has two components: a six-week summer training experience at the local science-technology center, followed by a 35-week Explainer program in the museum for summer trainees paid with stipends.

Summer training involves learning how the museum works, participating in training workshops, learning to explain ten exhibits to visitors, learning to conduct one hands-on workshop for children ages 5-10, hosting the information desk and assisting in the museum shop. Youth are recruited from members of the local Boys and Girls Clubs and screened by Boys and Girls Club and museum staff. The staff of both organizations plan and deliver the program.

The program includes an orientation for participants' parents, a presentation at the end of the summer and two evenings for parents during the school-year, one in the fall and another in the spring. The evenings include behind-the-scenes tours led by participants, an informal meal for parents, participants and project staff, and information about college admissions and scholarships.

There are ten advisors drawn from local community-based organizations. All live within commuting distance of the museum. There are two advisory board meetings over the year. The evaluator lives in another city and will attend advisory board meetings, prepare and administer evaluation instruments, analyze data and write the final report.

Museum Staff includes:

- One full-time youth coordinator (museum staff)
- Two part-time museum education staff
- One part-time museum secretary

Two Boys & Girls Clubs staff will work on the project part-time

Consultants include:

- One external evaluator and ten advisors

Sample Budget Worksheet–Step 1
Determine all museum staff salaries prorated by the amount of time they will devote to the youth program.

Staff Salary Breakdown:	
Youth Coordinator: Full time @ $28,000 Annual Salary	$28,000
Education Staff: 25% Time @ $24,000 Annual Salary	$12,000

Secretary: 15% Time @ $24,000 Annual Salary	$3,600
Graphics Designer: 4% Time @ $25,000 Annual Salary	$1,000
Total Salaries	**$44,600**
Calculate Fringe Benefit: Fringes @ 20% = Total Salaries x Fringe Rate	$8,920
Total Salaries + Fringes	**$53,520**

Sample Budget Worksheet–Step 2
Determine all related program costs - Other Than Personnel Expenses (OTPS)

Program Costs:	
Supplies: 20 Participants x $300 (workshop materials, aprons, badges)	$6,000
Printing: 25 Handbooks @ $3.00 600 Project Description Brochures @ $0.50	$75 $300
Participant Stipends: 20 x $1000	$20,000
Honoraria: 10 Advisors @ $200	$1,000
Boys & Girls Club Contract: 2 staff @ 20% $26,000 Annual Salary	$10,400
Travel:	
Evaluator: 5 Trips @ $400 Airfare 10 days @ $250 Per diem (Hotel, Food, Ground Transport)	$2,000 $2,500
Staff	$350
Phone, Photocopies, Email, Postage	$700
Meeting Refreshments/Meals 3 x 40 People x $25 Each	$3,000
Total OTPS	**$52,325**

Sample Budget Worksheet–Step 3
Calculate direct costs

Direct Costs = Salaries + Fringes + OTPS ($53,520 + $52,325)	$105,845

Sample Budget Worksheet–Step 4
Calculate indirect costs

Indirect Costs
Indirect costs refer to museum overhead, the expenses that must be incurred in order to create an organizational infrastructure that can deliver your youth program. Indirect costs include heat, mortgage, electricity, maintenance, photocopy machine maintenance, computer repairs, etc. The business office will tell you your museum's indirect rate.

The indirect rate is a percentage of the direct rate.

Example:

Total Direct Costs	$105,845
10% Indirect Rate = 10% x 105,845	$10,585
Total Project Costs = Direct + Indirect	$116,420

Your one-year project will cost almost $116,500. If you are advised to reduce the size of the budget, decide on ways to modify the project without loosing its integrity. Perhaps you can eliminate travel expenses for the evaluator by using a local expert; replace advisors' honoraria with reimbursement for their transportation costs; adjust staff time after the summer session; or even reduce the number of weeks the participants receive a stipend.

Matches
Rarely is a project funded by a single funder. In fact, some funders may even require matching funds to receive a grant. Let's say your program costs $100,000. Funder A will provide up to 75% ($75,000) of the cost and require a 25% match ($25,000). You need to find a second funder to provide the remaining 25% or you may be permitted to match the money with in-kind contributions (non-cash) made by you or other contributors. Often government funders require a match, possibly a 1-1 match in which you would be expected to raise one dollar for every dollar provided.

Requesting matching money is relatively easy since you already have a proposal and a budget. Review the budget and see if you can break up the project so each funder pays for a part of the whole program. In our sample we are requesting matches for student stipends and Boys & Girls Club staff time. The museum is matching the 10% indirect cost.

Youth Program Sample Budget

	Year 1		
	Total	**Request Funder A**	**Match**
Personnel			
Youth coordinator	28,000	28,000	
Education staff	12,000	12,000	
Secretary	3,600	3,600	
Graphics designer	1,000	1,000	
Total Salaries	**44,600**	**44,600**	
Fringes @ 20%	8,920	8,920	
Total Salaries + Fringes	**53,520**	**53,520**	
OTPS			
Supplies	6,000	6,000	
Printing	375	375	
Stipends	20,000		20,000
Honoraria	2,000	2,000	
Evaluator	5,000	5,000	
Boys & Girls Club Contract	10,400		10,400
Travel	3,964	3,964	
Postage, Photocopying, Email	700	700	
Meetings	3,000	3,000	
Total OTPS	**52,325**	**21,952**	**30,400**
Total Direct Costs	**105,845**	**75,472**	
Indirect Costs @ 10%	**10,585**		**10,585**
Total		**75,472**	**40.985**
Total Project Cost	**116,420**		

Use this format for the entire budget. List the sources of your matches in the proposal text and in the budget narrative.

Budget Narrative/Detail
The budget narrative is the section where you describe, for each budget line, the purpose and breakdown of that expenditure. You also list matching fund sources. Budget detail shows the calculations you used to arrive at your figures.

Examples of Budget Details for Sample Budget:

Printing - 100% Request 25 Handbooks @ $3.00 600 Project Description Brochures @ $.50	 $75 $300
Stipends for 20 Youth, $1,000 each	100% match from Good Folks Foundation
10 Local Advisors' Honoraria @ $200 per Advisor	$2,000

In-Kind Contributions
In-kind contributions are non-monetary means of support. Some funders allow you to count in-kind as matching money. In-kind contributions are: use of space at local school, use of lab equipment at local hospital, donation of equipment or supplies, donation of professional staff time, etc.

Appendices
Appendices are the add-on sections at the end of a proposal that allow you to supply additional information not included in the body of the proposal. Check guidelines carefully. Some funders set the number of allowable appendix pages; others don't allow any appendices.

Typical appendix sections include:

- Institutional profile and/or history – usually boilerplate available from development or director's office
- List of trustees from development or director's office
- Staff résumés and bios - usually on file with business office, otherwise collect them from relevant staff
- List of advisors, possibly with bios (one to three sentences are sufficient to show expertise and/or community involvement)
- Letters of commitment from advisors, colleagues and partner organizations, ideally from the director. These letters should be provided on professional stationery committing to some project aspect (recruitment, use of space, advertising, outreach, participation in upcoming workshop, etc.)
- Bibliography of studies and publications used to develop the program
- Sample program products—videos, workbooks, newsletters, etc.
- Audited financial statements for the museum

TIP:

Always respond to a rejection. This is one way to stay in contact with a potential funder. Write a thank you letter expressing your appreciation for the time taken to review your proposal.

Call or write, requesting a meeting to discuss how you can strengthen your proposal and reapply at a later

Handling Proposal Rejections and Success!

Everyone gets rejected at some time in their fundraising activities. Rejections can be used to leverage contact with funders and to learn how to strengthen your program and/or proposal. Always respond to a rejection and transform each one into a learning experience by asking the funder for feedback.

date.

File your rejection letter and mark your calendar with the next deadline from that funder. Call or write the funder a few months before the next deadline indicating your interest in reapplying. Request a meeting and/or updated guidelines.

In addition, for successful funding presentations, it is essential to ask what won funders over, so you can accentuate that element within future fundraising efforts.

TERMS TO KNOW

Accessibility: Easily approached environments, programs or activities.

Advisory Board: A group of experts in a field assembled periodically to advise on content, methodology and to provide information to program developers. Most funders expect to see Advisory Boards in proposals.

Annual Report: A yearly report issued by organizations outlining their major accomplishments and stating their philosophy, mission, financial status, Board of Directors, staff and trustees. In the case of foundations, annual reports also have a listing of their various programs (types of efforts which receive funding) including grantees, types of projects and amounts awarded. Annual Reports are a research tool for fundraising. Some annual reports contain guidelines for grant applicants.

Attrition: The drop out rate. Attrition is an important factor in program development. Low attrition is a strong indication of program effectiveness.

Audience: The particular group of people for whom a program is designed. Examples are pre-schoolers, inner-city youth, middle-school girls, etc.

Audit: A legally required series of procedures to test fiscal transactions and internal controls used by an organization. An audit is a formal review of an organization's financial status and accounting procedures. The end result of an audit is a professional opinion written by the accounting firm performing the audit.

Benefit: Gain to a particular party. Strong programs provide benefits to both the institution and program participants. Examples are youth programs that expand the science experiences of participants and provide the museum with diverse floor staff.

Bidding: A competitive process where contractors estimate project costs and submit their fees for a particular job. Many museums use bidding to either conform to city government regulations or to determine realistic project costs. Bidding is common for capital projects, exhibition development and other large projects.

Board of Directors: Volunteers who oversee an organization. See trustees.

Bottom Up: Momentum or input that comes from people at the lower end of an organizational hierarchy.

Budget: An itemized listing of estimated income and expenses for a defined time period.

Capital Funds: Monies that are restricted to building projects, e.g., renovation, expansion, new buildings, etc.

Capital Campaign: A publicly announced effort by an institution to raise capital funds
Capital campaigns have time limits and financial goals, i.e., to raise eight million dollars for a new wing on a building over 5 years.

Charitable Trust: An organization that functions as a foundation.

Collaborations: Arrangements between two or more organizations to join staff/resources in order to create and deliver a program. Examples are: museums and schools working together on youth programming. The school might assist with recruitment and provide a liaison between the school and museum. The museum would report on the student's progress to the school.

Community Based Organizations: Non-profit organizations that exist within a particular community to serve its residents. Examples are churches, libraries, museums, Boys & Girls Clubs, etc.

Consultant: An outside expert hired on a temporary basis to provide guidance, resources and expertise to an organization. Some organizations use the term consultant and contractor interchangeably. Examples are: proposal writers, evaluators, graphic designers and exhibit fabricators (see contractors). Organizations often use consultants and contractors because they either lack expertise, need expertise only for a short time on a particular project or because it is cheaper or more efficient to work with outside consultants. Consultants and contractors do not receive fringe benefits and are not considered employees.

Contract: An official, signed agreement, between a museum and outside party, outlining the services to be performed, time period, payment schedule and other terms developed by both parties.

Contractor: A professional expert, often working for or owning a separate company, engaged on a temporary, contractual basis at a prearranged fee, to deliver needed services to an institution (see consultant).

Corporate Foundations: Organizations formed by corporations for the purpose of distributing corporate profit dollars to organizations or individuals that meet their criteria for granting monies. Many corporate foundations restrict their giving to geographic areas where their employees work.

Cultivation: The process of developing a relationship between an organization and a potential funder.

Developmental Level: Descriptions of the physical, cognitive and emotional characteristics of youth at a particular age. Examples are adolescence, latency, young adulthood, etc.

Direct Costs: Costs that are directly related to a particular program and would not exist if a particular program didn't exist. Examples are: program supplies and equipment, program-related travel, program-related evaluation and sometimes the percentage of time a full-time staff member devotes to working on a particular program.

Diversity: Variety within a group. In youth programs the term is usually used to describe participants from different ethnic backgrounds.

Donor: Someone who gives money to an organization to support its efforts.

Earned Income: Income earned by the exchange of museum services for money. Examples are workshop fees, museum shop profits, museum admission fees, etc.

Endowment: Funds donated to an organization for the purpose of providing ongoing income. Endowment monies are invested and the interest usually provides income; individual endowments have different rules as determined by the donor and Board of Directors. The larger the endowment, the more fiscally solvent the organization.

Equipment: Any machinery or apparatus that costs over $500. Different funders have different criteria for equipment cost. Be sure to check the regulations before writing a budget.

Equity: Fairness, equal access; the result of efforts to "level the playing field," thereby providing those traditionally underserved with the opportunities and supported needed for success.

Evaluation: A process used to assess the effectiveness of a program by comparing results with program goals.

Expenses: Program-related costs.

Feasibility: An assessment of how realistic a program or plan is. Feasibility studies are often commissioned by museums before beginning large, expensive programs such as expansions.

Federal Register: A weekly publication of the federal government listing all federal grant opportunities and requirements for funding eligibility, organized by agency.

501C3: An IRS designation for non-profit public organizations. Proof of 501 C3 status is usually required by funders.

Focus Group: An ad-hoc group of people representative of a target audience assembled for a short time period to help an evaluator assess prior knowledge, interest or to get reactions to a projected program or exhibition.

Formative evaluation: A process used during program/exhibition development to assess effectiveness and adjust the program/exhibition accordingly. Examples of formative evaluation results are: label copy that is too hard to understand, youth programs that mix incompatible age groups, etc.

Foundation: Legal entities formed for the purpose of giving money to selected organizations or individuals in order to achieve the foundation mission.

Fringe Benefits: Costs of employee benefits. Examples are: health benefits, employee pension contributions, etc. These are usually calculated as a percentage of employee salaries.

Front-end Evaluation: A process used early in exhibition and program development to determine what a particular audience thinks, knows and wonders about the subject to be presented. Front-end evaluation

helps the exhibition/program designer select content and approaches for a particular audience.

Funder: An individual or an organization who gives money to an organization to support its efforts.

FTE: Abbreviation for Full Time Equivalent. Used in developing budgets when calculating part time work by comparing the hours to a full-time day or work week. Example: Seven youth work five hours each weekly or a total of 35 hours per week. The science center's full time week is 35 hours. This would be calculated in a budget as one FTE.

Goal: A desired result or condition for a program or exhibition. Goals describe major results. Goals are general, long term and usually non-measurable. Examples are: Nurture and sustain youth's interest in science. Assure that adult caretakers and family members of youth participants feel comfortable at the museum and have access to museum resources and museum staff.

GOS: Abbreviation for General Operating Support. GOS is unrestricted money; it is much is more difficult to raise than program-related support and much more flexible.

Grant: Monies awarded an organization to carry out a particular project.

Honoraria: Monies included in budgets to acknowledge contributions of guest speakers, advisors and others who are basically volunteering their time. This is a small thank you token, far below the true cost of the service.

Impact Data: Data collected and arranged to show the long-term impact of a program or exhibition. For instance, survey results of youth program participants over a five-year period showing an increase in their selection of science courses.

Independent Foundation: An IRS status designated to a foundation that is neither corporate, public nor private.

Indirect Costs: Costs that are related to the infrastructure of an organization and are therefore necessary for that organization to function. Examples are: heat, light, cleaning, employee health benefits, pension plans, audits, etc. Larger organizations that receive significant federal support have negotiated federal indirect rates.

In-Kind Contribution: A non-cash contribution to an organization or program. Examples include space, use of equipment, loan of personnel, etc.

In-the-black: Functioning with a profit.

In-the-red: Functioning with a loss.

Leveraging Grants: The process of finding interested new funders in supporting a project because other funders have already joined the effort. Lists of existing funders are often included in a proposal to show that other funders think the project is important enough to support. The better known the committed funder, the better the leverage opportunity.

Longitudinal Data: Information collected over a long time period, well beyond participation in a program. Longitudinal data are usually effective impact data because it shows the long-term effects of participation in the program.

Matching Money: Money raised in proportion to pledged funds. Matching monies are a form of leveraging. A funder agrees to grant an organization a certain sum if they raise a match. Matches can be 1:1, 2:1, etc. An example would be that a funder agrees to grant $100,000 to an organization if they can show a 1-1 match; the organization must raise an additional $100,000 from other sources to get the first grant.

Mission Statement: A succinct statement of the reason an organization exists, usually developed by trustees and staff and approved by the Board of Directors. The mission statement is the official presentation of the organization's purpose to the outside world. For example: to promote public understanding and appreciation of natural science through exhibitions and programs.

Nonprofit/not-for-profit: An organization that exists in order to deliver a public service and reinvests its profits, if there are any, in order to expand or enhance its services. Non-profit organizations do not have shareholders and must have 501C3 status.

OTPS: Abbreviation used in budget development for Other Than Personnel Services. These are all services not related to permanent staff costs, e.g., supplies, materials, travel and equipment. Outside consultants are included in the OTPS section of a budget.

Objective: A specific, measurable and achievable short-term result consistent with a goal. Objectives are similar to goals in that they describe future results. Objectives are specific (who does what), measurable (what specific outcomes are expected), time-bound (when) and achievable. Examples are: Retain 80% of youth participants in youth program over three years; 75% of youth caretakers and families will attend two museum-hosted events over a one-year period.

Off-site: Services offered in the community rather than in the museum. For example: workshops at libraries and churches given by museum staff.

On-site: Services offered at the museum.

Outcomes: Results of a particular program or experience.

Outreach: Programs or services offered outside the museum (see off-site). For example: science lessons offered by museum staff in schools.

Outside evaluator: An evaluation expert or firm, not on the museum staff, hired to conduct the evaluation of a particular project. Outside evaluators are used because they have no vested interest in program outcomes and are therefore neutral and impartial.

Overhead: The built-in costs that are essential in order for an organization to do business (See indirect costs). Examples are heat, light, furniture, maintenance, etc.

Partnerships: Another term for collaborations. Partnerships and collaborations are often preferred to single institutional programs because they are cost effective and expand program impact.

Part-Time Employment: An ongoing relationship with an employee based on services delivered for less than the full-time weekly equivalent. Salary is pro-rated. Most organizations have an hourly minimum required for eligibility for fringe benefits.

Philanthropist: An individual who makes donations to organizations or individuals in order to improve an aspect of the quality of life. Examples are Doris Duke, Bill Gates, Bill Cosby, the Rockefellers, etc.

Philanthropy: The effort to improve the status of mankind through charitable donations.

Pre-post Testing: A quantifiable evaluation technique where participants are tested before and after an experience to determine measurable changes as a result of the experience. For example: testing science vocabulary before and after a workshop and comparing results.

Pilot Projects: Small, shorter versions of a larger program used to test program ideas and procedures.

Planning Grants: Grants to support the development of a project infrastructure a project in order to prepare a full proposal. Planning grants are awarded for complex projects involving many collaborators. They typically pay for research, meetings, and ongoing communication among project participants.

Private Foundations: Non-government foundations that operate under specific regulations which include having an IRS-approved grants

program that distributes monies to individuals or organizations for charitable purposes.

Private Sector Funding: Organizations or individuals that operate for-profit organizations and choose to give monies according to their own criterion, e.g., corporate foundations.

Program Development: The creation of a series of activities designed to accomplish a particular goal or set of goals over a pre-designated time period for a particular audience.

Program Director: The person who has full responsibility for a program within an organization.

Program Manager: The staff member with day-to-day responsibility for program implementation. Program Managers oversee program staff.

Program Officer: A staff member of a foundation who has responsibility for a particular area of giving. The program officer meets with potential and current grantees, provides information and support, helps determine giving guidelines and procedures and has responsibility for either reading proposals directly or working with a panel of readers. The program officer oversees current grantees, often making site visits to determine how a project is going. The grantee works with the program officer throughout the life of the grant.

Proposal: A realistic, detailed projection of what your program plans. A proposal usually includes a description of the organization, staff, capacity to deliver the program, program goals, a calendar of activities, methods for achieving the program goals, methods for assessing if the goals have been met, along with a program budget and supporting materials.

Prospecting: Researching potential funders.

Public Foundations: Foundations with an IRS status based on their funding sources. A percentage of their operating funds must come from public sources to qualify for public foundation status.

Public/Private Partnerships: Partnerships between non-profit and for-profit organizations. Examples are museum training programs in technology for corporate staff or internships for museum youth program participants in a corporation.

Public Sector Funding: Tax money distributed through grants programs designed to enhance the quality of life for the general public. Public sector funding priorities are set by Congress at the national level or by state or local government officials.

Qualitative evaluation: Evaluation of non-measurable program goals. Examples are attitude, self-esteem, and morale.

Quantitative evaluation: Evaluation of measurable program goals. Examples are: higher science grades in school, number of youth who drop out of a program, etc.

Recruitment: The process of identifying and attracting program participants according to some predetermined criterion. For example: finding inner-city youth between the ages of 14 - 19 to work as museum guides.

Restricted Funds: Monies granted for a specific purpose, which cannot be spent on any other effort. For example: capital monies, which can only be spent on bricks and mortar.

RFP: Abbreviation for Request for Proposals. RFP's are issued by funders or by museums looking for bidders.

Salary: A prearranged annual rate paid by an employer to an employee in exchange for the employee's services to the organization. The rate is based on the number of hours considered full time work equivalent, e.g., 35 hours, 40 hours.

Seed Money: Funds for start-up programs, often for small pilot efforts.

Stakeholder: Any person or group of people affected by the programs or resources of an institution. Examples of museum stakeholders are trustees, staff, museum visitors, local schools, the surrounding community, etc.

Strategic Planning: Process by which an organization articulates what it hopes to accomplish in the future, what needs it will meet and how it plans to accomplish its future goals.

Strategies: A series of activities designed to achieve a particular goal.

Stipends: Monies given to program participants to assist with expenses, e.g., travel, food. Stipends are not salaries. Some funders will give stipends but not hourly wages or salaries to program participants.

Supplies: Material needed to run a program that costs under $500. Examples are: paper, paint, laboratory apparatus.

Summative evaluation: The final evaluation of a program/exhibition, after all changes have been made. Summative evaluation is usually a final report assessing program effectiveness in relation to program goals. Summative evaluation data are often used in proposals and final reports to funders.

Surveys: Data collection techniques used by evaluators where a particular group is asked a series of questions designed to elicit pre-determined information. Surveys can be written or oral. Examples are written or oral questions for museum visitors to determine where they live, why they came to the museum, their ages, sex, educational level.

Target Audience: A predetermined group for whom a program or exhibition is designed. For example: inner-city girls, ages 5-9 for a workshop designed to interest middle-school girls in science.

Time-line: A calendar of events and activities that describe a program over a predetermined time period.

Top Down: Decision making that begins at the top of the organizational hierarchy, usually with the Board of Trustees or the Director.

Trustees: Volunteers who donate their time to the oversight of organizations. Trustees create organizational policy, have the power to hire and fire the organization's director, and work for the good of the organization. Trustees have limited terms of office and during their tenure they are expected to provide expertise, connections, and donate money to the organization. Trustees have legal and fiscal responsibility for the organization.

Unrestricted funds: Monies that can be used for any purpose. Unrestricted funds are also called General Operating Support.