K-12 Partnership Report

# An Interview with Rebecca Lucore of Bayer

*How Bayer – and the Fortune 1000 executives they surveyed – view STEM education*

Rebecca Lucore serves as Executive Director of the Bayer USA Foundation and as Director of Bayer's *Making Science Make Sense* (MSMS) program. She spoke with us shortly after the publication of the company's 13th annual *Bayer Facts of Science Education* survey, which polled Fortune 1000 executives on their views of STEM education and the STEM workforce.

**KPR:** *Why make an investment in K12 education? What do you hope to accomplish?*

**Lucore:** Bayer is a science and research-based company, and the sciences are our livelihood. There is a diminishing STEM workforce in the US, and we have fewer students pursuing STEM careers. So for a company like ours, one that relies on a capable workforce in this area, this represents some serious issues. So we have a vested interest in this subject.

And we're not just looking at this as a Bayer workforce challenge. In general, science and technology have kept our country prosperous and globally competitive for most of the 20th century, and we need to be able to continue to innovate to maintain that standing. Without a STEM-ready workforce, we won't be able to do that.

**KPR:** *When talking about workforce development in the STEM fields, many people limit their focus to careers requiring significant postsecondary education, like scientists and engineers. But your work takes a broader approach.*

**Lucore:** When we talk about MSMS, we're careful to note that we're really not trying to create 100,000 new chemical engineers, because that's not what we need. We really need a scientifically literate citizenry. We need people who can read an article in the newspaper and understand it. We need people who can vote intelligently on science-related issues. We need people who can correctly measure dosages of medicine for their children and prepare nutritious meals.

And in terms of workforce development, the need for STEM education is broader than just highly skilled workers. We survey different stakeholder groups each year, and one of our surveys was of human resources professionals – asking them about the people they hire, and what they look for. Of course it's important for scientists and engineers to have a strong STEM background, but the skills you get from science and math instruction – creativity, critical thinking, working in teams, adapting to change, skills like that – those are important for everyone, no matter what field or position you go into. They're important if you're going to work in accounting, they're important if you're in HR. So for us, it's clear that everyone needs a baseline of scientific literacy.

**KPR:** *A lot of companies, in their K12 education work, tend to focus at the classroom level. While Bayer certainly does some of that, you also have other initiatives, such as your best practices reports, your recent conference, and your annual surveys, that are focused on gathering and disseminating information on the nature of the problems we face and on ways in which we can address them. Do you feel there's a lack of awareness of the problem? Why have you gone into these awareness-building initiatives?*

**Lucore:** I'm not sure that there's a lack of awareness of these issues anymore – but that really wasn't the case more than 13 years ago when we started working in this area. So we decided, when we first took this issue on, that it wasn't enough to go into schools, start partnerships, engage students, and leave it there. We felt that a big part of our efforts had to involve a public education campaign.

Public awareness continues to be one of the three

*Article continued on page 12*

# Welcome to *K12 Partnership Report*!

When I first got involved in community/school partnerships several years ago, I found that there was very little available for practitioners who wanted to discover what others were doing in this field. This newsletter is an attempt to change that, and I'm very pleased to present you with the first issue.

I firmly believe that building active, collaborative relationships between schools and their stakeholders is the single most effective way to create positive change in education. As Dr. David Mathews of the Kettering Foundation has said many times, "The public schools are the public's schools," and by throwing open the doors to the community - allowing stakeholders to become full partners in setting and reaching educational objectives - we create an opportunity to turn our schools back into true community institutions, with all the support that it entails.

We're a long way from that vision at the moment, and we're severely hampered by the lack of infrastructure in the partnership field. Every professional field has some level of infrastructure: professional networking and learning opportunities, certifications, industry research, accepted practices, directories, publications, competitions, and more. At the moment, partnership professionals have almost none of those things, and for this field to gain prominence and credibility, we'll have to work together to create them. I see this newsletter as a first step in that direction.

**Our mission**

We want the *K12 Partnership Report* to accomplish a number of things:

- We want to give partnership leaders practical information they can apply to their own efforts. If you can see what others have done, you have an opportunity to leap ahead: you can avoid mistakes that others have made and you can build on their successes. There's no sense blazing your own trail when you're next to a highway.
- We want to share with you the best thinking in the field. We want you to hear what business and school leaders say about their interests and experiences with partnerships; how industry experts see the role of partnerships in education; and the role that people see for partnerships in the future.
- We want to raise the visibility of the partnership field, helping education and business leaders see the impact that partnerships can have, and the central role they can play in education reform and improvement efforts.
- We want to serve as a community hub, a place where partnership leaders can find books, conferences, consultants, and more.

**What do you think?**

If you've ever gone back to watch the pilot episode of a favorite TV show, you know that it often takes some tinkering to go from promising concept to successful feature. That's exactly how we're looking at the first few issues of *K12 Partnership Report*: we're relying on readers to tell us what's right, what's wrong, and what's missing, so please share your thoughts with us. You can reach me by email at brett@dehavillandassociates.com or by phone at 704.940.3201.

In addition to your feedback, we want your stories: if you've been involved in a strong partnership, designed and managed by school and community partners and featuring measurable outcomes, we want to know about it - you could be featured in the newsletter! Let us know - and thanks for joining us as a reader!

K-12 Partnership Report

Brett Pawlowski
Editor and Publisher

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While ***K12 Partnership Report*** is delivered electronically in PDF format, we ask readers to treat the publication as they would any print-based newsletter to which they subscribe. Specifically, you can pass it around to an associate or two in the office - but we ask that you NOT blast it out across your district or the membership of your organization.

We do not add any security features to the PDF newsletters because we trust our readers to follow reasonable guidelines in sharing KPR with colleagues. If you have any questions, or would like to learn more about purchasing bulk subscriptions so that every school in your district receives a copy, contact Brett Pawlowski at 704-940-3201 or by email at brett@dehavillandassociates.com.

# The Case for Middle-Skill Preparedness

*Why career/college programs need to focus on more than four-year degrees*

Educators wishing to solicit business and chamber support have no doubt heard about the need for workers with four-year degrees. Both the education press and the mainstream media continue to highlight the need for scientists, engineers, and other highly skilled professionals.

But what you may not know is that the need for middle-skill workers is far more pressing. If you want to build a workforce preparedness initiative that will be compelling for your business partners and that exposes students to the full range of high-paying careers open to them after graduation, you should take the time to understand this area of the workforce landscape.

### What are middle-skill jobs?

Middle-skill jobs are those that require more than a high school diploma but less than a four year degree. These positions may require an associates degree, vocational training, technical certification, or significant on-the-job training.

The middle-skill category contains an extremely wide array of positions, including:

- Health technicians, nurses, and therapists
- Construction workers
- Electricians, plumbers, and HVAC specialists
- Maintenance and installation workers
- Clerical staff
- Salespeople
- Transportation specialists
- Machine operators and production line workers
- Mechanics and technicians (automotive and other)

It should be noted that middle-skill positions are among the safest from off-shoring trends evident in other fields: if your car breaks down, for example, you cannot send it to a different country to have it repaired.

Given this wide range of positions, it is difficult to make generalizations regarding wage levels and wage growth; however, many middle-skill positions pay well, with some workers making more than $100,000 per year, and many seeing wage growth well above the national average.

### The demand for middle-skills workers

While it is true that middle-skills jobs have declined as a portion of total employment over the past couple of decades, this was due more to the growth of high-skill and low-skill employment than to an actual decline in the category. And the fact remains that middle-skill positions still account for nearly half of all jobs today, at 48% (down from 55% two decades ago).

It is clear from surveys that middle-skill employees are in demand. The *2005 Skills Gap Report* from Deloitte and the National Association of Manufacturers polled manufacturing employers on their workforce needs and found that 81% face a moderate to severe shortage of qualified employees. When asked in which categories this shortage was seen:

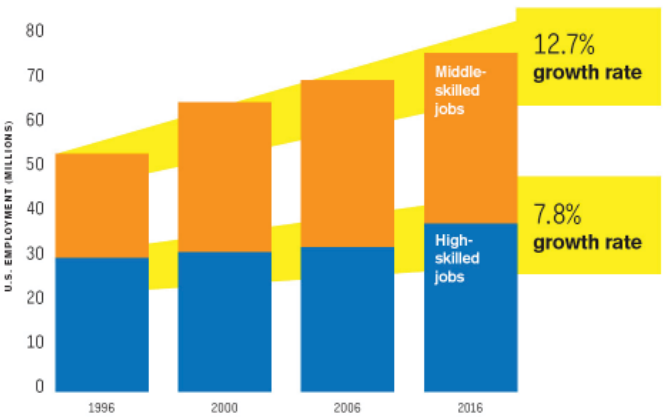
- 39% of surveyed manufacturing employers indicated a moderate to severe shortage of qualified unskilled production employees;
- 65% reported a moderate to severe shortage of scientists and engineers (high-skill positions); and
- 90% of respondents indicated a moderate to severe shortage of qualified skilled production employees.

While current demand is relevant in evaluating opportunities for students to enter middle-skill positions, future demand is an even more important factor, given that it may be several years before students participating in partnership-driven programs actually enter the workforce. And through that lens, middle-skill opportunities look particularly strong.

Looking at projected job openings between 2004 and 2014, researchers project that 22% of those opportunities will be for low-skill positions, 33% for high-skill jobs, and 45% for middle-skill positions. Looking at this in a different way, the Council on Competitiveness showcases the annual growth rate of opportunities in middle-skill and high-skill jobs through the chart below (featured in its *Thrive* report).

Projected growth rate of middle-skilled and high-skilled jobs

Source: *Thrive*, Council on Competitiveness; based on data from the U.S. Bureau of Labor Statistics, Employment Projections. Used with permission.



There are a number of reasons why middle-skill opportunities are expanding more rapidly than those in other areas; much of it can be attributed to the aging of the population in one way or another. The United States is in the beginning stages of a dramatic increase in the 65+ population, which is expected to grow from 40.2 million in 2010 (13.0% of the population) to 71.5 million in 2030 (19.6% ), and we will need to take care of those citizens as they age while replacing them in the workforce.

Healthcare, for example, is poised for particularly rapid growth. The Bureau of Labor Statistics expects the net growth in a range of middle-skill healthcare jobs will vary from 20-40 percent, adding more than 1.5 million jobs between 2004 and 2014. And in many of these jobs, real pay has increased at a rapid pace over the past several years, with nurses seeing an 18% increase and radiological technicians benefiting from a 23% increase (versus a national average of 5% over the same time period).

As many in the workforce begin to retire, executives are concerned about replacing them: A 2008 survey of executives by Robert Half International found that for 47% of them, replacing retiring baby boomers was their top workforce concern.

As one example, the U.S. Department of Energy notes that the electrical utility industry employes 58,000 electrical line workers, half of whom are expected to retire in the next five to ten years. They forecast a shortage of as many as 10,000 lineworkers, or 20% of the current workforce, in the number of qualified candidates to fill those positions, resulting in real limits on the country's ability to maintain and increase electricity supply. And this is but one field: there are similarly dramatic projected shortfalls in a number of other areas. Another estimate, noted in the *Thrive* report, indicates that for every ten maintenance workers who retire, there will on be three to seven qualified workers available to replace them.

For those who work with businesses and chambers, a clear understanding of the characteristics of the middle-skill market will provide a strong foundation for exploring partnerships - and motivation for informing students about high-paying jobs in high-growth fields.

### Resource Links

***Thrive*** - Council on Competitiveness
www.compete.org/publications/detail/472/thrive/

***America's Forgotten Middle-Skills Jobs*** - Skills2Compete
www.skills2compete.org/site/c.fhLIKYPLLuF/b.3354587/k.EF62/Resources.htm

***2005 Skills Gap Report*** - Deloitte, National Association of Manufacturers, and The Manufacturing Institute
www.nam.org/2005skillsgap

***The Skills Imperative: How Career and Technical Education Can Solve the U.S. Talent Shortage*** - U.S. Chamber
www.nam.org/2005skillsgap

# BHEF Unveils Online Resource Center

*StrategicEdSolutions.org offers case studies and partnership practices*

The Business-Higher Education Forum (BHEF) has launched a website offering information on building effective business/education partnerships with an emphasis on college preparedness and access. Found online at **www.strategicedsolutions.org** and available to the public, this clearinghouse offers strategies, tools, and examples of successful partnership-driven programs to help business and education leaders maximize the impact of their education reform and improvement efforts.

Launched as part of BHEF's College Readiness Initiative, the site's central feature is a database of partnership initiatives that can help underwriters and program developers alike understand what has and has not worked elsewhere. Highlighted partnerships include evaluation data, and selections are made in part based on relevance and ease of replication.

To find a program meeting a certain set of criteria, users can search and sort by type of program, target audience, grade level, and more. Each partnership outline includes the program's target population, goals, program highlights, partners (broken down into higher education, business, non-profit, and government) and the program's evidence of impact on its target population. Case study outlines also include contact information for the program's leader should users wish to learn more about an individual initiative.

The database of partnerships currently outlines 35 programs; the Business-Higher Education Forum invites leaders of successful initiatives to submit their own programs for inclusion on the site. According to Kirstin McCarthy, Associate Director of Programs with BHEF, additional features will be added to the site in the coming months to further assist individuals searching for successful partnership models and resources. If you are interested in submitting your own program for consideration or want to learn more about this new site, please visit www.StrategicEdSolutions.org or email programs@bhef.com.

# The Gowan Achievement Project

When people talk about workforce issues and K12 education, they're usually talking about preparing kids for employment opportunities after high school. But there are other ways in which the two intersect: for example, the reputation of local schools can be a significant factor for employees with children who are being asked to transfer into a new market.

This had become an issue for the Gowan Company, which provides crop protection products and services to farmers and others. While it has offices around the world, the company's headquarters are in Yuma, Arizona, where it employs more than 500 people. Gowan relies heavily on a scientific workforce, and often hires people from other parts of the country for positions at its headquarters. However, because of a perception that local schools could not adequately meet the needs of advanced students, the company has faced challenges in attracting workers with children to the area.

Jon Jessen, founder and president of this family-owned company, decided to approach the Crane School District directly so they could address this issue together. Jessen was no stranger to the local district: he had previously served on the Crane Governing Board (the local school board); Caroline, his wife, had taught at a local elementary school; and all four of his children had attended Crane Schools. Gowan and the Jessen family also have a long history of investing time and resources into Yuma's youth through college scholarships and other investments.

Jessen discussed his concerns with Cindy Baker, who is one of Gowan's presidents as well as a member of the Crane Governing Board. She initiated a conversation with Cindy Didway, Crane's superintendent, and they quickly put together a strategy and planning team that included:

- Cindy Didway, superintendent
- Lynn Thompson, assistant superintendent
- Janet Shields, curriculum director
- Mike Wicks, director of management services
- Chris Weigel, director of communications and instructional technology
- Jon Jessen, founder & owner of Gowan
- Cindy Baker-president of Exigent, LLC (a Gowan company) and Crane board member.

## The project

The team started by taking a look at the facts, and realized that there may be some truth to the idea that the school district was not meeting the needs of advanced students. Like other districts around the country, Crane was responsible for bringing all children to grade level, and this priority, combined with limited resources, meant that students already performing at or above grade level may not have access to all the opportunities the district would like.

Working from that reality, Gowan and Crane decided to create an initiative open exclusively to students already performing at or above grade level; furthermore, given Gowan's need for a future workforce with science and math skills, and the interests of its transferring employees, the partners decided to emphasize math and science through its initiative.

### The Gowan Achievement Project

**Where**:
Crane School District, Yuma, Arizona

**Partner(s):**
Gowan Company, which offers crop protection products and services, with offices around the world and 500 employees in the Yuma area

**Challenge:**
Gowan Company had a difficult time recruiting employees to the area - a perception existed that schools were focused on bringing underperforming students to grade level, not meeting the needs of students at or above grade level. Gowan also wanted to ensure the preparedness of the local workforce in the future.

**Solution:**
The Gowan Achievement Project piloted with 90 children in grades 4, 5, and 6 who were performing at or above grade level. Children were placed in classes with master teachers, given laptops with wifi access, experienced a math- and science-intensive curriculum, and participated in special activities such as field trips that emphasize STEM careers and industries.

**Partner Roles:**
Gowan underwrote the pilot program, including the cost of all technology and $10,000 grants for master teachers; it also helped design the program, participated in the hiring of the master teachers, has representatives on an advisory board, and participates in the program through classroom visits and field trips. Crane manages operation of the program.

**Outcomes:**
A test/control model was established to evaluate impact. GAP students outperformed their peers in math by 2:1 in Average Percent Gain Per Student, and by 8:1 in science. AIMS scores for 4th grade science show 93% proficiency for GAP students versus a statewide average of 53%.

Starting from this point, the partners created The Gowan Achievement Project according to the following parameters:

- **Grade levels** - GAP focused the project in the upper elementary grades (4, 5, 6); Crane is a K-8 district, and focusing on grades 4-6 allowed them to work with children who had been identified in grade 3 as performing at or above grade level through independent measures.
- **Pilot site** - The team decided to pilot the program at Rancho Viejo Elementary School, which has the highest free/reduced lunch rate (a commonly used indicator of poverty) in the district. If the pilot succeeded there, they felt confident that GAP would be successful elsewhere.
- **Instruction** - To ensure that participating students were challenged through a range of experiences, the partners decided to bring in master teachers to lead the pilot classes. The positions were posted within the district, and prospective teachers interviewed with the planning team and were asked to teach a quick lesson. The district picked up the cost of the positions, but Gowan supplied a $10,000 stipend for each of them.
- **Technology** - The partners felt it was important to promote technological literacy, and designed GAP accordingly. Each participating student received a laptop computer; wireless access was set up in each classroom; and students had access to a variety of peripherals (digital cameras, projectors, etc.) for use in classroom projects.
- **Science/math** - Given Gowan's interests, and those of its transferring employees, the project was designed with a strong foundation in science and math. Crane selected an electronic curriculum called A+ K12 Learning Courseware, which met their requirements for networking purposes, pre-testing, curriculum variety, and ease of use. Teachers received training in the use of the curriculum.
- **Rich learning experiences** - Students participated in field trips reinforcing science and math concepts and focused on career and college preparedness. These included trips to the Arizona Science Center, Lake Powell, local state universities, and Gowan Company headquarters. Additionally, students produced multimedia presentations and research papers on these visits and on topics related to the environment, geology, ecology, and Native American history and culture.
- **Oversight** - Individuals on the strategic planning team formed an advisory committee to review the progress of the program during quarterly meetings and to determine next steps for the program.
- **Evaluation** - To determine the impact of GAP, students participated in pre- and post-assessments in all areas of the curriculum; the district also set up a control group at another school and tracked their progress on key metrics. GAP student performance was also compared to statewide averages.

As initiator of the project and sole corporate partner, The Gowan Company took an active role in designing, funding, and overseeing the project. They also were heavily involved in discussions about the level and role that technology would play in the project; participated in interviews of prospective master teachers as part of their advisory committee role; and hosted students at their corporate headquarters on a field trip. And based on the success of the project to date, they have also been instrumental in planning for the future - including covering the costs of a rollout to other sites within the district.

## GAP Budget - Pilot Project

| | |
|---|---|
| **Salaries and Benefits** | |
| Teacher stipends (3 @$10,000) | $30,000 |
| Professional development | 6,000 |
| Benefits | 6,368 |
| **Class Travel** | |
| Local field trips (10/class @$250) | $7,500 |
| Out of town field trips (2/class @$2000) | 12,000 |
| Summer/extended day transportation | $7,200 |
| **Supplies and Curriculum** | |
| Consumable Supplies ($2,000/class) | $6,000 |
| Reading - Great Books/Novels | 5,000 |
| Math - Accelerated Math Program | 2,000 |
| Social Studies | 10,000 |
| Science - Equipment and Software | 10,000 |
| Assessment Program | 38,000 |
| **Consulting Services** | |
| Consultant/Resident expert fees | $20,000 |
| **Equipment** | |
| Laptop Computers (1/student @$1,500) | $140,000 |
| Network Printers (1/class @$1,500) | 4,500 |
| Server and Wireless Access Points | 15,000 |
| 3 Portable Recharging Computer Carts | 4,500 |
| Video Projection Equip. (1/class @$2,000) | 6,000 |
| Video Editing Software (1/class @$150) | 450 |
| Digital Video Camera (1/class @$850) | 2,550 |
| **Total Cost, GAP Pilot Project** | **$333,068** |

**Results to date**

As noted previously, GAP project leaders performed pre/post evaluations with participating students, and set up a control group at a different school comprised of students academically and socioeconomically similar to those in the pilot. Outcomes from the one-year pilot include:

- GAP students outperformed their counterparts in every areas in which the electronic curriculum was utilized.
- In the area of 4th-6th grade math, GAP students outpaced the control group by two to one in the Average Percent Gain Per Student.
- In 4th-6th grade combined science scores, GAP students stretched that growth to eight times the Average Percent Gain Per Student against the control group.
- In 4th grade science, the average for the statewide assessment (AIMS) was 53%; for GAP students, it was 93%.
- Two 5th grade GAP students each won 2nd place ribbons at the Yuma County Science Fair, the first time Rancho Viejo students have ever won ribbons at the event.
- The program has been covered by local media and internal (Gowan and Crane) reporting; this has started to increase awareness among the public and key stakeholders of the district's interest in serving the needs of children at grade level and beyond, and of Gowan's commitment to local schools.

**Next steps**

Based on all the results of this program to date, both Gowan and Crane have committed to continuing the program at Rancho Viejo Elementary School, which will involves an additional investment by Gowan of $40,000 for maintenance, additional software, and field trips. In addition, the partners are expanding GAP to both middle schools in the district at an additional cost of $300,000, which Gowan has already agreed to underwrite.

# How to Build an Effective Board

*Essential principles for creating a board that works for you*

Developing a board is one of the most important things that you can do to further the growth and development of your organization. There are two things you must do to develop an effective board. The first is to get the right people; the second is to make sure that roles and responsibilities are clear.

It is important to begin with the end in mind. Many groups begin with very little structure as they build their organizations; this is a major, and common, pitfall. As these groups develop, there are no rules for term limits, so the founding board, which is highly invested, has no incentive to step aside and allow others to assume leadership roles. While this approach may be very comfortable, and the founding board may consist of great individuals, it prevents growth, new ideas, and sustainability.

Make sure to have officer job descriptions, which include term limits and responsibilities, clearly identified as you begin to build your board. Samples of job descriptions for board members can easily be found on the internet. Those are a place to begin – but each organization should tailor these based upon their needs.

If you have already built a board and run into this type of issue, have the board update their bylaws. Treasure those founders by putting them in a trustee or founders group so that you do not alienate them, and still are able to utilize their great expertise and their passion.

**Diversifying your board**

There are some basic roles that board members should fulfill, and basic responsibilities they should understand and strive to fulfill. For the typical non-profit board, the category of skill sets usually runs something like this: fundraising, fundraising and fundraising. Well, maybe it should be a bit more diverse than this – but do not ignore the financial needs of the organization. No non-profit ever went out of business by paying too much attention to the financial stability of the organization.

So begin with the financial – fundraising, accounting, and grant writing for example. Who can help you with these important roles? Remember that most money is not really raised by special events, auctions, conferences, grants or sales – at least not in a sustainable fashion. It is raised due to relationships. Again – begin with the end in mind. Build your board with people who have connections to affluent community members who are good corporate or personal donors. Having an accountant on the board is important to aid in the development of proper fiscal protocols, which will keep you all employed (and out of jail).

There are other areas of expertise that you should look for, such as non-profit program management, evaluation, marketing, and legal services. But let's not just focus on the content; you also need to focus on the overall picture.

There are other issues that should be considered when selecting board members; these may be tied to the organization's goals, but not as directly as skill sets and contacts. For example, most non-profit organizations wish to represent the community they serve, however that may be defined. In order to accomplish this, think of the balance of representatives from areas of the community or service area, almost as if you were running an election for the service area. Make sure to balance for gender, age, and ethnicity as you feel appropriate.

I suggest you draw up a matrix. Make multiple categories that run across the top: Skill sets (list the skills you need on the board), gender, area of the community, age group, ethnicity, and/or any other categories you see as being relevant. As you recruit board members, check across the categories to see what you have covered. This will help you to identify who else you need to recruit for the board.


*KPR Readers...*

## We need your help!

***K12 Partnership Report*** reports on partnership programs, proven practices, and news from across the industry. To do that, we need to hear from you and others - professionals who are willing to share their successes (and failures!) and let us know what's happening in your area.

### News and Announcements

We will soon launch a column highlighting industry news, including announcements, new hires, upcoming events, and the like. Please add us to your email distribution list and let us know of any special happenings well in advance so we can share your news with others.

### Case Studies

***KPR*** considers case studies of successful partnerships to be a cornerstone of our coverage, and the most valuable feature for our practitioner readers. If you've been part of a community/school partnership with measurable outcomes and believe that your model could be of interest to others, please let us know.

### Writers

***KPR*** needs strong writers who have the experience and perspective needed to write how-to articles, interviews, and assigned case studies. We would appreciate the chance to review your writing samples and discuss assignments.

Please add the email address below to your press list, and be sure to share any announcements with us. To share a case study, or to discuss writing for ***KPR***, contact:

**Brett Pawlowski, Editor and Publisher**
brett@dehavillandassociates.com
or call 704-940-3201


**Strategic alliances**

One of the categories for the matrix should be "strategic alliances." Think about which organizations you should be affiliated with in order to fulfill your mission. School-community-business partnerships may develop relationships with the Superintendent's office, Chamber of Commerce, local civic and nonprofit organizations, principals, parents, and perhaps even the community foundation office. Look at your mission and think, "Who really cares about this work?" Then, recruit people who can serve you individually while linking you to those organizations.

When approaching board members, the linkage needs to be clear: you want them to help you build a relationship and serve as liaison. You may also consider asking those key partners to designate someone to serve as their representative, which would allow you to formalize the relationship.

**Board expectations**

"It really won't take very much time," is how many people have tried to recruit me to be on a board. "Really?" I reply. To me, that indicates that the board must not be actively engaged in the mission or the work of the organization. I want to know the expectations: if you ask for nothing, you usually get nothing.

I believe that a much more effective way to recruit is to say, "We really need you to be on this board to do XXX." Hit the person's hot button. If you have done your research you will know what it is. Talk about the work and inspire them to be engaged and to lend their efforts, their mind, and their Rolodex. The top reason most people volunteer is that someone asks them directly and tells them why they are needed. Make the expectations and the role of the board clear. That will lead to success. Minimal expectations will not.

Remember, the board should be strong enough to carry on the mission and objectives of the organization, regardless of what happens to the leader. Without that strong board, the organization itself will not be viable. Building your board is therefore one of the most important tasks you have as a leader; it is the foundation for your success.

**The matrix**

If you would like additional advice, or a copy of the matrix described above to use as a template, please contact me at BarbaraJoFrank@aol.com.

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*Written by Barbara J. Frank, Ph.D., a consultant and senior trainer for strategic planning, volunteer management, and partnership management. She served as the partnership director in Lincoln Public Schools in Lincoln, NE for nearly two decades, and served on the board and as a senior trainer for Partners In Education.*

# The Middle Grades Partnership

In the STEM education reform discussion, it's a given that urban school districts are an untapped source of the potential STEM workforce. In addition to large numbers of students, urban areas offer the infrastructure necessary to teach STEM disciplines: many corporations are based there; government tends to focus its efforts on these populations; and, of course, the majority of potential customers live in and around urban centers. It makes sense that education reform efforts should focus on the nation's cities.

Unfortunately, urban school districts are among worst in the country in terms of achievement. An ongoing partnership in Baltimore, Maryland serves as a potential model for those seeking to enter into education reform.

The Middle Grades Partnerships (MGP) in Baltimore is a public-private partnership designed to raise academic achievement among public middle school students who have had some success in the city schools, and focuses on preparing participating students for rigorous academic coursework in high school and college. Teachers and administrators from participating private and public schools work collaboratively to design challenging academic experiences in summer school sessions at the private schools and after school sessions at public middle schools, all of which are designed to meet the standards set by the MGP and individualized by the teachers and schools involved.

The idea behind the partnership percolated from the experiences of Thomas Wilcox, current President of the Baltimore Community Foundation (BCF) and former Head of School of Concord Academy in Boston, Massachusetts. Mr. Wilcox started City Bridge in Boston, where students from the private Concord Academy taught public school students in Boston and Cambridge. In addition to BCF, the Morton K. and Jane Blaustein Foundation (MJBF) has been a primary supporter of the initiative.

The project itself grew out of a 2004 conference hosted by the BCF, MJBF and the Johns Hopkins Center for Summer Learning. Entitled "Forum on Summer Learning Opportunities in Independent Schools," the conference included local school teachers, administrators, development officers, trustees, foundation staffs, and interested community members who gathered to hear more than 20 representatives of public/independent school partnership programs from across the nation describe their programs and inspire those in Baltimore to plan their own partnership.

### Development and scope of MGP

As a result of the 2004 conference, public and independent school administrators and teachers began working together to identify a target population and develop the MGP's curricular goals. Project planners quickly settled on middle school students as a target audience, since the middle grades "are the last opportunity we have to transform kids' habits of mind," said Beth Drummond Casey, director of the Middle Grades Partnership. "At the end of the day, they are still children," which provides an academic advantage in terms of focus and development.

## The Middle Grades Partnership

**Where**:
Baltimore, Maryland

**Partner(s):**
Two foundations - the Baltimore Community Foundation and the Morton K. and Jane Blaustein Foundation - and several local private schools

**Challenge:**
Prepare middle school students who had experienced some academic success in urban public schools for rigorous high school and college-level work.

**Solution:**
The Baltimore Community Foundation led the exploration of a coordinated set of partnerships between local public and private schools. Working with foundation support, these partnerships would ascribe to a set of objectives and collaboratively pursue them through after school and summer programs.

**Partner Roles:**
Teachers and administrators at partnering public and private schools work together to set the course of instruction. After school programs, hosted at partnering public schools, focus on academics with an emphasis on reading and mathematics. Summer programs, hosted at partnering private schools, expand this academic focus with arts, athletics, and personal development.

**Outcomes:**
Evaluation of the Middle Grades Partnership is being conducted by Johns Hopkins University. Initial efforts focused on formative evaluation; current efforts are examining outcomes against comparable groups of students. Based on an analysis of initial data, students participating in the program are making noticeable advances in reading and math, and are being prepared for a rigorous course of study at the high school level.

As an overarching objective, they decided that students completing the program would be:

- Intuitive, flexible, and confident mathematical thinkers
- Insightful, fluent, and ardent readers
- Capable, straightforward, incisive writers

With these objectives in mind, twelve MGP sites were chosen and individual sites were given free reign to design their own program to meet the agreed-upon goals. After school programs focus heavily on academics; summer programs incorporate arts, athletics, and personal development into the mix. During the school-year, students participate in two after school sessions per week and at least four Saturday activities, all at a public school site. Summer programs, held on private school campuses, run for four or five weeks.

Program staff themselves develop the curriculum. Each site is self-managed, but all work toward the same goals. Individual partnerships will write a proposal for a grant that offers more than the curriculum. "We work closely with grantees," said Casey, which means that the partnership monitors ongoing projects and makes suggestions for adjustments as individual projects go forward.

Going into its fourth year, MGP graduates have completed Algebra I, written clear and convincing essays, and have developed a willingness to read for both pleasure and in their studies. Much attention has been focused on the program's focus on algebra and higher mathematics, and there is a reason it has become a key element of the program. "Algebra is a gateway course to higher education," Casey explains. Research shows that success in higher level math is a determinant of postsecondary graduation. But the program's other elements are just as important "Each individual project site reflects great thinking and an integrated curriculum," she added. "Academically the instruction looks and feels and acts un-school like."

**Evaluation**

Although an ongoing evaluation is being conducted in tandem with the project, preliminary district data

## A Note on Building Evaluation Models

Evaluation is an integral component of education reform efforts, and there is some controversy surrounding evaluation methods and outcomes. This controversy might best be summarized by conflicting statements provided by the American Evaluation Association on the Department of Education's adoption of randomized clinical trials as the "gold standard" for education evaluation.

Without getting into the middle of this controversy, the best way to demonstrate it and hopefully provide context for evaluation efforts concerning the MGP and other partnership-driven projects would be to highlight competing statements submitted as commentary on the Department's position.

> While we agree with the intent of ensuring that federally sponsored programs be "evaluated using scientifically based research . . . to determine the effectiveness of a project intervention," we do not agree that "evaluation methods using an experimental design are best for determining project effectiveness." We believe that the constraints in the proposed priority would deny use of other needed, proven, and scientifically credible evaluation methods, resulting in fruitless expenditures on some large contracts while leaving other public programs unevaluated entirely. Statement prepared by: Randall Davies, Ernest House, Cheri Levenson, Linda Mabry (chair), Sandra Mathison and Michael Scriven. This team received valuable assistance from: Lois-ellin Datta, Burt Perrin, Katherine Ryan, and Bob Williams.

An influential group of senior members of the American Evaluation Association opposed this AEA Statement, and did not feel they were appropriately consulted as active, long-term members of AEA. They provided the following opposition statement to the one above:

> . . . [W]e recognize that randomized trials are not feasible or ethical at times. In such circumstances, quasi-experimental or other designs may be appropriate alternatives, as the proposed priority allows. However, it has been possible to configure practical and ethical experimental designs in such complex and sensitive areas of study as pregnancy prevention programs, police handling of domestic violence, and prevention of substance abuse. It is similarly possible to design randomized trials or strong quasi-experiments to be ethical and feasible for many educational programs. In such cases, we believe the Secretary's proposed priority gives proper guidance for attaining high methodological standards and we believe the nation's children deserve to have educational programs of demonstrated effectiveness as determined by the most scientifically credible methods available. Signed by Leonard Bickman, Robert F. Boruch, Thomas D. Cook, David S. Cordray, Gary Henry, Mark W. Lipsey, Peter H. Rossi, and Lee Sechrest.

In this context, it is important to point out that there is a struggle among the education community on what constitutes effective evaluation and how specific programs are evaluated. The evaluation presentation in this study simply provides the approach being taken in this specific case.

**For more information, see:**

*www.wmich.edu/evalctr/jmde/content/JMDE%20Num%203_files/Webpages%20JMDE%20003/JMDE_003_Part_I.htm#_Toc116196689*

show marked improvement among students involved in the MGP. At this writing, data have been made available that show that test scores have improved among the target population of students. Scores for the Terra Nova composite test indicate participating students' ability to compete for entrance to the city's most academically rigorous high schools. The threshold score for consideration for entrance to these high schools is 610. "We've heard from two schools," Casey said. "One school has some composite scores in the 700s." Preliminary data for six of the ten schools show that a majority of students are competitive in mathematics and reading, key target areas for the program.

In addition to regular school district testing, the project includes an evaluation by Johns Hopkins. Dr. Clea McNeeley of Johns Hopkins University's Bloomburg School of Public Health explains that the evaluation process is advancing through a series of stages. "At first the evaluation component focused on fine tuning the activities of the MGP and the program has been doing this," she said. "This is best practice in terms of evaluation," said Dr. McNeeley. As the evaluation moves forward, it will look at programs and comparisons to like groups. "An outcome evaluation is very difficult without randomization," she said. What is exciting about MGP, they are really taking on the partnership aspect and trying to leverage partnerships to get the desired result, Dr. McNeeley states.

Kristin Mmari, Assistant Scientist at the Bloomberg School has been conducting interviews among students, parents, and staff to collect qualitative data on the project. "It's a phenomenal program," she said. "The program designers have invested a lot into the summer program and it's been life-changing for some of the students." Kids have found confidence in themselves and they have dreams now, she said. Students have told her "I want to be a biologist or they want to be an (CSI) investigator," Mmari said.

Dr. McNeeley and Dr. Mmari stress the unique aspects of the MGP. "Previous models involving private schools offered a hand out to public schools," said Mmari. "There really is a partnership here and there's a real give and take aspect to this." Both of them emphasized school leadership. "The project has successfully involved all their staff in both the private and public schools," Mmari said. This leads to a real commitment among the participants. In many projects, there's an "us and them" mentality, but the most successful partnerships are saying "we and us". The MGP is working on getting partners onto a true equal plane.

Organizations seeking to enter the education fray should keep in mind that there are many out there who are already engaged; Baltimore's Middle Grades Partnership is one such example. This project is multifaceted and certain aspects of it lend themselves to replication. Urban district areas have non-profits that are knowledgeable about the workings of their schools systems. There are private schools that may or may not be willing to collaborate on improving schools, and the private school/public school partnership model definitely serves as a model. Although there is controversy concerning evaluation, there are postsecondary institutions throughout the nation (also often found in urban areas) that can lend resources to reform efforts. A potential public/private education partnership needn't incorporate all the elements of the MGP to be successful or to have an effect.

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*Written by Tony Fowler of ToMolly and Friends.*

## Resource Links

The Middle Grades Partnership
www.middlegradespartnership.org

MGP Blog, maintained by two participating schools
www.mgpsummerscholars.blogspot.com

The Baltimore Community Foundation
www.bcf.org

Morton K. and Jane Blaustein Foundation
www.blaufund.org/foundations/mortonandjane_f.html


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primary areas in which we work. We're tackling the issue head-on, but we're also working on disseminating information on this issue in several venues, trying to reach a number of audiences. We're reaching out to teachers and principals, other industries, parents, students, and others. For us it's really important to share this information, let people know what the issues are, why they're important, and what can be done, and talk more about what we all need to do to address them.

**KPR:** *Looking at your survey there's clearly a gap between what Fortune 1000 executives want to see in terms of workforce preparedness and what they're seeing. Have you asked them why there's a gap, and how it can be fixed?*

**Lucore:** We didn't specifically ask those questions in the survey, but what we find from our experiences, in terms of how to fix that, are a few things.

First, you need to start early. We start in elementary school, sometimes as early as kindergarten in some cases, with some of these hands-on, inquiry-based curricula. Kids are born curious. They ask so many questions, and they want to know everything, and that's what science is all about: wondering and asking. And sometimes in school we actually shut that down, discouraging them from asking questions. We need to engage them early and encourage them to ask those questions.

Beyond that, we need to start looking at what are our industry needs. So let's take a student from early on, in elementary school, and map out what we think this student needs from their first step in the door to school to graduating and entering the workforce, perhaps at a company like ours. And let's establish initiatives that are appropriate at each step along that path.

At Bayer for example, we're engaged at a lot of different levels. We start at the elementary level with some science education programs. We working with high schools, through programs like that from the American Chemical Society, and getting high school students engaged in after school programs, through projects, or in internships with industry. Then our foundation is active at the university level, by starting Bayer Fellows at schools to give students experience and exposure to industry and even provide global experiences, which are also very important.

## Challenges and Rewards of Partnering - For Education Partners

*Reprinted with permission from Bayer's 2006 Forum Highlights Report*

**Challenges**

- Garnering the critical mass of support from business and industry to move from the "discussion phase" to actually making the commitment and staying the course on core programs for the long-term, which can sometimes mean a decade or longer.
- Helping business partners understand the kind of commitment they must make to an education organization that is trying to bring about the kind of radical change involved in standards- and research-based teaching and learning.
- Convincing companies to avoid the "curriculum du jour" trap and instead support standards- and research-based education programs that have a track record, even when these programs may already have the support of other corporate partners.
- Articulating at the outset the outcomes both partners expect and how they will benchmark those outcomes and measure success.
- Identifying the win-win for both parties when the cultures are so different. Business is looking for a better-prepared workforce as one of its outcomes. Yet, the timeframe between when a company invests its money at the elementary school level and when that future workforce becomes mature is quite long.
- Finding common ground and developing mutual respect when the partnership involves scientists/engineers working with teachers, particularly when teachers, who may not be as well-versed as the scientists/engineers in content areas, see themselves as "just teachers."

**Rewards**

Partnering with business brings a while new level of resources to the table, helping them enhance their programs while overcoming barriers at the school and district level. These include:

- STEM expertise. Professional scientists/engineers can help develop curriculum; work with teachers and students in the science classroom on curriculum implementation, experiments and lab work; and serve as mentors, informal career counselors and science fair judges.
- Financial resources. Particularly unrestricted grants, which allow for operational flexibility. The corporate funding may come from either the business or philanthropic side of the company.
- Human resources. Apart from their scientists/engineers, companies employ professionals with wide-ranging business expertise whose ideas and insights can benefit education partners, such as facilities engineers who can set up materials systems; marketing and public relations professionals who can assist with fundraising and awareness; and corporate executives who can sit on boards of directors or advisory boards and consult on a broad range of issues.
- Political clout. No other sector has the potential to influence this nation's education system more than business and industry at the local, state and national levels.

See Bayer's *2006 Forum Highlights Report* at www.bayerus.com/MSMS/MSMS_News/MSMS_News_Home.aspx.

But again, we see each of these programs as part of a continuum, mapping the path that takes them from start to finish and meet the needs of the student all along the way.

**KPR:** *Diversity is a primary focus of this survey – why is diversity an important issue to Bayer in STEM education?*

**Lucore:** Diversity is one of our largest focus areas now – we see the growth of a diverse STEM workforce as critically important to our competitiveness. In terms of K12 education, you have to go back to the issue that American students are generally not pursuing STEM careers, and we have a diminishing workforce. Then realize that women and other minorities now make up two-thirds of the existing US workforce, and the minority population is growing. And those workers are historically underrepresented in the STEM fields. So there's a huge untapped group of people there that we need to reach and attract to STEM careers. We need to let them know what kinds of opportunities are available to them and how to become prepared and to succeed in these careers.

We're starting to do a lot in this area, launching a number of partnerships and programs to address this issue. This is the reason we held our December forum, as well as the one in 2006 – to show everyone, including industry and other funders who want to get involved in this issue, that there are programs that already exist and are doing a fantastic job of reaching those audiences and helping them to succeed in these careers. It's important to let these industry partners know that they don't necessarily need to reinvent the wheel – there are a lot of good programs that already exist, that can be replicated or grow with their support.

**KPR:** *In your survey, you asked respondents whether their companies were active in K12 education, and many of them said yes. Do you have a sense as to how they're involved?*

**Lucore:** There's a whole array of projects out there. There are programs integrated into instruction as part of students' curricula; there are after school programs; there are internship and scholarship programs wrapped into various courses of study; and there are many other models in place. We're very careful in our work, such as our best practices guides and conferences, to highlight a wide range of program models. Because when we go back to the idea of mapping a student's path from beginning to end, there are so many different ways to reach a student: it can take different forms, and it doesn't all have to be through the classroom. The classroom is a good place to start, but there are other venues as well.

**KPR:** *What should the next step be for companies working in this area?*

**Lucore:** So much of this lies with industry – it really is our job to step up and support improvement and reform initiatives. We're the end users of the educational system. We need to look at the mismatch between the skills we need in employees and what we're currently seeing, and figure out what we can do to help students get what they need to be prepared for the opportunities available to them.

**KPR:** *Over the past 13 years of conducting this survey, what have you learned about STEM education?*

**Lucore:** We have talked to so many different stakeholder audiences in the past several years. In addition to this year's survey of Fortune 1000 executives, we've surveyed parents, principals, teachers, students, the general public, Ph.D. scientists, and HR executives and managers. We surveyed governors one year on the impact that education would play in an upcoming election. We've talked to almost every group we could talk to about various issues in STEM education.

Talking with students, for example, we looked at their favorite ways, and the most effective ways, to learn science. We've asked teachers things like, how scary is it for you to teach science? We found from teachers that a lot of them are afraid to say, 'I don't know.' And sometimes they don't know the answers – no one knows the answer to everything. Same with parents – they can be afraid to say to their children 'I don't know,' instead of

## About *Making Science Make Sense*

Driven by an interest in having a strong STEM workforce and a scientifically literate country, Bayer pursues the following activities through its *Making Science Make Sense* program:

- **Hands-on work with teachers and students** - Bayer has more than 1,000 employee volunteers working with teachers and students in classrooms and informal learning programs across the country.
- **Community-wide reform initiatives** - the company is spearheading science education reform programs in seven markets, including Pittsburgh (PA), Elkhart (IN), and West Haven (CT).
- **National science literacy campaign** - led by astronaut Dr. Mae C. Jemison, this campaign includes experiment guides, an instructional audio series, a high school film competition, and the *Bayer Facts of Science Education* surveys.
- **Best practices research** - Bayer has held national forums to showcase successful STEM partnership initiatives, and has published two resource guides that provide business leaders and others with information on these programs along with practical advice for how they can support and/or replicate such programs in their local communities.

For more information about *Making Science Make Sense* or to subscribe to the *Making Science Make Sense* E-News Update, visit www.BayerUS.com/MSMS.

saying 'I'm not sure, but let's look it up together."

So we've gather a lot of interesting data, and I think it all fits together in different ways. We've put together a white paper that looks at the responses of these different groups. We're finding a lot of connections, such as how students want to learn science in a particular way, but teachers aren't necessarily prepared to teach in those ways. So we've been able to highlight some disconnects, and spent some time focused on programs that can help to address those issues.

These surveys have really formed the platform for the whole MSMS program. We want to make sure that we're on the right track in what we're doing, so we go out there and pinpoint these issues and see what the discrepancies are, which allows us to focus on the right things in our work.

**KPR:** *For a school or district, it can be difficult to know where to start in developing a relationship with a large company like Bayer. What advice do you have for school and district leaders in finding the right contacts?*

**Lucore:** That's a tough one, because unfortunately at every company it's different. For one company it might be through human resources, for another it might be community relations, for another it may be through an executive with an interest in education... Really, the best answer is the simplest: go on the company's web site to see if they have a program around science or STEM education like we do, and often times you can find contact information through the site. Another option is to find the local number for the company, call and tell them what you're looking for; they should be able to direct you to the right people. I wish there was a better answer, but because it does seem to be so different from company to company, this kind of direct inquiry is really the best way.

**KPR:** *Once you find the right contact, what should schools and districts focus on in order to build a strong and sustainable partnership?*

**Lucore:** For schools and districts, you need to start by looking at your objectives and all the ways in which you're trying to achieve those objectives. It could be in the classroom, it could be through after school or extracurricular programs, or through other partnerships, such as with science museums and others. Corporate partners will engage in different ways: some, like Bayer, will not provide funding to school districts, but may support programs outside the classroom or programs that go into schools, or may provide volunteers or other nonfinancial support. So approach them within the full spectrum of your efforts and look for areas of common interest and for opportunities that fit with their outreach model.

## Selected Responses from the 2008 *Bayer Facts of Science Education* Survey

*All responses from Fortune 1000 executives at STEM-focused firms*

**Question:** How concerned are you that your company will be able to attract and retain the scientific and technically trained employees you need in the United States to remain competitive in the global marketplace?

- Very concerned: 31%
- Somewhat concerned: 51%
- Not too concerned: 16%
- Not at all concerned: 2%

**Question:** How good a job do you think the U.S. pre-college, or K through 12, education system does in engaging and nurturing girls and minorities to pursue STEM careers?

- A: 0%
- B: 9%
- C: 34%
- D: 41%
- F: 14%
- Don't know: 2%

**Question:** Do you believe STEM companies have a role to play in ensuring that women and minorities succeed in science and engineering fields?

- Yes, have a role to play: 97%
- No, don't have a role to play: 2%
- Don't know: 1%

**Question:** How important is it for STEM companies to support pre-college science education programs that help create the next generation of inventors, innovators and discoverers?

- Very important: 66%
- Somewhat important: 32%
- Not too important: 2%
- Don't know: 0%

**Question:** Do agree or disagree with the following statement: "Direct contact with scientists and engineers is an effective way to help students better appreciate careers in science and engineering?

- Agree: 96%
- Disagree: 1%
- Don't know: 3%

**Question:** Some STEM companies support pre-college education programs that attract, encourage and sustain girls' and minority students' interest in math and science in school. Does your company or do any of your employees participate in programs such as these?

- Yes: 87%
- No: 17%
- Don't know: 6%

**Question:** In a recent survey, U.S. parents said it is very important for today's STEM companies to communicate the message to today's students that there are significant opportunities for them in STEM fields. Does your company effectively communicate this to today's students?

- Yes: 54%
- No: 40%
- Don't know, or N/A: 6%

# The KPR Guide to Federal Science Education Programs

*K12 Partnership Report* is pleased to present this directory of science education programs managed by various federal agencies. Programs listed here include traditional grant programs, scholarships and fellowships, programs provided in cooperation with other entities, and much more. This list is extensive, but not exhaustive; if you are aware of programs that should be on this list, please let us know so that we can run updates in future issues.

## Department of Agriculture

| Office | Program/Name | Website |
|---|---|---|
| ADMIN | USDA/1890 National Scholars Program | http://1890Scholars.program.usda.gov |
| CSREES | International Science and Education Competitive Grants Program | http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1240 |
| CSREES | Alaska Native-Serving and Native Hawaiian-Serving Insititutions Education Grants Program | http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1064 |
| CSREES | 1890 Institutions Teaching and Research Capacity Building Grants Program | http://www.csrees.usda.gov/fo/1890capacity.cfm |
| CSREES | 4-H Youth Development | http://www.csrees.usda.gov/youthdevelopment4h.cfm |
| CSREES | Ag in the Classroom | http://www.agclassroom.org/ |
| CSREES | Food and Agricultural Sciences National Needs Graduate and Postgraduate Fellowships Grants Program | http://www.csrees.usda.gov/funding/rfas/national_needs.html |
| CSREES | Higher Education Challenge Grants Program | http://www.reeusda.gov/1700/funding/rfahec.htm |
| CSREES | Higher Education Multicultural Scholars Program | http://www.csrees.usda.gov/fo/multiculturalscholarshep.cfm |
| CSREES | Hispanic-Serving Institutions Education Grants Program | http://www.reeusda.gov/1700/funding/rfahsi03.htm |
| CSREES | National Research Initiative (NRI): Postdoc Program | http://www.reeusda.gov/nri/ |
| CSREES | Secondary and Two-Year Postsecondary Agriculture Education Challenge Grants Program (SPEC) | http://www.csrees.usda.gov/fo/educationchallengesecondaryhep.cfm |
| CSREES | Tribal Colleges Education Equity Grants Program | http://www.csrees.usda.gov/fo/tribalcollegeseducationtceg.cfm |
| CSREES | Tribal Colleges Endowment Fund | http://www.reeusda.gov/serd/hep/progdes.htm |
| CSREES | Tribal Colleges Research Program | http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1133 |
| Various | Career Intern Program | http://www.usda.gov/da/employ/CareerInternWebSite.htm |

## Department of Commerce

| Office | Program/Name | Website |
|---|---|---|
| NOAA | Chesapeake Bay Watershed Education and Training | http://noaa.chesapeakebay.net/ |
| NOAA | Coral Reef Conservation Program | http://www.nmfs.noaa.gov/habitat/ead/fundingopps.htm |
| NOAA | Estuary Live | http://www.estuaries.gov/welcome.html |
| NOAA | High School/High Tech | http://www.noaa.gov/ |
| NOAA | Marine Sanctuary Program | http://www.sanctuaries.nos.noaa.gov |
| NOAA | Monterey Bay Watershed Education and Training Program | http://sanctuaries.noaa.gov/news/bwet/welcome.html |
| NOAA | Sea Grant College Program | http:///www.noaa.gov |
| NTIA | Public Telecommunications Facilities Program (PTFP) | http://www.ntia.doc.gov/ptfp/attachments/FFO_Notice_06.htm |

## Department of Defense

| Office | Program/Name | Website |
|---|---|---|
| Am. Society for Science and Engineering | National Defense Science and Engineering Graduate Fellowship | https://www.asee.org/ndseg/ |
| Fleet Training Center | Starbase-Atlantis, San Diego | https://wwwcfs.cnet.navy.mil/naswf/starbaseAtlantis/welcome.cfm |

# The KPR Guide to Federal Science Education Programs - continued

## Department of Defense

| Office | Program/Name | Website |
|---|---|---|
| Marine Corps | Starbase, Inc. | http://www.defenselink.mil/ra/html/starbase.html |
| National Defense University | National Security Education Program | nsepo@ndu.edu |
| National INFOSEC Education and Training Program Office | Information Assurance Scholarship Program (IASP) | http://www.defenselink.mil/cio-nii/iasp/index.html |
| Navy Fleet Training Center | Starbase-Atlantis, Norfolk | https://www.npdc.navy.mil/starbase.norfolk/index.html |
| Program Director, NC A&T State University | Historically Black Colleges and Universities (HBCU) Future Engineering Faculty Fellowship Program | http://www.onr.navy.mil/sci_tech/3t/corporate/hbec.asp |
| The National Science Center-Army | National Science Center Education Outreach | www.NationalScienceCenter.org |
| U.S. Navy, CNET Code OOKA | Starbase-Atlantis, Pensacola | https://www.cnet.navy.mil/comunity/starbase/sa.html |
| US Navy | US Naval Academy - Academic Program | http://www.usna.edu |

## Department of Energy

| Office | Program/Name | Website |
|---|---|---|
| Brookhaven National Laboratory | Science Undergraduate Laboratory Internship (SULI) | http://www.bnl.gov/education/programs/suli.asp |
| DOE CSGF Program Coordinator | Computational Science Graduate Fellowship | http://www.krellinst.org/csgf/index.shtml |
| Fermilab Education | Quarknet | http://quarknet.fnal.gov/ |
| Nuclear Regulatory Commission | Cooperative Education Program | http://www.nrc.gov/who-we-are/employment/student-prog.html |
| Oak Ridge Institute for Science & Education | Global Change Education Program | http://www.atmos.anl.gov/GCEP/ |
| Office of Fusion Energy | Fusion Energy Sciences Fellowship Program | http://www.orau.gov/fusion |
| Office of Fusion Energy Sciences | Fusion Energy Postdoctoral Research Program | http://see.orau.org/ProgramDescription.aspx?Program=10093 |
| Office of Science | Albert Einstein Distinguished Educators Fellowship Program | http://www.scied.science.doe.gov/scied/Einstein/about.htm |
| Office of Science | Community College Institute for Science and Technology (CCI) | http://www.scied.science.doe.gov/scied/CCI/about.html |
| Office of Science | Faculty and Student Teams | http://www.scied.science.doe.gov/scied/fast/contacts.htm |
| Office of Science | Laboratory Science Teacher Professional Development | http://www.nrel.gov/education/lstpd.html |
| Office of Science | National Science Bowl | http://www.scied.science.doe.gov/nsb/index.html |
| Office of Science | Pre-Service Teacher Program | http://www.scied.science.doe.gov/scied/PST/about.htm |
| Office of Science | Used Energy-Related Laboratory Equipment (ERLE) | http://erle.osti.gov/erle/ |
| Science Education Program | National Undergraduate Fellowship Program in Plasma Physics and Fusion Energy | http://science-education.pppl.gov/Nuf/Index.html |

## Department of Health and Human Services

| Office | Program/Name | Website |
|---|---|---|
| Administration on Developmental Disabilities | University Centers for Excellence | http://www.hhs.gov/grantsforecast/cfda/health/program/acf22.html |
| CDC Public Health Practice Program Office/DMTS | CDC-Sponsored Self-Study Courses | WWW.CDC.GOV/PHTN |
| CDC Division of Adolescent and School Health | Coordinated School Health Education Programs | http://www.cdc.gov/HealthyYouth/partners/funded/cshp.htm |
| Division of Intramural Research/ National Institute of Nursing Research | Summer Genetics Institute | http://www.ninr.nih.gov/Training/TrainingOpportunitiesIntramural/ SummerGeneticsInstitute/ |
| Health Resources and Services Administration | Faculty Loan Repayment Program | http://bhpr.hrsa.gov/dsa/flrp/applicationkit.htm |
| Health Resources and Services Administration | Scholarships for Disadvantaged Students Program | http://bhpr.hrsa.gov/dsa/sds.htm |

# The KPR Guide to Federal Science Education Programs - continued

## Department of Health and Human Services

| Office | Program/Name | Website |
|---|---|---|
| Health Resources and Services Administration, Division of Health Professions Diversity | Centers of Excellence | http://bhpr.hrsa.gov/dhpd/contact.htm |
| Health Resources and Services Administration, Division of Health Professions Diversity | Health Careers Opportunity Program | http://bhpr.hrsa.gov/diversity/hcop/default.htm |
| Health Resources and Services Administration, Bureau of Health Professions Area Health Education Centers Branch, DICP | Health Education and Training Centers (HETC) | http://aspe.hhs.gov/selfGovernance/inventory/Hrsa/189.htm |
| HRSA Bureau of Health Professions | Nursing Workforce Diversity | http://bhpr.hrsa.gov/KIDSCAREERS/nursing_workforce.htm |
| Indian Health Service | Health Professions Pregraduate Scholarship Program Section 103(b)(2) | http://www.ihs.gov/JobsCareerDevelop/DHPS/Scholarships/index.html |
| Indian Health Service | Health Professions Scholarship Program Section 104 | http://www.ihs.gov/jobscareerdevelop/DHPS/scholarships/section_104.asp |
| Indian Health Service | Indian Health Service Scholarship Program Section 103(b)(1) | http://www.ihs.gov/JobsCareerDevelop/DHPS/Scholarships/Scholarship_index.asp |
| National Institute of General Medical Sciences | Initiative for Minority Student Development (IMSD) | http://grants2.nih.gov/grants/guide/pa-files/PAR-06-553.html |
| National Institute of General Medical Sciences | Minority Access to Research Careers | http://www.nigms.nih.gov/Minority/MARC/MARCDescription.htm |
| National Institutes of Health | AIDS Research Loan Repayment Program | http://www.lrp.nih.gov |
| National Institutes of Health | CCR/JHU Master of Science in Biotechnogy Concentration in Molecular Targets and Drug Discovery Technologies | http://www.jhu.edu/advanced/ |
| National Institutes of Health | Clinical Pharmacology Research Associate Training Program | http://www.nigms.nih.gov/Training/InstPostdoc/PostdocOverview-ClinPharm.htm |
| National Institutes of Health | Clinical Research Loan Repayment Program for Individuals from Disadvantaged Backgrounds | http://www.lrp.nih.gov./about/intramural/index.htm |
| National Institutes of Health | Clinical Research Training Program | http://www.cc.nih.gov/training/crtp/crtp.html |
| National Institutes of Health | Comparative Molecular Pathology Graduate Partnership Training Program | http://gpp.nih.gov/Prospective/InstitutionalPartnerships/MolecularPathology/ |
| National Institutes of Health | Comparative Molecular Pathology Research Training Program | http://ccr.nci.nih.gov/resources/training/home.asp |
| National Institutes of Health | Curriculum Supplement Series | http://science.education.nih.gov/supplements/ |
| National Institutes of Health | Extramural Clinical Research Loan Repayment Program for Individuals from Disadvantaged Backgrounds | http://www.lrp.nih.gov/ |
| National Institutes of Health | Fellows Award for Research Excellence (FARE) | http://felcom.nih.gov/FARE |
| National Institutes of Health | Genetic Epidemiology Branch Fellowships | http://dceg.cancer.gov/geb/fellowships/offer |
| National Institutes of Health | Graduate Program Partnerships | http://gpp.nih.gov/ |
| National Institutes of Health | Health Communications Internship program | http://internship.cancer.gov/contact.cfm |
| National Institutes of Health | Health Disparities Research Loan Repayment Program | http://grants.nih.gov/grants/guide/pa-files/PAR-06-515.html |
| National Institutes of Health | Intramural NIAID Research Opportunities | http://www3.niaid.nih.gov/labs/training/inro/programDescription.htm |
| National Institutes of Health | Loan Repayment for Contraception and Infertility Researchers | http://www.lrp.nih.gov/about/lrp-contra.htm |
| National Institutes of Health | National Institute of Environmental Health Sciences Office of Fellows' Career Training Opportunities | http://www.niehs.nih.gov/careers/research/fellows/ |
| National Institutes of Health | NCRR Science Education Partnership Award | http://grants2.nih.gov/grants/guide/pa-files/PAR-06-080.html |
| National Institutes of Health | NIH Academy | http://www.training.nih.gov/onlineApps/afpi/application/MainAcademy.asp |
| National Institutes of Health | NIH/National Institute of Standards and Technology Joint Postdoctoral Program | http://www.nationalacademies.org/pga |
| National Institutes of Health | NIMH Career Opportunities in Research Education and Training (COR) Honors Undergraduate Research Training Grant | http://grants2.nih.gov/grants/guide/pa-files/par-01-008.html |
| National Institutes of Health | Office of Research on Women's Health-funded Programs Supplements to Promote Reentry into Biomedical and Behavioral Research Careers | http://grants2.nih.gov/grants/guide/pa-files/PA-04-126.html |
| National Institutes of Health | Postbaccalaureate Intramural Research Training Award (IRTA) | http://www.training.nih.gov/student/Pre-IRTA/previewpostbac.asp |

# The KPR Guide to Federal Science Education Programs - continued

## Department of Health and Human Services

| Office | Program/Name | Website |
|---|---|---|
| National Institutes of Health | Research Supplements to Promote Diversity in Health-Related Research | http://www.nigms.nih.gov/Research/Mechanisms/PromoteDiversity.htm |
| National Institutes of Health | Ruth L. Kirschstein National Research Service Award Short-term Institutional Research Training | http://grants.nih.gov/grants/guide/pa-files/PA-05-117.html |
| National Institutes of Health | Ruth L. Kirschstein National Research Service Awards for Individual Predoctoral Fellows | http://grants2.nih.gov/grants/guide/pa-files/PA-04-032.html |
| National Institutes of Health | Ruth L. Kirschstein National Research Service Awards for Individual Predoctoral MD/PhD Fellows (F30) | http://grants.nih.gov/grants/guide/pa-files/PA-07-002.html |
| National Institutes of Health | Ruth L. Kirschstein National Research Service Awards for Individual Postdoctoral Fellows (F32) | http://grants.nih.gov/grants/guide/pa-files/PA-06-373.html |
| National Institutes of Health | Sallie Rosen Kaplan Fellowship for Women in Basic, Clinical, Epidemiological or Prevention Science | http://www.training.nih.gov/apps/publicForms/postdoctoral/forms/adIndex.aspx |
| National Institutes of Health | Science Education Drug Abuse Partnership Award | http://grants2.nih.gov/grants/guide/pa-files/PA-02-070.html |
| National Institutes of Health | Summer Institute for Social Work Research | http://obssr.od.nih.gov/conf_wkshp/sw/ |
| National Institutes of Health | Summer Institute for Training in Biostatistics | http://www.nhlbi.nih.gov/funding/training/redbook/sibsweb.htm |
| National Institutes of Health | Technical Intramural Research Training Award | http://www.genome.gov/12011106 |
| National Institutes of Health | Undergraduate Scholarship Program for Individuals from Disadvantaged Backgrounds | http://ugsp.info.nih.gov |
| National Institutes of Health | University Medical Informatics Research Training Programs Supported | http://www.nlm.nih.gov/ep/GrantTrainInstitute.html |
| National Institutes of Health Loan Repayment Programs | Pediatric Research Loan Repayment Program | http://www.lrp.nih.gov/about/lrp-pediatric.htm |

## Department of Homeland Security

| Office | Program/Name | Website |
|---|---|---|
| Science and Technology Directorate | Scholars and Fellows Program | http://www.orau.gov/dhsed/ |

## Department of Interior

| Office | Program/Name | Website |
|---|---|---|
| Bureau of Land Management | Project Archaeology Program | http://www.blm.gov/heritage/project_archaeology.htm |
| Bureau of Land Management, Environmental Education & Volunteers Group | Project Learning Tree (PLT) | http://www.blm.gov/education/LearningLandscapes/teachers/plt.html |
| Bureau of Reclamation | Project WET (Water Education for Teachers) | http://www.projectwet.org/ |
| Minerals Management Service | The National Energy Educational Development Project | http://www.need.org/pgesolarschools/big.htm |
| National Park Service | National Parks Institutes | http://www.nps.gov/learn/institutes.htm |
| National Park Service | Parks as Classrooms | http://216.167.117.204/national_website//overview.cfm |
| National Park Service | Research Learning Centers | http://www.nature.nps.gov/learningcenters/ |
| National Park Service | Youth Conservation Corps | http://www.nps.gov/youthprograms/ycc.htm |
| Office of Educational Partnerships | BLM Learning Landscapes | http://www.blm.gov/education/LearningLandscapes/index.html |
| Office of Educational Partnerships | DOI Diversity Intern Program | http://www.doi.gov/hrm/dipprogram.html |
| Office of Educational Partnerships | Student Educational Employment Program | http://www.usgs.gov/ohr/student/benefit/seep.html |
| Office of Surface Mining | Summer Watershed Internship Program | http://www.osm.gov/acsi/internindex.htm |
| U.S. Fish and Wildlife Service | Aquatic Resources Education Program | http://wsfrprograms.fws.gov/Subpages/GrantPrograms/AquaticEd/AE.htm |
| U.S. Fish and Wildlife Service | Earth Stewards | http://www.fws.gov |

# The KPR Guide to Federal Science Education Programs - continued

## Department of Interior

| Office | Program/Name | Website |
|---|---|---|
| U.S. Fish and Wildlife Service | Refuge Education Materials | http://www.fws.gov/ |
| U.S. Fish and Wildlife Service | Schoolyard Habitat Program | http://www.fws.gov/chesapeakebay/schoolyd.htm |
| U.S. Fish and Wildlife Service | Shorebird Sisters Program | http://66.241.214.202/ |
| U.S. Fish and Wildlife Service | Suitcase for Survival | http://www.fws.gov/midwest/IllinoisRiver/trunks.html |
| U.S. Geological Survey | Cooperative Research Units | http://www.coopunits.org/app;jsessionid=apa3cttro9aoo?path=0 |
| U.S. Geological Survey | EDMAP -- University Geologic Mapping Component | http://ncgmp.usgs.gov/ncgmpabout/edmap |
| U.S. Geological Survey | U.S. Geological Survey Mendenhall Postdoctoral Research Fellowship Program | http://geology.usgs.gov/postdoc/ |
| U.S. Geological Survey | Water Resources Research Act Program | http://water.usgs.gov/wrri/mission.html |
| U.S. Geological Survey | Water Resources Research Units Act Program | http://water.usgs.gov/wrri/institutes.html |
| Various | Student Career Experience Program | http://www.blm.gov/wo/st/en/res/blm_jobs/national_recruitment1/internship_opportunities0.html |

## Department of Labor

| Office | Program/Name | Website |
|---|---|---|
| Office of Adult Services, Disabilities Employment and Initiatives Unit | Information Technology Initiative for Individuals with Disabilities | http://www.doleta.gov/sga/sga/01-107sga.cfm |
| Office of Apprenticeship Training, Employer, and Labor Services, Bureau of Apprenticeship & Training | Apprenticeship Training, Employer and Labor Services | http://www.doleta.gov/etainfo/NtlPgm/ATELS.cfm |
| Office of Policy and Research | H-1B Technical Skills Training Grants | http://www.doleta.gov/SGA/sga/02-102sga.cfm |
| Office of Policy and Research | Pilots, Demonstrations, and Research Projects | http://www.doleta.gov |
| Office of the 21st Century Workforce | Advanced Distributed Learning Initiative | http://www.adlnet.org/ |

## Department of Transportation

| Office | Program/Name | Website |
|---|---|---|
| Federal Highway Administration | Eisenhower Transportation Fellowship Program | http://www.fhwa.dot.gov/opd/universitygrants.htm |
| Federal Highway Administration | National Summer Transportation Institutes | http://www.nrc.scsu.edu/ |
| Federal Highway Administration | The Summer Transportation Internship Program for Diverse Groups (STIPDG) | http://www.fhwa.dot.gov/education/stipdg.htm |
| Research & Innovative Technology Administration | DOT's University Transportation Centers Program | http://utc.dot.gov/ |

## Environmental Protection Agency

| Office | Program/Name | Website |
|---|---|---|
| Bio Pesticides and Pollution Prevention staff | Integrated Pest Management (IPM) in Schools | http://www.epa.gov/pesticides/ipm/ |
| Office of Atmospheric Programs | Sunwise School Program | http://www.epa.gov/sunwise/ |
| Office of Environmental Education (OEE) | National Environmental Education Program | http://www.epa.gov/Education/grants.html |
| Office of Radiation and Indoor Air | Indoor Air Quality (IAQ) Tools for Schools | http://www.epa.gov/iaq/schools/index.html |
| Office of Water | Adopt Your Watershed | http://www.epa.gov/adopt/ |

# The KPR Guide to Federal Science Education Programs - continued

## National Aeronautics and Space Administration

| Office | Program/Name | Website |
|---|---|---|
| Education Division | NASA Explorer School (NES) | http://explorerschools.nasa.gov |
| Education Office | Educator Astronauts Program | www.edspace.nasa.gov |
| Elementary and Secondary Education | Elementary and Secondary Education | http://www.education.nasa.gov/divisions/eleandsec/overview/index.html |
| Headquarters | Minority University Research Education Program | http://www.nasa.gov/audience/foreducators/MUREP.html |
| Informal Education | Informal Education | http://education.nasa.gov/divisions/informal/overview/ |
| NASA | Higher Education | http://www.education.nasa.gov/divisions/higher/overview/index.html |
| Office of Education | Learning Technologies Project | http://learn.arc.nasa.gov/pds/FY03/LTP-RFP.doc |
| Office of Education | Support for Systemic Improvement of Education | http://www.education.nasa.gov |

## National Science Foundation

| Office | Program/Name | Website |
|---|---|---|
| Cultural Anthropology Program | Cultural Anthropology Program | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5388&org=NSF&sel_org=NSF&from=fund |
| Directorate for Biological Sciences | Minority Postdoctoral Research Fellowships and Supporting Activities | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13454&org=NSF&sel_org=NSF&from=fund |
| Directorate for Education & Human Resources | Centers of Research Excellence in Science and Technology | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=6668&org=NSF&from=fund |
| Directorate for Education & Human Resources | Math and Science Partnership Program | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5756&org=NSF |
| Directorate for Education & Human Resources | Nanoscale Science and Engineering Education | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=6669&org=NSF |
| Directorate for Education & Human Resources | Tribal Colleges and Universities Program | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5483&org=NSF&from=fund |
| Directorate for Education and Human Resources | NSF Director's Award for Distinguished Teaching Scholars | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=8170&org=NSF&sel_org=NSF&from=fund |
| Directorate for Education and Human Resources | Robert Noyce Scholarship Program | http://www.nsf.gov/pubs/2005/nsf05528/nsf05528.htm |
| Directorate for Education and Human Resources | Teacher Professional Continuum (TPC) | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=12785&org=DUE&from=home |
| Directorate for Engineering | Bridges for Engineering Education (BEE) | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5461 |
| Directorate for Engineering | Grants for the Department-Level Reform of Undergraduate Engineering Education | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5462&org=NSF |
| Directorate for Engineering | Research Experiences for Teachers | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5736&from=fund |
| Directorate for Geosciences | Centers for Ocean Science Education Excellence (COSEE) | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5511 |
| Directorate for Geosciences | Geoscience Education (GeoEd) | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5505&org=NSF&sel_org=NSF&from=fund |
| Directorate for Geosciences | Opportunities for Enhancing Diversity in the Geosciences (OEDG) | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=12726&org=NSF&sel_org=NSF&from=fund |
| Directorate for Mathematical and Physical Sciences | Astronomy and Astrophysics Postdoctoral Fellowships (AAPF) | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5291&org=NSF&sel_org=NSF&from=fund |
| Directorate for Mathematical and Physical Sciences | Discovery Corps Fellowships (DCF) | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=6676&org=NSF&sel_org=NSF&from=fund |
| Directorate for Mathematical and Physical Sciences | Enhancing the Mathematical Sciences Workforce in the 21st Century | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5732 |
| Directorate for Mathematical and Physical Sciences | Pan-American Advanced Studies Institutes Program (PASI) | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5327&org=NSF&sel_org=NSF&from=fund |
| Directorate for the Geosciences | Geoscience Education (GeoED) | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5505&org=NSF&sel_org=NSF&from=fund |
| Division of Biological Infrastructure | Minority Postdoctoral Research Fellowships in Biological, Social, Behavioral, and Economic Sciences | http://www.nsf.gov/pubs/2004/nsf0442/nsf0442_1.pdf |

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## National Science Foundation

| Office | Program/Name | Website |
|---|---|---|
| Division of Biological Infrastructure | Postdoctoral Research Fellowships in Biological Informatics | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=12720&org=NSF&from=fund |
| Division of Elementary Secondary & Informal Education | Innovative Technology Experiences for Students and Teachers | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5467&org=NSF&from=fund |
| Division of Engineering Education and Centers | Engineering Education Programs | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13540&org=NSF |
| Division of Graduate Education (DGE) | Graduate Research Fellowships (GRF) | www.ehr.nsf.gov/ehr/dge/grf.htm |
| Division of Graduate Education (DGE) | Graduate Teaching Fellows in K-12 Education | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5472 |
| Division of Graduate Education (DGE) | Integrative Graduate Education and Research Training (IGERT) | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=12759&from=fund |
| Division of Human Resource Development | Alliances for Graduate Education and the Professoriate (AGEP) | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5474&org=NSF |
| Division of Human Resource Development | Historically Black Colleges and Universities (HBCU) Undergraduate Program | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5476 |
| Division of Human Resource Development | Louis Stokes Alliances for Minority Participation (LSAMP) | www.ehr.nsf.gov/ehr/hrd/amp.asp |
| Division of Human Resource Development | Research in Disabilities Education (RDE | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5482&org=NSF&from=fund |
| Division of Human Resource Development | Research on Gender in Science and Engineering (GSE) | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5475&org=NSF&from=fund |
| Division of Human Resources Development | Presidential Awards for Excellence in Science, Mathematics, and Engineering Mentoring | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5473&org=NSF&sel_org=NSF&from=fund |
| Division of International Programs | International Research Fellowship Program | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5179&org=NSF&sel_org=NSF&from=fund |
| Division of International Programs | Japan Society for the Promotion of Science Postdoctoral Awards for U.S. Researchers | http://www.jsps.go.jp/english/index.html |
| Division of Mathematical Sciences | Mathematical Sciences Postdoctoral Research Fellowships (with Research Instructorship Option) | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5301&org=NSF&sel_org=NSF&from=fund |
| Division of Research, Evaluation & Communication | Research on Learning and Education (ROLE) | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5485&org=NSF |
| Division of Undergraduate Education | Advanced Technological Education (ATE) | www.ehr.nsf.gov/ehr/due/programs/ate |
| Division of Undergraduate Education | Federal Cyber Service: Scholarship for Service | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5228&org=NSF&from=fund |
| Division of Undergraduate Education | Science, Technology, Engineering, and Mathematics Talent Expansion Program (STEP) | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5488&org=NSF&from=fund |
| Division of Undergraduate Education (DUE) | Course, Curriculum and Laboratory Improvement (CCLI) | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5741 |
| Division of Undergraduate Education (DUE) | Research Experiences for Undergraduates (REU) | http://www.nsf.gov/crssprgm/reu/reu_contacts.jsp |
| Education and Human Resources | National Science, Technology, Engineering, and Mathematics Education Digital Library | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5487&org=NSF&sel_org=NSF&from=fund |
| Elementary, Secondary and Informal Education | Informal Science Education (ISE) | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5361 |
| Elementary, Secondary and Informal Education | Instructional Materials Development (IMD) | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5468 |
| Elementary, Secondary and Informal Education | Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST) | http://www.paemst.org/controllers/home.cfc?method=view |
| Mathematical and Physical Sciences Directorate | Partnerships for Research and Education in Materials (PREM) | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5439&org=NSF&sel_org=NSF&from=fund |
| Office of Integrative Activities | Model Institutions of Excellence (MIE) | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5739&org=NSF&sel_org=NSF&from=fund |
| Office of International Science and Engineering | East Asia and Pacific Summer Institutes for U.S. Graduate Students (EAPSI) | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5284 |
| Office of International Science and Engineering | Developing Global Scientists and Engineers | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=12831&from=fund |
| Office of Polar Programs | Arctic Research and Education Program | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13448 |
| Office of Polar Programs | Postdoctoral Fellowships in Polar Regions Research | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5650&org=NSF&from=fund |
| Various directorates | ADVANCE: Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers | http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5383&from=fund |