

# Corporate Partnerships in the Georgia Intern-Fellowships for Teachers (GIFT) Program

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**Abstract** - Georgia Intern-Fellowships for Teachers (GIFT) is a collaborative effort designed to provide middle and high school science, mathematics and technology teachers with 'real life' experiences in the applications of those disciplines. Begun in 1991, GIFT has placed 1,343 science, mathematics and technology teachers into 6-8 week summer internship positions in corporate and university research laboratory settings. These internships provide teachers first-hand connections between classroom activities and real world applications, and help rejuvenate them for the next school year. During the 1990s, GIFT placed approximately equal numbers of teachers into corporate settings and university research labs. Since 2001, these numbers have changed dramatically, with more than twice the number (470) of university research placements compared to 186 corporate placements. This paper will analyze the reasons for this decline, and present strategies for rebuilding industry partnerships that strengthen science, technology, engineering and mathematics (STEM) education.

*Keywords:* K-12 outreach, research experiences for teachers, corporate partnerships

## GEORGIA INTERN-FELLOWSHIPS FOR TEACHERS PROGRAM OVERVIEW

### Introduction

Research suggests that the quality of the teaching workforce is the single most important factor in predicting student achievement [1]. "Quality" has many dimensions, however. Good teachers must have a solid knowledge of academic content, a high mastery of different pedagogical techniques, and a strong sense of professionalism. Science teachers also must have a fundamental understanding of the scientific process and satisfactory answers to the inevitable question by students—"When am I ever going to use this"? Corporate and university research laboratories are in the unique position of being able to help teachers develop their strengths in most of these categories through summer internships. When teamed with education experts, business leaders and scientists can provide motivated teachers with summer experiences that increase their content knowledge, challenge them to explore new teaching strategies, and show them the practical uses of science, mathematics and technology skills. These experiences also provide teachers with first-hand knowledge about how business leaders and scientists actually approach problems, how they design experiments, how they interpret data, and how they reach workplace solutions. And, in perhaps the most powerful effect of all, teachers' sense of professionalism and renewal can last a lifetime.

GIFT was initiated in 1990, as the Georgia Industrial Fellowships for Teachers program, by the Georgia Institute of Technology with the assistance of the Triangle Coalition for Science and Technology Education in Washington, D.C., and the California-based Industry Initiatives for Science, Mathematics, and Engineering (IISME). From the beginning, a unique feature of the GIFT program has been the inclusion of internships in both the corporate and academic arenas. Sponsors have included academic research institutions such as Georgia Tech, University of Georgia, Georgia State, Clark Atlanta and Emory Universities, the Medical College of Georgia, the UGA Agricultural Experiment Station, the USDA National Peanut Laboratory, and the Centers for Disease Control and

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Prevention, and corporations such as Georgia Power, UPS, Cisco, EMS Technologies, Nordson Corporation, Solvay Pharmaceuticals, CIBA Vision, Gwinnett Hospital System, RFS Pharma, Optima Chemicals, PCC Airfoils, and Stiefel Laboratories.

### **Administrative Details**

GIFT is designed to:

- Provide business leaders and scientists an efficient method of identifying and selecting teachers interested in participating in internships,
- Quickly orient teachers to business and research work environments, and mentors to K-12 workplace culture,
- Provide participants (teachers and mentors) support throughout the summer by assigning small groups of teachers to a master-teacher facilitator,
- Assist teachers with creating an Action Plan for implementation in their classes,
- Provide support for Action Plan implementation in the classroom through visits by GIFT staff,
- Foster the development of an extended community of learners by sharing summer experiences and linking teachers through a teacher listserv, and
- Encourage extended partnerships between teachers and corporate/university mentors.

Sponsors hire teachers as employees at the rate of \$728.56 per week, with the typical GIFT experience lasting 7 weeks and teachers receiving \$5,100. GIFT also receives a \$2,000 program fee from corporate sponsors, and a \$1,250 program fee from academic sponsors. Program fees are used to support program management (teacher recruitment, internship support, round table discussions, site visits to place of internships, classroom visits, etc.) Funding from businesses come from regular personnel budget or corporate foundation grants, and university funding comes from a variety of sources, including National Science Foundation grants, which include Research Experiences for Teachers (RET) supplements [2] to allow hosting of a GIFT teacher .

### **Logistics**

To participate in GIFT, sponsors complete an on-line survey that includes a position description describing the nature of the summer work and a list of the skills required of the teacher, and they submit a letter of intent for participation. Teachers complete an on-line application that includes information about their background, courses they have taught, their technology skills and their geographical preference for work locations. GIFT uses the information from the sponsor and teacher databases to coordinate the matching of skills with preference. Sponsors are given access to applications of teachers who meet their job requirements; sponsors interview prospective applicants and select a teacher to hire for the summer. Approximately 150 teachers from throughout the state apply to the program each year, with a current average placement of 80 teachers per summer.

### **Action Plans**

The Action Plan is a formal document each teacher develops and submits for review and approval by a GIFT facilitator at the end of the summer. It represents the GIFT teacher's blueprint for transferring the summer GIFT experience into his/her classroom during the following school year. The Action Plan must include:

- The **Needs Assessment** that contains a self-assessment of the teacher's teaching/learning environment and where they describe their personal or team vision for their classroom. Teachers describe their vision, goals, objectives, constraints, student needs, and opportunities for changing their classroom practice in mathematics and science. They link this concretely to the reality of their own classroom and students, their system's curriculum, and the standards. In establishing their personal goals and objectives for the entire GIFT experience, both the summer and implementation phases, teachers address the following topics:
  - Major student needs related to specific curricula;
  - Items they would like to change about their teaching methods;
  - Concepts they want to learn during the summer and teach "better" or differently.
- A **Summary of the GIFT Fellow's summer work experience** including discipline content, experimental techniques, instrumentation and technologies used, and the underlying rationale and theory.
- A **Portfolio** that represents key points in the learning process. It includes materials, processes, and products the teacher acquires throughout the summer. For example, it may include state and national standards, videos of teacher work experience projects, workshops, presentations of previous classroom

implementation plans, grant information, equity materials, and career/workplace information, research papers, and corporate annual reports.

- The **Classroom Implementation Plan** contains the teaching and learning goals, classroom implementation, and evaluation plan. Teaching and learning goals include impact on student knowledge, awareness, skills, motivation, and attitudes. Classroom Implementation describes the details of the teacher’s plan for achieving their changed classroom practice and defines the anticipated results. This plan includes long term inquiry-based strategies linked to state and national standards and learning needs in the curriculum, and it utilizes experiences, knowledge, skills, and materials acquired throughout the summer experience. The evaluation plan is designed to answer the question “How do I know if what I am doing is achieving the results I set out to achieve?” Teachers select measurable indicators and assessment tools to determine their success in approaching their goals.
- The **Communication Plan** includes a description of long-range plans for interactions with the mentor. Teachers should also plan to present their summer experience, Action Plan and its outcomes to colleagues at school and at local, state, and national meetings.

### Evaluation

GIFT is evaluated on an annual basis using:

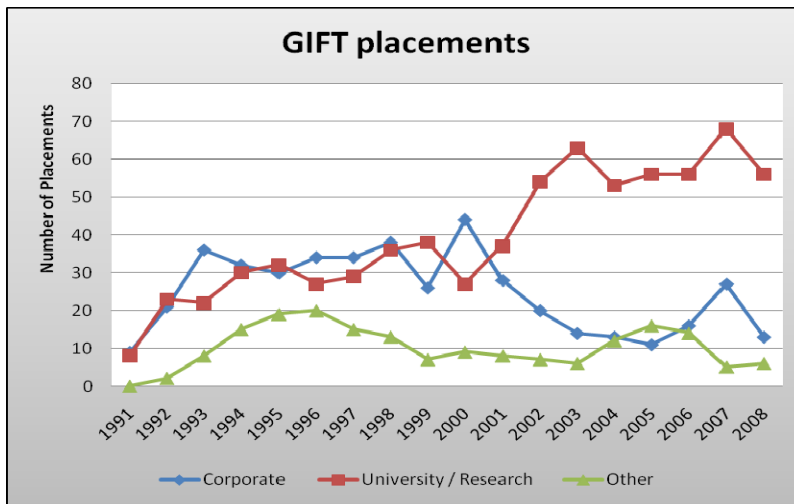
- An extensive survey of teachers at the end of the summer that covers program content, usefulness of components, quality of lab experience, etc.
- A survey of mentors pertaining to program logistics, quality of experience, etc.
- A survey of teachers late during the following year to track success of action plan implementation.
- An evaluation of teacher Action Plans by CEISMC staff.

Results are used to constantly modify and improve the quality of the GIFT experience.

## ASSESSING THE CHANGE IN CORPORATE PARTNERSHIPS’ PARTICIPATION IN GIFT

### Corporate Participants Overview

The figure to the right shows the distribution of GIFT placements made from 1991 through 2008. Until 2001, the number of university and corporate placements were essentially equal. At that time a dramatic shift occurred, as the number of placements made in university research labs increased, and the number in corporate settings declined precipitously. The increase in the university placements was a direct result of the increased emphasis by funders such as the National Science Foundation on requiring that grantees demonstrate the “broader impacts” of their work. The perceived need for an educational component to research grants has resulted in many more faculty members being willing to host a teacher over the summer in order to fulfill this grant requirement. This positive change, driven as it was by the basic funding needs of university faculty, has been maintained. However it is dependent upon continued support from federal funding sources such as the NSF.



The decline in corporate placements, initially explained as being a consequence of the 2000/2001 economic recession, has proven to be a lasting decline even after economic recovery. It was interrupted only by a spike in placements in 2007, made possible by the infusion of funds targeted to the Intel Science and Engineering Fair (ISEF) that was being held in Atlanta in the spring of 2008. Though the economic environment in 2008-2009 is not

likely to be conducive to increased discretionary corporate spending, the GIFT program is making a concerted effort to increase the corporate participation to earlier levels, as detailed below.

### **Increasing Corporate Participation in GIFT**

Over the course of recent years, particularly in years of economic recession, it has become increasingly more difficult for businesses to maintain investment in corporate citizenship. Now, more than in times of plenty, is the time to help companies make the case for continued investing or reinvesting in corporate citizenship, in support of STEM education. Towards this end we must identify current issues, evaluate our current situation, and develop strategies for moving forward.

To convince a corporation to invest in STEM educational programs, we must be able to demonstrate

- That compatible interests and goals exist for both the program and the business,
- That it is beneficial for businesses and educators to work together to reach those goals, and
- That it is ultimately cost effective to the business to support the program.

The Boston College Center for Corporate Citizenship's 2008 Profile of the Practice survey [3] of more than 400 corporate practitioners reveals that less than a year before the financial crisis struck in the fall of 2008, more than half of the respondents to the survey indicated their companies plan to invest **more** in communications, measurement and review mechanisms, external reporting, staff, and training to manage corporate citizenship. In this current climate of economic uncertainty, practitioners charged with managing corporate citizenship are most likely focusing more on the 'business' case for giving – cost savings, efficiencies, reputation bolstering, risk-mitigation effects, and workforce needs. This is where 'opportunity' exists for GIFT and STEM education. At a time when business leaders are increasingly concerned about the quantity and quality of the nation's STEM workforce, the GIFT mission of providing teachers with experiences in realistic applications of science, mathematics and technology, as a means of inspiring and adequately preparing students, aligns with corporations' business case for giving.

### **Initiating or Strengthening Corporate Relationships – Where do we start?**

Innovation and discovery are the backbone of our country's ability to compete globally. In order for the United States to retain a competitive advantage in the new global economy, we need to increase the number of students who are proficient in the fields of science, technology, engineering and mathematics. This requires that we improve K-12 students' readiness for STEM careers by including all types of educators (K-12 teachers, administrators, and higher education faculty) and STEM professionals from businesses and industries in a creative, coordinated and integrated approach to education. The GIFT Placement graph on the previous page illustrates that over time we have experienced a marked decline in business participation, resulting in a reduction in opportunities for teachers and students to gain first hand knowledge and exposure to the usage of STEM in the workforce. Based on an internal self-study of GIFT procedures and process, we attribute the decline in corporate participation in GIFT to the following factors:

- Company finances (i.e. competitor acquisitions, stock value declines, bankruptcy filings, etc.),
- Corporate headquarters relocations,
- Reduction or lack of corporate senior management (i.e. decision makers) on GIFT Board of Advisors. A 30-member board now has five business representatives - only three of which host GIFT teachers,
- Lack of awareness about GIFT among corporations' middle and lower rank staffers,
- Lack of external public recognition by GIFT of corporation's support (known by businesses as reputation bolstering),
- Lack of high profile corporate influencer to advocate merits of the program,

- Increased numbers of competing non-profit organizations focused on STEM education,
- Decreased emphasis on networking by GIFT staff with regional and national Scientific Work Experience Program for Teachers (SWEPTs)

### **Now that we know – What’s Next?**

Once we identified the reasons for the decline in corporate participation, GIFT staff began to work outward to raise the program’s profile and to determine how to make it attractive for businesses to support the GIFT mission. Strategies include:

1. Coalition building with work force developers and other SWEPTs,
2. Speaking engagements at chambers of commerce, industry organizations, and professional associations,
3. Conference presentations,
4. Corporate tours for educators and students,
5. School/Business partnerships,
6. Publications in business and education journals,
7. Business round table discussions,
8. Surveys,
9. Focus groups, and
10. Public policy hearings

### **Results**

During 2008-2009, GIFT experienced the following successes based on the numbered strategies identified above:

1. Coalition building with work force developers and other Scientific Work Experience Programs for Teachers (SWEPTs):

GIFT participated in a February 2009 national retreat of select teacher math and science internship programs hosted by the Ewing Marion Kauffman Foundation in Kansas City, Missouri. The retreat explored the potential of teacher internships as a strategy for teacher professional development, with the foundation giving consideration to strengthening the effectiveness and scale of teacher internship programs nationally.

2. Speaking engagements at chambers of commerce, industry organizations, professional associations:

A GIFT presentation, made to the metro-Atlanta Chamber of Commerce’s Regional Education Policy Committee in December 2008, resulted in a local corporation committing to sponsoring 10 local teachers to participate in GIFT 2009.

3. The ‘business’ case for giving – cost savings, efficiencies, reputation bolstering, risk-mitigation effects, and workforce needs:

A GIFT teacher, placed at a corporation during the summer of 2008, identified energy sources (electrical, pneumatic, hydraulic, and mechanical) on all equipment, and documented machine-specific lockout/tag out procedures for each machine. In compliance with OSHA and corporate guidelines, the teacher developed and implemented a lockout/tag out training program. This corporate-funded teacher internship proved to be

beneficial for both the business and educator. The business experienced cost savings, efficiencies and risk-mitigation effects, and the teacher experienced firsthand the 'real world' use of math, science and technology.

## **Conclusion**

GIFT seeks to improve student achievement in STEM, and to better prepare them for careers in these fields. We believe that a significant way to inspire students and increase their interests in STEM is to focus on the key role teachers have in preparing them for the future. We know that students benefit from interactions with and access to individuals in STEM careers. GIFT provides teachers with rich, in-depth experiences in 'real world' applications of science, mathematics and technology and increases their network of resources. We equip teachers to be able to effectively answer the age-old question – "When am I ever going to use this stuff"?

Corporations play an integral role in identifying and harnessing the talent of our nation's future STEM business leaders and researchers. We must tap their interest and expertise.

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## **REFERENCES**

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- [2] Information about NSF RET supplements can be found at [http://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=nsf05047](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf05047) and [http://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=nsf07557](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf07557).
- [3] Information about Boston College Center for Corporate Citizenship 2008 Profile of the Practice survey can be found at <http://www.bcccc.net>

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