



NSF Project Reporting Format

This document has been developed to provide Principal Investigators (PIs), co-PIs, and research organizations with:

- a listing of the questions that will be asked in the new NSF project reporting format;
- assistance in planning for the submission of the report; and
- a tool to help PIs collaborate with other contributors in answering these questions, if needed.

The project reporting service on Research.gov and the associated [help documentation](#) provides more detailed instructions and contextual assistance.

Note: NSF project reports are not cumulative and should always be prepared for the specific project reporting period only.

Accomplishments

You have the option of selecting “nothing to report” in this section.

What are the major goals of the project?

Facilitating Academic Careers in Engineering and Science (FACES), one of the original cohort of National Science Foundation Alliances for Graduate Education and the Professoriate (AGEP) programs, was a collaborative effort between the Georgia Institute of Technology, Emory University, Morehouse College, and Spelman College. Initiated in 1998, FACES (see: <http://www.faces.gatech.edu>) was comprised of several components, each designed to assist underrepresented engineering and science students with navigating the path to an academic career. Undergraduate students who completed their sophomore year were provided summer and academic year research experiences as a means of promoting their interest in research and graduate school attendance. These students were then encouraged to enroll in graduate programs using a series of recruitment efforts at national events such as the NSBE Annual Convention, campus visits and tours, and a lecture/workshop series on the merit of graduate school and careers in academia. Admitted graduate students were supported on doctoral fellowship supplements throughout their matriculation. Graduate student support was provided by means of a stipend which increased in value as students met the critical milestones along the way toward the Ph.D. Another portion of FACES funds was used to support travel to technical meetings for research presentations. Finally, senior doctoral students competed for Career Initiation Grants or Portable Post-doctoral fellowships, which they used as start-up funds to assist in establishing their research programs in their initial academic appointments.

What was accomplished under these goals (you must provide information for at least one of the 4 categories below)?

Over the lifetime of the FACES program, a total of 412 underrepresented students have received Ph.D. degrees in science or engineering at Georgia Tech – the most in such fields in the nation.

In addition, over thirty participants in various aspects of the FACES program entered tenure track professoriate with ten having been awarded prestigious young investigator awards from various agencies (i.e., National Science Foundation PECASE and/or CAREER, National Institutes of Health, Air Force Office of Scientific Research). As detailed in the table below, a large fraction of these young faculty members are in the engineering disciplines.

FACES Participants that Entered Academia as Tenure-Track Faculty

A. Asa-Awuku*	University of California, Riverside	Chem./Environ. Engr
R. Beyah*	Georgia Institute of Technology	ECE
T. Brown	Michigan State University	ECE
T. Clegg	University of Maryland, College Park	EDUC-Teaching
J. Coombs-Reyes	Norfolk State University	Mathematics
S. France	Georgia Institute of Technology	Chem. & Biochemistry
C. Gardner	Clemson University	Computing
D. Geddis	Norfolk State University	Engineering
A. Gordon	University of Central Florida	Mech., Mat'l, Aero. Eng
S. Graham*	Georgia Institute of Technology	ME
M. Griffith	Kennesaw State University	Biology and Physics
C. Hall	West Chester University	Geology/Astronomy
J. Hickman	Southern Poly University	Social & Int'l Studies
M. Hite-Head	Morgan State University	CE
E. John	University of Trinidad and Tobago	Process Engineering
A. Johnson	Morehouse College	CS
W. Johnson	Armstrong State University	Engineering Studies
M. Lewis*+	Cornell University	Operations Research
C. Liddell*+	Cornell University	MSE
J. Matthews	Howard University	Chemistry
J. Mendenhall	Morehouse College	Chemistry
R. Metoyer*	Oregon State University	CS
J. McNair	University of Florida	ECE
E. Moore*+	Georgia Tech Savannah	ECE
J. Owino	University of Tennessee-Chattanooga	Engineering & CS
D. Paris-Michael	Tuskegee University	CE
A. Parker	Northeastern University	Computer & Info. Science
M. Platt*	Georgia Institute of Technology	BME
W. Robinson*	Vanderbilt University	EECS
G. Triplett*	University Of Missouri	ECE
F. Williams	Norfolk State University	Engr./Material Sci. Ctr.

* Prestigious Young Investigator Awardees

+ NSF PECASE awardees

A statistical study of the efficacy of the enrichment activities for FACES fellows was performed in comparison to other control groups of STEM doctoral graduates from Georgia Tech. Analysis of variance results indicated that FACES participants expressed higher levels of preparation compared to non-URM STEM alumni in teaching a college level course in

their respective disciplines, giving job talks, thinking critically and logically, understanding professional and ethical responsibilities, engaging in lifelong learning, and exercising leadership skills. In addition, FACES alumni were over two and a half times more likely to report working in a faculty or academic professional position than were the non-URM STEM graduates, and nearly twice as likely to be in an academic field compared with URM graduates without the FACES experience.

What opportunities for training and professional development has the project provided?

More than 30 beneficiaries of the FACES initiative received sufficient training to obtain tenure track faculty positions at various colleges and universities around the country.

How have the results been disseminated to communities of interest?

The results have been presented at the NSF Joint Annual Meeting (JAM), the ASEE Annual Conference, and through various publications (see “Products”).

What do you plan to do during the next reporting period to accomplish the goals?

N/A.

NOTE: You may upload PDF files with images, tables, charts, or other graphics in support of the Accomplishments section. You may upload up to 4 PDF files with a maximum file size of 5 MB each.

Products

You have the option of selecting “nothing to report” in this section. There are no limitations to the number of entries you submit and you can also pull information directly from Thomson Search when using the online tool on Research.gov.

Within the Products section, you can list any products resulting from your project during the specified reporting period, such as:

L. Conrad, J. Auerbach, and G. May, "REU Site: Summer Undergraduate Research in Engineering/Science Program at the Georgia Institute of Technology," *Proc. 2013 ASEE Conference and Exposition*, Atlanta, GA, June, 2013.

A. Johnson, A. Prysocke, L. Conrad, and G. May, "Development and Implementation of Academic Enrichment Activities for REU Students," *2009 ASEE Global Colloquium on Engineering Education*, Budapest, Hungary, October, 2009.

A. Johnson, A. Prysocke, L. Conrad, and G. May, "Development and Implementation of Academic Enrichment Activities for REU Students," *Proc. 2009 ASEE Conference and Exposition*, Austin, TX, June, 2009.

J. Fairley, J. Auerbach, A. Prysocke, L. Conrad, and G. May, "Teaching Research Skills in Summer Undergraduate Research Programs," *2008 ASEE Global Colloquium on Engineering Education*, Capetown, South Africa, October, 2008.

J. Fairley, J. Auerbach, A. Prysocke, L. Conrad, and G. May, "Teaching Research Skills in Summer Undergraduate Research Programs," *Proc. 2008 ASEE Conference and Exposition*, Pittsburgh, PA, June, 2008.

J. Auerbach, C. Davis, J. Gordon, and G. May, "A Comprehensive Examination of the Impact of the Summer Undergraduate Research Program on Minority Enrollment in Graduate School," *Proc. 2007 ASEE Conference and Exposition*, Honolulu, HI, June, 2007.

J. Fairley, L. Conrad, and G. May, "The Importance of Graduate Mentors in Undergraduate Research Programs," *Proc. 2007 ASEE Conference and Exposition*, Honolulu, HI, June, 2007.

D. Chubin, G. May, and E. Babco, "Diversifying the Engineering Workforce," *J. Eng. Education*, vol. 94, no. 1, pp. 73-86, Jan., 2005.

G. May, "Recruiting Underrepresented Faculty in STEM Fields," Invited Paper, *Trusteeship*, May, 2004.

G. May and D. Chubin, "A Retrospective on Undergraduate Engineering Success for Underepresented Minority Students," *J. Eng. Education*, vol. 92, no. 1, pp. 27-40, Jan., 2003.

Participants

There are no limits on the number of participants you list for this section; however, you must list participants who have worked one person month or more for the project reporting period. You have the option of selecting "nothing to report" in this section. For Research Experience for Undergraduates (REU) sites and supplements, specific questions will be listed in this section. The online service will also ask for additional information on participants

such as:

- What individuals have worked on the project?
- What organizations have been involved as partners?
- Have other collaborators or contacts been involved?

What individuals have worked on the project?

Name	Most Senior Project Role	Nearest Person Month Worked
Gary S. May (GT)	PI	5
Elethia Tillman (Emory)	Co-PI	5
James Brown (Morehouse)	Co-PI	5
Retina Burton (Spelman)	Co-PI	5

What other organizations have been involved as partners?

FACES was an alliance between the Georgia Institute of Technology, Emory University, Morehouse College, and Spelman College. All institutions are located in Atlanta, Georgia.

Have other collaborators or contacts been involved? No

Impacts

You have the option of selecting “nothing to report” in this section.

What is the impact on the development of the principal discipline(s) of the project?

Due in a large part to the FACES program, Georgia Tech remains a national leader in the production of advanced degrees among minority scientists and engineers. For example, Georgia Tech currently ranks:

- 1st in the nation in number engineering Ph.D. degrees awarded to African Americans
- 2nd in engineering undergraduate degrees awarded to overall minorities
- 2nd in engineering undergraduate degrees awarded to African American students
- 1st in engineering doctorate students awarded to overall minorities
- 1st in engineering doctoral degrees awarded to African American students
- 1st in engineering doctoral degrees awarded to Asian American students

- 1st in the nation in total number of engineering degrees awarded to women

A key accomplishment of the FACES alliance is increased collaboration and communication between the member institutions. Georgia Tech, Emory, Morehouse, and Spelman have been more active than ever in FACES related activities, and this has really allowed a much stronger undergraduate through Ph.D. pipeline in the program. This has also balanced the participation of the sciences with engineering.

In 2011, for example, Morehouse and Spelman Colleges were recognized as top producers of African-American doctorates (total & STEM) for the period 2000-2009.

What is the impact on other disciplines?

N/A

What is the impact on the development of human resources?

Over the life of the program, FACES has produced more than 400 URM PhD graduates. Thirty two-of these have gone on to tenure track academic careers.

What is the impact on physical resources that form infrastructure?

N/A

What is the impact on institutional resources that form infrastructure?

N/A

What is the impact on information resources that form infrastructure?

N/A

What is the impact on technology transfer?

Certain aspects of the FACES program represent best practices that can be transferred to other institutions. For example, both transition activities (Dual Degree/Transfer and Graduate) are also ready for national distribution. They have already been reviewed by other institutions (such as Purdue and University of Alabama). The programs are designed as “pre-season” transition programs. They are designed under the notion that “champions” are made in the pre-season. They both occur during the week prior to the students first term of enrollment, and use current students as peer mentors who deliver the information via an interactive orientation. Both programs are national models.

We also believe that the Career Initiation Grant and Portable Post-doc programs represent best practices that are ready for regional or national distribution.

What is the impact on society beyond science and technology?

The FACES program has provided tangible evidence that issues of STEM underrepresentation are indeed surmountable given the appropriate programmatic support, emphasis, and infrastructure. The program was a model for the nation.

Changes / Problems

If not previously reported in writing to the agency through other mechanisms, provide the following additional information or state, "Nothing to Report", if applicable.

Nothing to report.

Special Requirements

None.