



**National Science Foundation • Office of Inspector General**  
2415 Eisenhower Avenue, Alexandria, VA 22314

**MEMORANDUM**

**DATE:** August 23, 2022

**TO:** Dale Bell  
Director  
Division of Institution and Award Support

Jamie French  
Director  
Division of Grants and Agreements

**FROM:** for Mark Bell [REDACTED]  
Assistant Inspector General  
Office of Audits

**SUBJECT:** OIG Report No. 22-6-006, *The Massachusetts Institute of Technology's Administration of Graduate Research Fellowship Program Funding*

In February 2020, we initiated an audit of the National Science Foundation's Graduate Research Fellowship Program (GRFP). The objective of this ongoing audit is to determine whether NSF properly distributes, monitors, and accounts for GRFP funding.

We are issuing this routine activity memorandum prior to completing our audit to alert you to matters requiring NSF's immediate attention. Specifically, during our audit we found that Massachusetts Institute of Technology (MIT) is not complying with current GRFP award terms and conditions requiring institutions to submit completion reports and prorate stipend payments by whole-month increments. Further, MIT's accounting practices for GRFP awards did not properly account for GRFP drawdowns.

This memorandum contains five recommendations. We provided a draft of this memorandum to MIT for review on June 21, 2022. MIT provided us with comments on July 22, 2022 and concurred with all the recommendations.

Please coordinate with our office during the 6-month resolution period, as specified by OMB Circular A-50, to develop a mutually agreeable resolution of the findings. The findings should not be closed until NSF determines that all recommendations have been adequately addressed and the proposed corrective actions have been satisfactorily implemented.

## Non-Compliance with GRFP Reporting Requirement

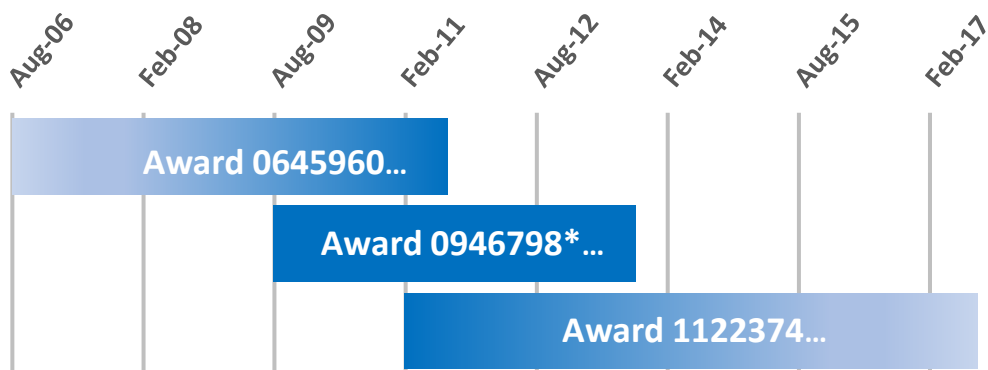
The NSF GRFP *Administrative Guide for Fellows and Coordinating Officials* (“Guide”) incorporates all policies, rules and regulations, and the terms and conditions found in the Fellowship Offer Letter, the annual GRFP Program Solicitation, and the Notice of Grant Award.

The 2016 Guide<sup>1</sup> requires institutions to submit an annual completion report certifying the completion status — in progress, completed, graduated, transferred, or withdrawn — of fellows at the institution and degree, if awarded. MIT did not submit completion reports between 2016 and 2021. In addition to this instance of noncompliance with GRFP award terms and conditions, MIT was not in compliance with the Guide’s requirement for institutions to exempt fellows on tenure<sup>2</sup> from paying tuition and fees normally charged to graduate students of similar academic standing, as we reported in [OIG Report No. 22-6-001](#). In response to that report, NSF updated the Guide to clarify that institutions cannot use teaching or research activities to make up the difference between NSF’s cost-of-education allowance and the institution’s regular tuition and fees.

## Inadequate Accounting Practices

NSF makes 5-year GRFP awards to MIT and amends the awards at least annually to provide additional funding. The periods of performance for the 5-year awards typically overlap to avoid breaks in funding that could negatively impact the fellows (see Figure 1). If surplus funds remain at the end of an award, NSF directs recipients to request a no-cost extension and to expend funds on the older award before expending any funds on a new award.

**Figure 1. GRFP Awards to MIT 2006 - 2017**



\*This award was funded under the American Recovery and Reinvestment Act of 2009.

<sup>1</sup> The Guide was updated in 2022.

<sup>2</sup> A fellow on tenure is an active fellow receiving GRFP financial support during the fellowship year, certified by the institution to be making satisfactory progress.

We found that MIT did not properly account for GRFP drawdowns for NSF Award No. 1122374.<sup>3</sup> Specifically, MIT's drawdowns in NSF's Award Cash Management Service (ACM\$) application totaled \$6.8 million more for NSF Award No. 1122374 than MIT recorded in its general ledger for this award.

Additionally, MIT's financial management system did not meet requirements in the Research Terms and Conditions' *Standards for Financial Management Systems*,<sup>4</sup> which are incorporated by reference into this GRFP award. According to the standards, a recipient's financial management system must meet the requirements of 2 CFR 215.21(b), which required that the system provide for, among other things, (1) accurate, current, and complete disclosure of the financial results of each federal award<sup>5</sup> and (2) records that identify adequately the source and application of funds for federally sponsored activities.<sup>6</sup>

According to MIT, it recorded \$6.1 million in expenditures to NSF Award No. 0645960, rather than Award No. 1122374, which accounts for most of the \$6.8 million variance mentioned above. MIT stated it overdraw on Award No. 1122374 and charged more than it drew on Award No. 0645960, the previous award. At the time of our review, MIT had not transferred expenditures between GRFP awards in its general ledger. Based on our limited review, while some of the \$6.1 million in expenditures occurred during Award No. 1122374's award period, other expenditures were made before Award No. 1122374's effective date of February 1, 2011, and thus should not be charged to that award.

### **Inaccurate Payments to Fellows**

GRFP fellows on tenure are eligible to receive monthly stipend payments, which are managed by their educational institutions. The annual, 12-month GRFP stipend amount is specified in each year's Program Solicitation and the stipend is prorated in monthly increments. The Program Expense Report (PER) calculates the annual stipend and associated cost of education allowance for each fellow based on the fellowship enrollment status they report to NSF. The institution certifies the fellowship status and distributes the stipend to the fellow. The Guide requires institutions to prorate fellowship stipend payments in whole-month increments and to report the stipends in no less than 1-month increments on its PER.

Although we found that MIT paid fellows' stipends as reported on its PERs for 90 percent of the fellows, we also found variances that were sometimes the result of MIT under- or overpaying the stipend amount specified in the fellowship's terms and conditions, or MIT

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<sup>3</sup> Our review scope included only expenditures charged to NSF Award No. 1122374; therefore, we did not reconcile charges claimed on all three awards shown in Figure 1 to assess whether MIT was able to support drawdowns of NSF funds across those awards.

<sup>4</sup> Article 21, Research Terms and Conditions, dated July 1, 2008

<sup>5</sup> 2 CFR 215.21(b)(1)

<sup>6</sup> 2 CFR 215.21(b)(2)

certifying inaccurate PERs while paying the fellow the correct stipend amount. These variances between MIT's general ledger and certified PERs were greater than \$1.1 million. Of the 1,528 fellows at MIT between 2013 and 2018, 160, or about 10 percent, had a variance between their stipend payment and reported PERs amounts greater than \$50.

We did not research MIT's account records for all 160 fellows with apparent inaccurate payments, so we do not know the amount of discrepancies resulting from inaccurate payments as opposed to those from inaccurate PERs. However, we conducted further review of MIT's account records for 9 out of the 160 fellows and include examples in the following sections of both situations.

### MIT Over- and Underpaid Fellows

MIT prorated stipend payments by the day, instead of whole month increments as required by the award terms and conditions.<sup>7</sup> As a result, if a fellow was on tenure for 15 days in a given month, MIT paid the fellow for only 15 days and not the entire month, resulting in an underpayment according to the terms of the Guide. For example, MIT underpaid a fellow by \$1,417, or half a month of stipend, because the fellow transferred to MIT for the Spring 2018 semester and the term began on January 16<sup>th</sup>. As a result of our work, MIT said it is working to identify current GRFP fellows that may be impacted by its proration practices because of transfer, upcoming graduation, or other reasons, to ensure MIT pays them the correct stipend amounts. MIT also said it is reviewing the job code rules in its accounting system to identify a long-term solution to correct the issue.

We also found that MIT overpaid a fellow \$1,769 in 2016 because a department entered the incorrect stipend amount into MIT's payroll system. MIT said it administers all graduate fellowships, including GRFP, in a decentralized manner and relies on each of its academic departments to manage fellowship appointments. MIT said it does not have a way to ensure all departments enter information correctly and consistently.

### MIT Certified Inaccurate PERs

NSF generates the PER based on status information the fellows report to NSF. The institution's GRFP Coordinating and Financial Officials then review and certify the PER. The amounts in the PER may not be reliable because the fellows may not have provided accurate information and/or the Coordinating and Financial Officials may not have reviewed and certified correctly.

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<sup>7</sup> The Guide states fellows' stipend is prorated in whole month increments and defines a month as 14 or more days in a calendar month.

For example, MIT certified on its 2017 PER that it paid a fellow \$34,000 in stipend. In fact, MIT did not pay the stipend because the fellow was on medical leave. As a result, MIT incorrectly certified that the fellow was on tenure for that year.

In another example, MIT certified on its 2018 PER that a fellow had forfeited 3 months of stipend; however, the fellow had only requested to take 2 months off, and MIT's payroll records showed MIT did not pay the fellow for 2 months of stipend. When compared to the PER, MIT's payroll records appear to show an overpayment of 1 month's stipend because the PER includes a longer period of forfeited time than reflected in the payroll records.

NSF relies on the PERs to determine award balances and additional funding amounts. In cases where MIT's PER was inaccurate, NSF used an incorrect amount to make funding decisions. MIT said it is working to correct the PER inaccuracies we identified.

### **MIT Response**

MIT agreed with all recommendations in the draft memorandum. MIT is implementing updated policies and procedures and adding resources to manage its program to support GRFP compliance under the direction of MIT's Coordinating Official. MIT has also revised its processes for recording and managing GRFP awards and will work with NSF to resolve the financial variances identified in the report.

We included MIT's response to the draft memorandum in its entirety as an attachment.

### **Recommendations**

We recommend the Director of the Division of Institution and Award Support, National Science Foundation:

1. Require MIT to develop controls to ensure submission of fellowship completion reports certifying the status — in progress, completed, graduated, transferred, or withdrawn — of fellows at the institution and degree, if awarded.
2. Direct MIT to determine what actions are necessary to reconcile the \$6.8 million variance between the funds received from NSF and the funds recorded in MIT's general ledger for Award No. 1122374 and implement corrective actions, as necessary.
3. Direct MIT to strengthen its administrative and management internal controls and accounting processes to ensure that charges to Graduate Research Fellowship Program awards are accurate.

4. Ensure MIT develops controls to guarantee the payment of fellows in whole-month increments.
5. Ensure MIT develops controls to confirm the accuracy of Program Expense Reports.

We appreciate the courtesies and assistance MIT staff has provided during the review. If you have any questions, please contact Elizabeth Kearns, Director, Audit Execution, at 703.292.8483 or ekearns@nsf.gov.

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## Office of the Vice Chancellor

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July 22, 2022

National Science Foundation  
Office of Inspector General  
2415 Eisenhower Avenue  
Alexandria, VA 22314

Subject: Response to Draft Memorandum dated June 21, 2022, *The Massachusetts Institute of Technology's Administration of Graduate Research Fellowship Program Funding* (Draft Memorandum)

The National Science Foundation Office of Inspector General (OIG) has been auditing NSF's oversight of the NSF Graduate Research Fellowship Program (GRFP). As part of that audit, the OIG has examined certain MIT GRFP accounts and related practices.

The OIG has shared with MIT a copy of the Draft Memorandum, which contains five recommendations made by OIG to the NSF's Director of the Division of Institution and Award Support. MIT appreciates the opportunity to respond to the recommendations in the Draft Memorandum, and we have done so below. MIT is committed to ensuring that it administers the GRFP in compliance with the NSF GRFP *Administrative Guide* (Guide).

As noted below, MIT is implementing updated policies and procedures and adding resources to manage this program to support GRFP compliance under the direction of MIT's Coordinating Official.

1. *Require MIT to develop controls to ensure submission of fellowship completion reports certifying the status in progress, completed, graduated, transferred, or withdrawn of fellows at the institution and degree, if awarded.*

MIT's Office of Graduate Education is developing procedures and implementing controls to complete, verify the content, and ensure the submission of, fellowship completion reports by their respective due dates.

2. *Direct MIT to determine what actions are necessary to reconcile the \$6.8 million variance and implement corrective actions, as necessary.*

MIT believes that most of the variance is accounted for by \$6.1 million in expenditures that were recorded to NSF Award No. 0645960, rather than Award No. 1122374. MIT looks forward to addressing this variance more fully with NSF and to resolving the issue in a fair and equitable manner. In addition, MIT has subsequently revised its processes for recording and managing GRFP awards.

3. *Direct MIT to strengthen its administrative and management internal controls and accounting processes for charges to specific Graduate Research Fellowship Program awards.*



## Office of the Vice Chancellor

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Vice Chancellor for Undergraduate and Graduate Education  
Jerome C. Hunsaker Professor of Aeronautics and Astronautics  
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MIT is implementing additional internal controls to review and confirm that all charges are accurate and compliant with the Guide as well as additional resources to support the management of this program.

4. *Ensure MIT develops controls to guarantee the payment of fellows in whole-month increments.*

MIT is in the process of modifying its graduate appointment and payroll systems to automate the calculation and charging of stipends in only whole-month increments, consistent with the requirements of the Guide. While system changes are underway, MIT is manually reviewing stipend payments so they are paid in whole-month increments.

5. *Ensure MIT develops controls to confirm the accuracy of Program Expense Reports.*

MIT has implemented a multi-step verification and reconciliation process to confirm the consistency of the information in Program Expense Reports. MIT is also implementing system updates to support this process.

In conclusion, MIT is proud of its long-standing relationship with the NSF and is committed to full compliance with the rules and regulations of the GRFP.

Sincerely,

Ian A. Waitz  
Vice Chancellor for Undergraduate and Graduate Education