

MEMORANDUM

Date: September 30, 2003

To: Mary F. Santonastasso
Director, Division of Grants and Agreement (BFA/DGA)

Margaret S. Leinen
Assistant Director, Directorate for Geosciences (GEO/OAD)

From: Deborah H. Cureton
Associate Inspector General for Audits

Subject: OIG Report Number 03-2014
Audit of International Geosphere-Biosphere Programme

Attached is the final report on our audit of the International Geosphere-Biosphere Programme (IGBP). Generally, the report concludes that NSF procedures for managing and monitoring the IGBP grants needed improvement to ensure compliance with applicable federal regulations and award terms and conditions. Based on NSF and IGBP comments, we have revised one of the four audit findings. Accordingly, we have deleted one audit recommendation and revised other recommendations to be consistent with our changes and to reflect corrective actions already taken by NSF and the IGBP. The NSF and IGBP responses are attached as Appendices.

In accordance with Office and Management Budget Circular A-50, we request that the Agency submit a written corrective action plan to our office within 60 days of the date of this letter. This corrective action plan should detail specific actions and milestones dates for addressing each recommendation. We are, of course, available to work with you during the next 60 days to ensure the submission of a mutually agreeable corrective action plan.

We appreciate the cooperation that was extended to us during our review. If you have any questions, please direct your inquiries to me at extension 4985 or James Noeth at extension 5005.

Attachment

cc: Donna Fortunat, Director, Division of Acquisition and Cost Support
(BFA/DACS)
Kerri-Ann Jones, Director, Office of International Science and Engineering
(SBE/INT)
Jarvis L. Moyers, Director, Division of Atmospheric Sciences (GEO/ATM)
Lawrence Rudolph, General Counsel, Office of the General Counsel (OGC/OD)

**Audit of International
Geosphere-Biosphere Program
Stockholm, Sweden**

**National Science Foundation
Office of Inspector General**

**September 30, 2003
OIG 03-2-014**



Audit of International Geosphere-Biosphere Programme

Stockholm, Sweden

September 30, 2003

OIG 03-2-014

EXECUTIVE SUMMARY

This report provides the results of the Office of Inspector General's (OIG) audit of National Science Foundation (NSF) grants awarded to the International Geosphere-Biosphere Programme (IGBP). The purpose of the audit was to evaluate (1) the adequacy of NSF policies and procedures for managing and monitoring IGBP awards to ensure compliance with applicable federal regulations and award terms and conditions and (2) whether IGBP was administering NSF grant funds in accordance with award terms and conditions.

The primary role of the IGBP is to provide international coordination and leadership for global environmental change research. The IGBP Secretariat, hosted by the Royal Swedish Academy of Sciences (Academy), is located in Stockholm, Sweden and its operations are funded by the United States and 50 other countries. NSF has awarded five grants to the IGBP; three providing the U.S. contribution for supporting the IGBP Secretariat's program costs and two providing support for one of the IGBP's core projects, the Past Global Changes (PAGES) office, located in Bern, Switzerland. NSF funding for the IGBP grants has totaled \$6,499,449 since the first award in 1993.

We found that NSF procedures for managing and monitoring the IGBP grants needed improvement to ensure compliance with applicable federal regulations and award terms and conditions. NSF grant files did not contain documentation verifying the legal status of the Academy or the IGBP; grant award letters inadvertently cited the IGBP, which is not a legal entity, as the grantee institution; and the award agreements were unenforceable as cost reimbursable grants and did not clearly establish oversight responsibilities for pass-through funds. Therefore, NSF placed itself in a vulnerable and undesirable position of not having a legal basis to seek recourse, if necessary, for possible misuse or mismanagement of NSF grant funds. Further, NSF was precluded from fulfilling its oversight responsibilities for financially monitoring IGBP expenditures to ensure funds were used for grant purposes and in compliance with federal and NSF policy and procedures.

Our review of all IGBP program costs disclosed that expenditures were generally used for purposes within the overall scope of the NSF grant objectives and were for expenditures typically allowable under federal cost principles. However, we noted several areas where IGBP needs to make improvements to strengthen oversight over program funds and to ensure the most cost effective use of resources. The areas addressed include: core project office travel, publications, earned interest, and procurement practices. Our suggested improvements in 2 of the 4 areas identified approximately \$246,000 that could be saved over a five-year period and better used for other scientific program purposes.

The primary factor contributing to the weak NSF procedures for awarding and administering the IGBP grants was the lack of a process for critically and thoroughly

evaluating the atypical nature of these foreign funding arrangements. As a result, NSF did not have a complete understanding of the unique and unusual nature of the proposed funding arrangements and the relationship and responsibilities reached between the Academy, the IGBP, and PAGES. NSF could not demonstrate what documentation it requested and reviewed to verify the legal standing of the parties involved in these funding arrangements. Additionally, because NSF did not have an award instrument for providing a contribution type award to a foreign organization, NSF modified its standard award agreement, used for a typical cost reimbursable grant, without addressing cost accountability issues resulting from its modifications. By eliminating the requirement for IGBP to separately track costs incurred under NSF awards, stewardship over NSF funds was compromised because neither IGBP nor NSF could determine how grant funds were expended. Lastly, NSF improperly utilized the IGBP grants to pass-through funds to core project offices without establishing clear accountability requirements. Thus, core project office grant expenditures were not subject to the NSF award terms and conditions.

Since the completion of our audit, NSF, the IGBP, and the Academy have taken actions to correct some of the concerns raised during our review. The IGBP has established a written agreement with both the Academy, its host organization, and the International Council of Science, its founding organization, defining the relationship and associated responsibilities between the three groups. Also, NSF has developed and issued new terms and conditions for contribution type awards to foreign organizations that would be more suitable for these awards. Further, NSF has added the name of the Academy as the awardee institution in the grant award letters and amended the award terms and conditions.

We commend the IGBP and NSF for these corrective actions. However, further NSF efforts are needed to ensure compliance with federal grant regulations and award terms and conditions. Specifically, NSF needs to (1) ensure that Grant Officers are verifying the legal status of new foreign awardees as required by NSF procedures; (2) officially notify the Academy that it is the grantee institution and assess whether the Academy understands federal grant accountability requirements; and (3) use a fixed amount award for the IGBP and PAGES grants and perform a rigorous preaward analysis of proposed grant costs to assure the expenditures are necessary and reasonable and are for the types of costs typically allowable under federal cost principles. Further, for the NSF grant providing PAGES funding, NSF needs to coordinate with the Academy, the IGBP, and PAGES, to identify an organization having legal status that is willing and able to accept the grant. Based on these efforts, NSF needs to establish an award agreement with terms and conditions that will provide for clear financial accountability over grant funds and contractually obligate the PAGES core project office to comply with those terms and conditions.

A draft audit report, requesting comments, was issued to the IGBP and NSF's Division of Grants and Agreements, the Office of General Counsel, the Directorate for Geosciences, and the Division of Atmospheric Sciences. In general, IGBP agreed with the audit findings and recommendations, with the exception of the recommendation regarding the

handling of interest earned on IGBP funds. However, NSF disagreed with the audit finding concluding that the agency had made awards to a non-legal entity. NSF did not specify its agreement or disagreement with any of the remaining audit recommendations.

We have revised the one audit finding giving consideration to NSF's position that the grants were made to the Academy and not just IGBP, as was cited in the NSF grant award letters. Also, we have revised the audit report to reflect corrective actions already taken by NSF, the Academy, and IGBP. Accordingly, we have modified the audit recommendations based on these changes to better specify and/or clarify the additional corrective actions needed.

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ACRONYMS

Academy	Royal Swedish Academy of Sciences
DGA	NSF Division of Grants and Agreements
DIS	Data and Information System
GAIM	Global Analysis, Integration and Modeling
GEO	NSF Directorate for Geosciences
IGBP	International Geosphere-Biosphere Programme
ICSU	International Council of Science
NASA	U. S. National Aeronautical Space Agency
NSF	U. S. National Science Foundation
OGC	NSF Office of General Counsel
OMB	U.S. Office of Management and Budget
PAGES	Past Global Changes
SSC	Scientific Steering Committee

INTRODUCTION

BACKGROUND

International Geosphere-Biosphere Programme

The International Geosphere-Biosphere Programme (IGBP) is an international, interdisciplinary framework for the conduct of global change research. IGBP's goal is to improve the understanding of the interactive physical, chemical, and biological processes that regulate the Earth system. The role of the IGBP is to provide international coordination and leadership in global change research through setting common international agendas to avoid wasteful duplication of effort, foster data and measurement protocols, standardize and share data, integrate and synthesize the scientific research into a coherent and comprehensive global picture, and communicate the work worldwide.

The IGBP was established in 1986 under the auspices of the International Council for Science (ICSU) and is one of four international global environmental change research programs sponsored by ICSU. As the founding organization, the ICSU Executive Board appoints the IGBP Executive Director and the Officers and members of the IGBP Scientific Committee. The Scientific Committee and its Officers are the principal decision-making bodies guiding the science of the IGBP program. The full Scientific Committee and the Officers meet once a year.

The IGBP Secretariat coordinates the central activities of the Program on a daily basis, under the leadership of the Executive Director with a current staff of nine persons. The Secretariat implements Scientific Committee decisions, works with its core projects to provide support for the overall research effort, raises funds for IGBP scientific activities, communicates IGBP research, liaises with other partner organizations and international non-governmental and intergovernmental scientific organizations, and administers the IGBP central budget. The IGBP Secretariat is hosted by the Royal Swedish Academy of Sciences (Academy) in Stockholm, Sweden.

The IGBP research effort is organized into 8 broadly disciplined core projects, each guided by a Scientific Steering Committee, which undertakes the detailed scientific planning and implementation of each project. The IGBP's Scientific Committee Officers appoint the members of the Scientific Steering Committee for each core project. The staff of each core project office coordinates and facilitates their respective project's work on a daily basis. The core project offices are located around the world and the host country or institution primarily provides funding.

The IGBP Secretariat's 2001 central budget was approximately \$1.9 million, of which \$1.4 million comes from national contributions from about 50 countries around the world. The IGBP country contributions were assessed based on the United Nations guidelines for ascribing dues for member countries. The United Nations scale established

the United States contribution at 25 percent. The remainder of IGBP's income is derived from grants obtained and earmarked for specific activities. The central funds were used primarily for scientific integration activities at the program level, communication, and publication of IGBP research results.

U. S. Government Funding

U.S. Government funding of the IGBP has been continuous since the founding of the IGBP in 1986. From 1988 to 1992, NSF funding of \$600,000 was provided to the IGBP through the National Academy of Sciences. Since 1993, NSF has awarded funds directly to the IGBP through continuing grants with annual increments. The funds have been awarded through separate grants to the IGBP Secretariat for its operations and to one of its 8 core projects, the Past Global Changes (PAGES).

NSF funding for the IGBP Secretariat has totaled \$5,342,305¹ since 1993 and the current grant has future funding commitments of \$1,385,000. Thus, over the past 10 years, NSF funding has averaged approximately \$534,200 annually. The funding to the IGBP Secretariat is provided by a total of 10 federal agencies pursuant to the U. S. Global Change Research Program. During FY 2002, NSF's share of IGBP funding was 13 percent, with the National Aeronautical Space Agency (NASA) providing the largest share at 61 percent. Other contributing agencies include Departments of Energy and Agriculture; Department of Interior/U. S. Geological Survey; the Environmental Protection Agency, Department of Health and Human Services/National Institutes of Health, Department of Commerce/National Oceanic and Atmospheric Administration (NOAA), and the Smithsonian Institute.

NSF funding for PAGES has totaled \$1,157,144² since 1998 and the current award has future funding commitments of \$200,000 annually for fiscal years 2003 and 2004. NOAA has provided approximately 50 percent of the total funding awarded for PAGES.

OBJECTIVES, SCOPE, AND METHODOLOGY

The audit objectives were to evaluate (1) the adequacy of NSF policies and procedures for managing and monitoring awards to the IGBP to ensure compliance with applicable federal regulations and award terms and conditions and (2) whether IGBP was administering NSF grant funds in accordance with award terms and conditions. This report addresses NSF administration of IGBP awards for funding both the IGBP Secretariat and the PAGES core project office from 1993 to 2003, with primary emphasis

Awards to the IGBP Secretariat: OCE 9320648 for \$2,437,305; OCE 9619897 for \$1,595,000; and GEO 0112185 for \$1,310,000 awarded through 2003.

² Awards to IGBP for PAGES: ATM 9803960 for \$957,144 and ATM 0123150 for \$200,000 through 2003.

on the most current years. We reviewed applicable federal and NSF policy and procedures, NSF award jackets, and interviewed cognizant NSF officials to gain an understanding of the steps taken to award and monitor the IGBP grants.

In evaluating the adequacy of IGBP's administration of the NSF grants, we reviewed the organization's internal financial and management controls to safeguard NSF funds. We reviewed the IGBP Secretariat expenditures reflected in its accounting records and financial reports and performed detailed testing and review of expenditures incurred from January 1, 2001 to June 30, 2002. The review of financial transactions was extended to other periods as deemed necessary. We toured the IGBP offices and interviewed key IGBP and Academy personnel to gain an understanding of management controls in place. Additionally, we interviewed ICSU and PAGES officials concerning their relationships with the IGBP. However, we did not perform a detailed review of the financial transactions associated with the NSF awards to the IGBP for support of PAGES.

We conducted our audit in accordance with the Comptroller General's *Government Audit Standards* and included such test of accounting records and other auditing procedures, as we considered necessary, to fully address the audit objectives.

FINDINGS AND RECOMMENDATIONS

A. NSF Lacks Documentation Verifying Legal Status of Foreign Grantee

Contrary to established NSF procedures for new awardees, grant files did not contain documentation verifying the legal status of IGBP or its host organization, the Royal Swedish Academy of Science (Academy). Yet, NSF awarded \$6.5 million to fund IGBP, which is not a legal entity, and PAGES, one of its core projects. Similarly, we also found that the PAGES core project office has not established itself as a legal organization. Further, NSF grant award letters were confusing as to which organization was the grantee because the award letters cite the IGBP as the awardee instead of the Academy, which NSF says was the intended awardee. In so doing, NSF has placed itself in a vulnerable and undesirable position of having limited legal recourse, if necessary, to seek remedies against the IGBP for improper use of NSF grant funds. This undesirable position occurred because NSF was unable to demonstrate what documentation was requested and used to evaluate the legal standing of the Academy or the IGBP to receive NSF awards. It is especially important to document NSF's determination given the differences and complexities of the organizational laws in various foreign countries. Further, according to NSF officials, their automated grant letter system inadvertently shortened and did not include the name of the Academy as the awardee institution in the grant award letters.

NSF Requires Documentation Reflecting Awardee Legal Status

NSF's Prospective New Awardee Guide (Guide) provides information assisting new awardees in preparing documents NSF uses to evaluate the viability of an organization and its capability for administering and accounting for grant funds. The awardee information required is specified in the *Checklist*, of the Guide. Item 2 of the *Checklist* specifically requires submission of "Documents showing the legal establishment and structure of [the] organization (see Section B.2 of Guide)." Section B.2 of the Guide, *Organizational Establishment and Structure*, states that the grantee must "**provide an official or published statement of purpose of your organization and of the powers, which have been granted to it to enter into contractual relationships and/or accept awards (e.g. articles of incorporation, by-laws) . . .**" (emphasis added).

This is particularly important for foreign awardees because their legal standing and organizational structure can be very different from domestic grantees typically funded by NSF. Our audit revealed that determining the legal status of awardee institutions can be a very complex process. The information required to evaluate the legal status of a foreign awardee depends on the organizational laws of the country where the grantee is located. The applicable laws would have to be reviewed to determine the types of documentation required by a country to establish and evidence an organization's legal status. As such, determining the legality of a foreign grantee can be a rather complicated endeavor.

For example, our review identified that Sweden has four main forms of legal organizations: companies limited by shares, partnerships, associations, and foundations. Within each of these four main groups, statutes regulate the various types of legal corporations with one exception, the non-profit association which is regulated by case law. If the IGBP were to establish itself as a legal entity, it would most likely be considered a non-profit association in Sweden, thus be regulated by case law. Consequently, research of applicable case laws would be required to identify the various requirements necessary to establish the IGBP as a legal Swedish organization. Because organizational laws vary between countries, NSF would have to handle such legal determinations on an individual grantee basis and would require technical legal assistance in making such evaluations. Also, discussions with the responsible NSF program office would be imperative in obtaining a full understanding of the organizational structure of the awardee.

Lack of NSF Documentation Verifying Grantee Legal Status

Contrary to established NSF grant procedures, there was no documentation available in NSF files verifying either the legal status of the Academy or the IGBP or defining their respective relationships and responsibilities for administering the NSF awards. Also, we found that PAGES had not taken steps to establish itself as a legal organization. Yet, from 1993 through 2003, NSF awarded approximately \$5.3 million for support of the IGBP Secretariat as well as \$1.2 million to the IGBP for support of PAGES.⁴

Pursuant to our request for such documentation, NSF provided us a copy of a Memorandum of Understanding regarding IGBP support for the International Global Change System for Analysis, Research, and Training (START). While useful in describing IGBP's role in sponsoring this activity in conjunction with several other international global research organizations, the document did not provide any information pertaining to the legality of the IGBP or the Academy. Thus, NSF was unable to demonstrate what documentation was requested and used to evaluate and verify the legal status of either the Academy or the IGBP as institutions capable of receiving NSF awards.

Further, the NSF grant award letters were confusing in identifying who the awardee institution was for the IGBP and PAGES funds. The IGBP is shown as the awardee on the grant letters, but NSF stated that the Academy was the intended awardee. NSF stated that this error occurred because of limitations in its automated Award Management and Award Letter System. According to NSF's Division of Grants and Agreement (DGA) officials, the System automatically generates award letters and because of the field size

³ Awards to the IGBP Secretariat total \$5,342,305 as follows: OCE 9320648 for \$2,437,305; OCE 9619897 for \$1,595,000; and GEO 0112185 for \$1,310,000.

⁴ Awards to IGBP for PAGES total \$1,157,144 as follows: ATM 9803960 for \$957,144 and ATM 0123150 for \$200,000.

limitation for institution name, the System inadvertently moved the name of the Academy into the field for the institution address. Thus, the grant letters mistakenly reflected only the name of the IGBP as the awardee institution; and the name of the Academy was only shown as the addressee.

No Written Agreements Establishing Relationships Between the Organizations

Without clear documentation of the intended awardee and legal status, NSF risks making awards to institutions which may not be judicially enforceable. In the event that the organization misspends NSF's funds, NSF would not be able to take legal action because a non-legal organization cannot be held liable in a court of law. For example, the IGBP is associated with both the Academy and the International Council of Science (ICSU), its founding organization. The Academy ⁵ provides the office space and accounting and other administrative support services for the IGBP and employs the IGBP staff. As the founding organization, the ICSU ⁶ Executive Board appoints the IGBP Executive Director and the Officers and members of the IGBP Scientific Committee, which are the principal decision-making bodies guiding IGBP's scientific program.

However, during the time of our audit, neither the Academy or ICSU accepted legal responsibility for the IGBP. Further, there was no written agreement defining the relationship and the associated responsibilities between the three organizations. Similarly, there was no such agreement between the Academy, the IGBP, and the PAGES core project office. Specifically, the Academy legal advisor stated that the Academy would not be liable for any IGBP programmatic activities such as procurement contracts because the Academy was not involved in such matters and was not a party to any of the contracts. The Academy's Legal Advisor expressed the opinion that ICSU, as the founding organization, would have such responsibility because it was providing IGBP program direction. However, discussions with the ICSU Executive Director disclosed that ICSU also did not assume any legal responsibility for IGBP matters. He stated that ICSU assumed no legal responsibility for any of their sponsored international groups because such organizational arrangements were between the groups and their host country or institution. Additionally, both Academy and IGBP officials stated that the PAGES funding was strictly passed-through their bank accounts and neither had any responsibility for financial oversight or monitoring of the funds.

Pursuant to concerns raised during our audit, the IGBP, the Academy, and ICSU recently executed a written agreement in May 2003 defining the relationship and responsibilities of each organization. In the new agreement, the Academy has recognized the IGBP

⁵ The Academy is an independent, non-governmental scientific society, founded in 1739, with the overall objective to foster the sciences. The Academy represents Sweden in a number of international organizations including ICSU and houses a large number of national committees belonging to the various ICSU discipline-oriented unions.

⁶ ICSU is comprised of 98 National Science Members from around the world who are required to pay annual dues for their membership.

Secretariat as part of its international outreach activities and contrary to its original position, has agreed to accept legal responsibility for the IGBP Secretariat's program activities. According to the Academy Legal Advisor, under the new agreement, the Academy has also agreed to be a party to the NSF grant with respect to future IGBP activities. As such, he stated that the Academy should establish new procedures to fulfill its responsibilities as the NSF grantee for the IGBP. However, the Legal Advisor stated that in the past, the Academy was not involved in the NSF grants awarded to the IGBP and accepted no legal responsibility for the IGBP activities prior to the May 2003 agreement.

While this new agreement clarifies our concerns about the legal responsibility of the IGBP, it does not state whether the Academy has accepted legal responsibility for the funds awarded to support the PAGES core project office. Similar to the IGBP, PAGES has not established itself as a legal organization. The Academy has agreed to be the host organization only for the IGBP Secretariat, not the PAGES core project office located in Switzerland. Although PAGES was one of IGBP's core projects and is governed by a Scientific Steering Committee appointed by the IGBP Scientific Committee, there is no contractual relationship between the Academy/IGBP and the PAGES core project office. Since the IGBP passed-through \$1.2 million of funds to PAGES without a written contractual agreement, it is not clear whether NSF would have legal recourse against PAGES in the event NSF funds are misspent. As a separate organization and a NSF subrecipient, the PAGES core project office should have legal standing in order to enter into a subaward agreement with the Academy/IGBP.

Conclusions

To ensure appropriate stewardship over federal grant funds, it is essential for NSF to verify the legal status of awardees. Additionally, NSF awardees need to be clearly identified in grant award letters and be informed and knowledgeable of NSF accountability requirements for managing and administering NSF awards. Given the Academy's recent acceptance of legal responsibility for the IGBP and NSF's recent clarification of the Academy as the awardee institution, NSF needs to officially notify the Academy that they are the awardee institution. This is particularly important given the fact that the Academy was not involved in the NSF grants in the past and did not view itself as the NSF awardee. As a result, the Academy is unfamiliar with federal grant requirements; thus, NSF needs to provide assistance and guidance to the Academy to assure that they understand their responsibilities for adherence to the award conditions and monitoring the project's performance.

Further, NSF must identify a legal awardee for the PAGES funding. The Academy has not accepted legal responsibility for such funding in the May 2003 agreement and PAGES has not taken steps to establish itself as a separate legal organization.

Recommendations:

We recommend that Director, DGA, in consultation with the NSF General Counsel:

- I a. Ensure that Grant Officers are requesting and reviewing documentation verifying the legal status of new foreign awardees as required by current NSF procedures. Records of such determinations should be maintained in NSF files evidencing their evaluation and conclusion on the legality of the awardee. Assistance from the General Counsel should be requested, as needed, given the complexity of making such determinations for foreign organizations.

We recommend that the Director, DGA:

- Ib. Officially notify the Academy that they are the NSF awardee institution and assess whether it understands the accountability requirements associated with federal awards and its responsibilities for overseeing and monitoring the IGBP Secretariat's grant activities and its adherence to grant terms and conditions.

We recommend that Director, DGA, in consultation with the NSF General Counsel and the Division Director, Division of Atmospheric Sciences (ATM):

- Ic. Coordinate with the Academy, the IGBP, and PAGES to identify a legal organization to accept responsibility for NSF funding to support the PAGES core project office.

NSF Comments

NSF's position is that the grants were awarded to a legal entity. During subsequent meetings, NSF stated that it always intended the awardee institution to be the Academy and not just the IGBP as inadvertently identified in the grant award letters. Additionally, NSF believes that the Academy has agreed to accept legal responsibility for the PAGES funding.

IGBP Comments

The IGBP agrees that the Secretariat did not have a clear, written legal status when it was established. However, since our audit, a formal written agreement has been executed between the Academy, IGBP, and ICSU defining the relationship between the three organizations. The IGBP states that "the legal status of the PAGES core project office should be clarified and that grants should be made directly to the PAGES core project office and not through the IGBP Secretariat."

OIG Response

Based on the disagreement between NSF and the OIG concerning whether the Academy or the IGBP was the awardee institution, we have revised the audit finding to reflect NSF's position. Accordingly, we have revised the audit recommendations based on these changes and also to reflect corrective actions already taken by NSF, IGBP, and the Academy.

To implement recommendation 1 a, Grants Officers should be reminded of the importance of verifying the legal status of new awardees to accept NSF awards, particularly in the case of foreign awardees where such a determination could be rather complicated. Records of such evaluations should be retained in grant files to demonstrate NSF's basis for making such determinations.

To implement recommendation 1b, we are recommending that NSF specifically notify the Academy that they are the grantee institution given the past confusion concerning the award letters and the fact that the current grant letter continues to be only addressed to the IGBP Executive Director. Also, because the Academy Legal Advisor expressed the need for the Academy to develop procedures to discharge their new duty for accepting legal responsibility for the IGBP, it is imperative that NSF assures that the Academy is notified of and understands accountability requirements associated with the NSF awards.

To implement recommendation 1c, NSF must coordinate with the Academy, the IGBP, and PAGES to identify a legal organization willing to accept responsibility for NSF funding. In its comments, the IGBP stated that "the legal status of the PAGES core project office should be clarified and that grants should be made directly to the PAGES core project office and not through the IGBP Secretariat." Based on these comments, we believe that it is clear that the Academy has not agreed to accept responsibility for the NSF funds currently passed-through to the PAGES core project office. The Academy is the host organization only for the IGBP Secretariat, not the PAGES core project office. Unlike the IGBP, the PAGES staff are not Academy employees and the Academy does not provide accounting for PAGES expenditures or include the PAGES funding in their financial statements. As discussed in Finding C (see page 17), the Academy/IGBP passes-through the funding to PAGES without any financial or administrative oversight. Therefore, since PAGES itself is not a legal organization, NSF must find an organization with appropriate legal status to accept responsibility for the grant funds.

B. IGBP Grant Agreements Lack Adequate Provisions For Ensuring Financial Cost Accountability

NSF award agreements did not clearly identify the financial requirements for how the IGBP was to account for its NSF funds. Although the IGBP awards were cost reimbursable type grants, NSF removed from the award agreements the fundamental financial requirements essential for providing cost accountability for these types of awards. Specifically, IGBP was not required to separately identify and account for NSF grant costs claimed for reimbursement. As such, the Academy, which is responsible for accounting for IGBP funds, did not establish separate cost accounts for NSF funds received. Instead, its accounting system commingled NSF funds with monies that IGBP received from all other sources and could not segregate the NSF grant costs. As a result, stewardship over NSF grant funds was compromised because NSF could not identify how IGBP had spent its funds under these cost reimbursable type awards. This occurred because NSF did not have an award instrument suitable for the atypical nature of the IGBP awards, but modified their standard award conditions used for cost reimbursable type grants without addressing the implication of the changes on its stewardship responsibilities.

Separate Accounting of Grant Funds Required

The requirement to separately account for costs incurred on each federal award is established by Office of Management and Budget (OMB) Circular A-110⁷ standards for financial management systems. These OMB standards prescribe the elements of a recipient's financial management system necessary to provide adequate fiscal accountability over grant funds. Essentially, an awardee's accounting system is required to have the capability to adequately identify the source and application of funds for each federal award. Specifically, Paragraph 21(b) requires a recipient's financial management system provide for:

"Accurate, current, and complete disclosure of the financial results of **each** federally-sponsored projector program. .." (emphasis added).

NSF requires grantee compliance with this cost segregation requirement by incorporating OMB Circular A- 110 in its Grant General Conditions, which are included in all NSF cost reimbursable grant agreements. This segregation requirement is particularly important for cost reimbursable awards because:

" ... NSF agrees to reimburse the grantee for work performed and/or costs incurred by the grantee up to the total amount specified under the grant. Such

⁷ OMB Circular A-110 is entitled Uniform Administrative Requirements for Grants and Agreements With Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations

cost should be allowable in accordance with **applicable cost principles ...** Accountability is based primarily on technical progress, financial accounting, and fiscal reporting ... " ⁸ (emphasis added)

The applicable federal cost principles referred to above are established by various OMB Circulars. The Circulars specify and define the different types of costs allowed to be charged to cost reimbursable type grants and are incorporated by reference in the *Allowable Costs* provision⁹ of NSF's Grant General Conditions.

IGBP Unable To Identify Costs Incurred On NSF Awards

Contrary to the OMB and NSF standards, from 1993 to 2002, NSF issued three IGBP cost reimbursable type grants, but removed the cost segregation requirement necessary to ensure the financial accountability of these awards. In the first IGBP award, ¹⁰ NSF deleted the entire OMB Circular A-110 federal administrative grant requirements normally prescribed for cost reimbursable awards including the grant cost segregation provision. In two later IGBP awards made in 1996 and 2001, ¹¹ the NSF grant agreement required the IGBP to comply with "applicable federal requirements for grants," but deleted the standard reference to OMB Circular A- 110, which establishes those federal grant requirements including the cost segregation provision. However, all three IGBP award agreements included the standard *Allowable Costs* provision requiring compliance with federal cost principles, which cannot be implemented without segregation of NSF grant costs.

As a result of the elimination of the cost segregation requirement, the Academy's accounting system did not have the capability to separately account for the financial activity of the NSF grants. Rather, the system commingled NSF funds with monies received from all sources and could not identify which IGBP grant activities benefited from specific expenditures. Without separate accountability for NSF awards, IGBP was unable to identify exactly what portion of its total program costs were actually attributable to NSF grant funds and whether these expenditures were necessary,

⁸ Section 21 Oc(3) of NSF's Grant Policy Manual provides a definition for a cost reimbursement grant.

⁹ Article 12, *Allowable Costs*, paragraph a. states "The allowability of costs ... for work performed under this award ...shall be determined in accordance with the applicable federal cost principles ..." Paragraph b. provides a listing of the federal cost principles applicable to specific types of awardees including: OMB Circular A-122 for non-profit organizations, OMB Circular A-21 for public and private institutions of higher education, and OMB Circular A-87 for State and Local Governments.

¹⁰ Award OCE 9320648: Article 1, *Grantee Responsibilities and Federal Requirements*, was deleted in its entirety.

¹¹ Awards OCE 9619897 and GEO 0112185: Article 1b (which incorporates OMB Circular A-110) was deleted from the GC-1 for both awards.

reasonable, and allowable under federal cost principles as required by the *Allowable Costs* provision of its grant agreement.

Similarly, IGBP could not determine what portion, if any, of the IGBP's unspent funds were attributed to NSF grant funds. IGBP's financial reports for the five-year period from 1997 to 2001 revealed a surplus working capital balance averaging \$468,000 annually or 28 percent of its total annual expenditures. Normally, residual grant funds under cost reimbursable grants are to be returned to the NSF or offset against future funding increments. However, because IGBP did not track NSF expenditures separately, it is not possible to identify the portion of the residual funds that belongs to NSF.

NSF Award Conditions Not Suitable For Contribution Type Awards

NSF removed the OMB A-110 cost segregation requirement because a cost reimbursable type grant was not suitable for the nature of the IGBP activities NSF intended to fund. The objective of the IGBP award was to support the overall organizational entity and not a specific research project that NSF typically funds with cost reimbursable type awards. Indeed, our onsite IGBP review disclosed that a cost reimbursable grant was not a practical award instrument for providing NSF grant assistance to IGBP. The IGBP was involved in only one program dedicated to international scientific coordination and integration activities and its entire staff worked exclusively on this program. Accordingly, to require the IGBP to separately account for its grant cost, as required under a cost reimbursable grant, is not useful or justified in these circumstances since NSF is supporting the exact same IGBP effort as all the other contributing countries.

When NSF first issued the IGBP a grant in 1993, the grant proposal stated that "The NSF support will cover the US contribution to the IGBP Budget for 1993 and 1994, for which support is sought from 58 countries. ..." The IGBP grant budget clearly indicated that NSF was providing partial support of \$300,000 towards the IGBP's total annual operating cost of \$1,689,000. Even the NSF Program Manager's Review Analysis specified that "The IGBP Secretariat has requested a number of countries, including the United States, to share in funding of the centralized costs of the IGBP."

However, NSF did not have an award instrument for providing a "contribution" type award to the IGBP. Consequently, for administrative efficiency, DGA chose to utilize the standard award terms and conditions, typically used for cost reimbursable type grants, and deleted certain provisions in order to address the special "contribution" nature of the NSF support. However, in so doing, DGA did not fully consider the implications of removing the basic financial requirement for cost segregation of NSF award funds, which are inherently essential to a cost reimbursable type grant.

The inconsistency over the appropriate award conditions required to provide for financial accountability for the IGBP grants is again illustrated by NSF's handling of a July 2002

IGBP award ¹² for support of its PAGES core project. The grant was issued using NSF's new Foreign General Grant Conditions (FGG - 07/02). However, the new FGG provisions contained the same inconsistencies with the award conditions as in the prior IGBP grant agreements. The new FGG provisions were patterned after NSF award terms and conditions typically used for cost reimbursable grants and again did not require grant cost segregation but continued to require that grant expenditures meet cost allowability standards.

NSF Develops New Award Conditions for Foreign Contribution Type Awards

In January 2003, DGA issued new Foreign and International Awardee Conditions For Non-Research Projects to be used for contribution type awards to foreign grantees. These award conditions will be used for grants providing a "pre-determined fixed amount of NSF support" and the full amount "will be paid without regard to the actual cost subsequently incurred." Basically, the grants will be fixed amount awards. DGA officials stated these new foreign contribution type grant terms will be used as a starting point for grant agreements with foreign institutions and can be amended as required to address special or unique needs.

In using fixed amount awards, the financial accountability for NSF grant funds is shifted to the preaward stage. NSF's Grants Policy Manual states that for fixed amount grants: "the award amount is negotiated using the applicable cost principles or other pricing information as a guide." Therefore, DGA and the responsible program office are required to conduct a rigorous preaward analysis of the proposed IGBP costs to assure that the expenditures are necessary and reasonable for the conduct of the project and are expended for the types of costs typically allowable under federal cost principles. Thus, the IGBP proposal budget and the budget justification will be required to disclose and describe the various types of expenditures for the entire IGBP program in sufficient detail to allow for such a NSF cost analysis. Due consideration must be given to such factors as IGBP's surplus working capital balance as discussed above and the opportunities for improved management of overall IGBP program funds as discussed in Finding D (page 24) of the audit report. Performing such a cost analysis for fixed amount awards should be coordinated with the Division of Acquisition and Cost Support (DACS), which currently has the agency responsibility and expertise for performing such reviews of proposal budgets. We commend DGA for developing these new award conditions for foreign contribution type awards and believe that the concept of a fixed amount award versus a cost reimbursable type grant is appropriate for the IGBP.

Conclusion

Nevertheless, NSF continues to fund the IGBP and PAGES awards using a cost reimbursable agreement rather than a fixed amount award. Although the new grant terms

¹² Grant ATM 0123150

for foreign contribution type awards would be more appropriate, NSF amended the IGBP Secretariat core support grant on August 6, 2003, changing the award conditions to the Foreign Grant General Conditions (FGG), which continue to provide for a cost reimbursable type grant. Similarly, the PAGES award was amended on May 16, 2003 and continued support using the FGG. Given NSF's recent grant amendments, NSF needs to modify the FGG to include a provision requiring the Academy and PAGES to segregate NSF grant costs in their accounting system. Currently, the FGG does not include such a provision and as discussed, segregation of the NSF grant costs is the fundamental requirement for providing financial accountability under a cost reimbursable award. Additionally, NSF must specify the cost principles to be used for determining the "allowable costs" under these cost reimbursable type grants.

Elimination of the cost segregation requirement from past and current IGBP awards has resulted in a loss of enforceability of the grant agreements as cost reimbursable type grants and therefore, financial accountability over NSF grant funds. DGA has recently developed new grant terms for contribution type awards to foreign institutions that would provide a "pre-determined fixed amount of NSF support." We continue to believe that these new grant terms would be more appropriate for the IGBP grants. However, because the new grant terms will basically provide for fixed amount grants, NSF would need to perform a rigorous preaward review of the IGBP proposal budget to assure the costs are necessary and reasonable for the conduct of the project and are expended for the types of costs typically allowable under federal cost principles.

Recommendations:

We recommend that the Director, DGA:

2. Amend the FGG for the current IGBP Secretariat and PAGES core support awards to require the segregation of grant costs and establish cost principles for determining "allowable costs" under the grants; or

If funding is provided through a fixed amount award using the Foreign and International Awardee Conditions For Non-Research Projects, perform a rigorous preaward analysis of proposed IGBP Secretariat and PAGES costs to assure the expenditures are necessary and reasonable for the conduct of the project and are for the types of costs typically allowable under federal cost principles. The analyses should be consistent with the preaward reviews performed for any NSF fixed amount award.

NSF Comments

NSF takes exception with our conclusion that the Foundation could not determine how U. S. funds were spent by the IGBP. NSF's position is that while the Foundation "may not be able to determine exactly how much of their funds have been allocated to various

funding categories, e.g. salaries vs. travel vs. computers vs. communications," they are maintaining effective oversight of IGBP and PAGES programs and are confident that the awardee institution has accepted full programmatic responsibility for the awards. Also, NSF states that the audit finding seems to criticize the IGBP for being involved in only one program; and does not agree with our conclusion that a cost reimbursable grant is not useful or justified for the NSF award to the IGBP for this reason.

IGBP Comments

IGBP's position is that required changes to its accounting system to segregate NSF grant costs to precisely follow NSF regulations is not possible. As part of the Academy, IGBP stated that they are required to follow the Academy's system of financial accounting and such changes to the Academy's financial systems by the IGBP are not practical.

OIG Response

Our audit finding only addresses the lack of adequate financial cost accountability for the IGBP awards, not programmatic accountability as discussed in NSF's comments. Our review did not include an evaluation of the adequacy of NSF programmatic oversight over the IGBP grants. Furthermore, contrary to NSF's comments, we did not intend to criticize the IGBP for being involved in only one program; we were only making a statement of fact to distinguish the organization from many NSF awardees that are typically involved and receiving grants for multiple projects or programs.

However, NSF was correct that this was our basis for concluding that a cost reimbursable grant is not a practical award instrument for providing support to the IGBP. Our position is that NSF is supporting a portion of the exact same IGBP effort as all other contributing countries, thus to require the IGBP to segregate the NSF grant costs was not reasonable. This was the basis for our position that a fixed amount award would be more appropriate for the "contribution" nature of the NSF funding. However, given NSF's recent actions to continue IGBP and PAGES funding using cost reimbursable type grants, we have modified our recommendations to clarify additional corrective action needed based on these current actions.

If NSF continues to use cost reimbursable provision, we recommend that NSF require the segregation of grant costs and establish specific cost principles to provide for financial cost accountability and enforceability of the FGG. To illustrate, without cost segregation, NSF will not be able to determine if IGBP participant support costs are not "diverted by the grantee to other categories of expense without the prior written approval of the NSF Program Officer" as required by the FGG and a special condition for the grant. This is particularly important in light of the fact that current NSF funding for participant support costs is \$91,930 or 20% of IGBP's total annual funding

Further, under a cost reimbursable type grant, NSF is required to ensure that IGBP maintains employee time and effort records so that salary charges to the grant can be

adequately supported. The grant budget for the current IGBP Secretariat grant specifies that NSF will fund 50 percent of the salary and fringe benefits for selected staff totaling \$253,215. Thereby, without time and effort records, NSF would be unable to determine if these IGBP employees spent half of their time or effort dedicated to the NSF portion of their overall program activities.

To conclude, we still believe that it would be more appropriate to provide the U.S. contribution for supporting the IGBP and PAGES programs through a fixed amount award versus a cost reimbursable type grant. The new Foreign and International Awardee Conditions For Non-Research Projects, issued by DGA in January 2003 could be used to establish such a fixed amount type grant. Consequently, should NSF eventually amend the IGBP and PAGES grants using these other foreign grant conditions, NSF must perform a rigorous preaward analysis of the proposed IGBP and PAGES grant costs, as is typically required for a fixed amount award.

C. NSF Needs To Improve Administration of Pass-through Funding

NSF did not establish clear responsibility and accountability for overseeing and monitoring of \$1.3 million provided to two IGBP core project offices between 1998 and 2002. Of this amount, \$145,000 was provided by a NASA interagency agreement. NSF awarded the grants directly to the IGBP, instead of to the core project offices, because the existing IGBP grants provided an established funding mechanism. However, because IGBP had agreed only to act as a conduit to transfer NSF funds to the core project offices, the traditional federal and NSF award provisions requiring the IGBP, as the primary grantee, to monitor subrecipient activities were not applicable. Therefore, the IGBP did not monitor pass-through funds to one of the core project offices and only exercised limited monitoring of funds to the other core project office. Most importantly, the IGBP did not establish subaward agreements contractually obligating the core project offices to comply with the financial and administrative grant requirements that typically would flow-down to NSF subrecipients. Consequently, NSF had less assurance that core project office expenditures were properly spent for authorized grant purposes and had limited recourse if grant funds were misspent. This occurred because NSF did not critically evaluate the unusual nature of the funding arrangement to the IGBP core project offices in order to establish the required award terms necessary to provide for clear financial accountability for the pass-through grant funds.

Grant Monitoring and Oversight Responsibilities

As stewards of federal grant funds, federal agencies have the duty to exercise prudent oversight and monitoring of government funds to ensure public monies are spent properly. To protect the Federal Government's interests, OMB and NSF policy and procedures require grant recipients to be held accountable both for the performance of the approved project and the appropriate expenditure of funds. To accomplish this objective, federal awarding agencies are required to issue grant agreements contractually obligating recipients to terms and conditions that establish legal and financial responsibility and accountability for the awarded funds. As such, the grant agreements specify the requirements for how programmatic, financial, and administrative accountability will be provided and who is responsible for monitoring and providing oversight of grant-supported activities to ensure accountability.

Additionally, when grant funds are passed-through or transferred to a subrecipient, OMB and NSF procedures specify that the primary grantee is responsible for the programmatic and administrative performance of its subawardees. As such, the primary grantee is required to establish subaward agreements contractually obligating the subrecipient to terms and conditions imposed by federal and NSF grant requirements. Article 8 of NSF's Grant General Conditions identify the specific NSF award provisions required to flow-down to all subrecipients. Furthermore, NSF procedures require the submission of a

¹³ Paragraph B.2.c. of Chapter X, "Award and Administration," of NSF's Proposal and Award Manual.

separate budget for each subaward and separate identification of total subaward funding in the overall NSF grant budget.

NSF Award Instruments Did Not Provide Clear Accountability For Pass-Through Funds

Contrary to the established OMB and NSF requirements, the NSF award agreements with the IGBP did not establish clear accountability for monitoring and managing \$1.3 million passed-through to two IGBP core project offices. While NSF made the awards to the IGBP, the IGBP passed the funds through to the core project offices and assumed only limited responsibilities for financially overseeing how these funds were to be accounted for or used. IGBP passed the funds through to the Past Global Changes (PAGES) office located in Bern, Switzerland and the Data and Information Systems (DIS) office located in Toulouse, France.

A. PAGES Funding

From 1998 to 2002, NSF awarded two grants totaling \$1.2 million¹⁴ to the IGBP for pass-through to the PAGES core project office. The funding was provided as the US contribution for supporting half of the PAGES operational expenditures with the remaining half provided by the Swiss NSF. A May 1995 agreement between the NSF and the Swiss NSF stated that the IGBP had agreed to act as a conduit to "forward" the funds to the PAGES core project office. Because NSF made an award to a grantee that did not have a substantive role in the proposed project and would basically act as a transfer agent for another entity, the typical federal and NSF grant requirements for the primary awardee to monitor the subrecipient's expenditure of grant funds did not apply to the IGBP.

Further, since the IGBP had only agreed to act as a transfer agent for the PAGES funds, IGBP did not establish subaward agreements with PAGES. Therefore, the financial and administrative terms and conditions, typically required to flow-through and contractually bind subrecipients, did not apply to PAGES. Additionally, the overall NSF grant budget did not identify the pass-through funding as subaward funding as required by NSF procedures.

B. DIS Funding

In 1998, NSF provided additional funding of \$145,000 on an existing IGBP award¹⁵ for supporting DIS core project office operations. NASA originally provided these funds to NSF through an interagency agreement. Supporting grant documentation and discussions with the NSF program manager indicated that the existing IGBP grant was used as an

¹⁴ Award ATM 98 03960 for \$957,144 and ATM 01 23150 for \$200,000 through 2003 totaled \$1,157,144.

¹⁵ Amendment 1 under OCE 96 19897 provided \$545,000 of which \$145,000 was for the DIS project office.

established funding mechanism to transfer the NASA funds to the DIS project office. Similar to the PAGES funding, the NSF grant budget did not identify the DIS funds as subaward funding as required by NSF procedures. Although the IGBP did provide limited oversight of DIS grant-supported activities, they did not establish a subaward agreement with the DIS project office. As such, the financial and administrative terms and conditions, typically required to flow-through and contractually bind subrecipients, did not apply to the DIS core project office.

In addition, NASA's interagency agreement with NSF was not clear in defining whether NSF or NASA was responsible for managing the funds passed-through to the DIS project office. As the awarding agency for the DIS funding, however, DGA officials stated that NSF was the organization legally responsible for administering the funds. Yet, both IGBP and NASA officials both understood NASA to be responsible for managing the funds. The IGBP Executive Director stated that he was led to believe that NSF was just a "pass through mechanism" and had nothing to do with the approval or allocation of the NASA funds for DIS. He stated that NASA officials provided instructions on ways in which the funds could be expended and the process by which the funds could be accessed.

Given the confusion over which agency was responsible for administering the DIS funding, NASA continued to manage the funds and authorized the IGBP, as the primary grantee, to use the remaining grant funds for other purposes after the closure of the DIS core project office. Specifically, four months after the expiration of the NSF award to the IGBP, NASA officials orally authorized the IGBP to use the remaining \$70,000 in unspent DIS funds for a project to be undertaken by another IGBP core project office. Thus, in December 2000, IGBP drew down the \$70,000 in remaining grant funds. Over the years, IGBP has maintained the funds and has continued to obtain NASA program approval for specific expenditures. As of October 2002, our review disclosed that \$34,455 still remained uncommitted and correspondence with NASA indicated no specific plans for expenditure.

DGA Needs To Critically Review Unusual Foreign Funding Arrangements

DGA did not have effective procedures for addressing the accountability issues associated with using the IGBP as a conduit for passing funds through to its core project offices. Although DGA is responsible for the appropriateness of proposed NSF funding arrangements from a business, policy, regulatory, and legal perspective and working with program offices to develop appropriate award language to address special or unique conditions, DGA did not appear to recognize the atypical nature of making an award to a grantee that did not have a substantive role in the proposed project and would simply act as a funding conduit for another organization. As such, DGA did not critically review the underlying documentation for the recommended IGBP grants for funding the core project offices or thoroughly discuss the proposed awards with cognizant NSF program officials. Such efforts would have resulted in a better understanding of the unique and unusual

nature of the proposed funding arrangements and the agreements reached between the applicable parties.

Foremost among these unusual factors was that the IGBP had only agreed to act as an agent to transfer the funds to the core project offices, but not to oversee and monitor the funds as required of traditional NSF primary grantees. DGA should have worked with the program offices to develop special award language and/or terms to address this factor and to ensure financial accountability over NSF grant funds was not compromised. Yet, DGA did not develop any special terms for these awards and the typical NSF award conditions used did not establish clear accountability for the core project office expenditures.

Subawardees Not Required to Comply With NSF Grant Agreement

As a result, accountability was lost over NSF grant funds spent by the two IGBP core project offices. When NSF chose to use the existing IGBP grants as a convenient mechanism for core project office funding, it was the IGBP, not the core project offices, that was the recipient organization and legally bound to the NSF award terms and conditions. When IGBP did not establish subaward agreements with the core project offices flowing-down the required NSF award terms and conditions, the core project offices were not legally bound to any federal or NSF grant requirements. Consequently, NSF would have limited recourse if the grant funds were mismanaged or misused.

Similarly, without a clear understanding of whether NSF or NASA was responsible for administering the funds passed through to the DIS project office, the IGBP obtained the final \$70,000 in unspent DIS funding after expiration of the NSF grant. As the awarding agency, NSF had oversight responsibilities for the funding and not NASA. Thus, NASA did not have the authority for approving the use of the remaining DIS funding.

Conclusion

In the future, joint DGA and program office efforts are needed to critically review the unusual nature of proposed foreign funding arrangements providing for pass-through funding. Such efforts should be directed at thoroughly discussing and reaching a consensus on NSF's funding objectives for the foreign organizations and how best to develop and structure an appropriate award instrument to meet those objectives. Emphasis must be given to developing award terms and conditions that will protect the integrity of NSF's responsibility for financial accountability of grant funds.

Recommendations:

We recommend that the Director, DGA, in consultation with the Director, ATM:

- 3a. Evaluate the current IGBP award for supporting PAGES and amend, as appropriate, to ensure that there are adequate terms and conditions providing for clear accountability over grant funds and that the PAGES core project office is contractually required to comply with the NSF award terms and conditions. (This recommendation will be necessary, if the Academy is willing to accept responsibility for the NSF funding to support the PAGES core project office. See related recommendation 1c page 8.)

We recommend that the Director, DGA:

- 3b. Not utilize the IGBP grants in the future to provide pass-through funding to IGBP core project offices without identifying such funding as subawards in the NSF grant budget and ensuring the pass-through funding is monitored to assure that the IGBP establishes appropriate subaward agreements flowing-down federal and NSF grant requirements to the subrecipient.

We recommend that the Director, DGA, in consultation with the Assistant Director, GEO:

- 3c. Determine an appropriate program purpose for the remaining \$34,455 of DIS funding and amend the closed IGBP award, as appropriate, under existing grant procedures, to allow for the expenditure of the funds.

NSF Comments

NSF does not agree with our statements that the IGBP "did not have a substantive role in the proposed project" and basically acted "as a transfer agent for another entity." NSF believes that IGBP played a substantive role in both the PAGES and DIS core project offices, because as IGBP projects conducted under their aegis, IGBP regularly reviewed both projects. In addition, NSF stated that we should give consideration to changes already made by IGBP on how it manages its pass-through funds. With respect to the funds remaining from the support of the DIS core project office, it is NSF's position that "these funds may still be utilized by IGBP in a manner that would be appropriate for the IGBP, NASA, NSF, and the USGCRP."

IGBP Comments

In respect to the remaining DIS funds, IGBP takes exception that they behaved improperly in any way. IGBP emphasized that they were given and followed very clear

directions by NASA on how the funds could be expended and accessed and followed these guidelines carefully. They stated that "the problem lies on the US side, and needs to be resolved through discussions between NSF and NASA." Also, as delineated in its comments to Finding A, **IGBP** states that the PAGES "grants should be made directly to the PAGES core project office and not through the IGBP Secretariat."

OIG Response

Our statement that IGBP "did not have a substantive role in the projects" refers to the fact that IGBP did not expend any portion of the NSF funds awarded for support of the PAGES and DIS core project offices. Our statement was not meant to infer that the IGBP did not exercise programmatic oversight of its core project offices, because we did not evaluate the adequacy of IGBP programmatic oversight over its core project offices. Therefore, based on NSF comments, we have made revisions to the audit finding to clarify that we are only addressing the adequacy of IGBP financial and administrative oversight of the pass-through NSF funding.

Further, we agree with IGBP's comment that they did nothing improper in obtaining the final drawdown in unspent DIS funds because it was unclear whether NSF or NASA had programmatic responsibility for the funds. Thus, we have revised the audit finding accordingly to reflect their comments.

Because NSF did not respond to any of the audit recommendations, it was unclear what their position was on implementing any corrective actions. We did delete our recommendation requesting NSF to establish internal procedures requiring review of all foreign arrangements with pass-through funding, but reaffirm the other audit recommendations.

To implement recommendation 3a, we believe that NSF must either amend the PAGES core support grant and award it directly to the PAGES core project office or direct the Academy/IGBP to establish a subaward agreement flowing-down NSF grant requirements. The IGBP Executive Director stated that the award should be made directly to PAGES and not through the IGBP Secretariat. However, if the funding continues through the Academy/IGBP, NSF must assure that the appropriate procedures are established at the Academy/IGBP for monitoring and overseeing the financial accountability for the funding. Contrary to NSF's statement, the IGBP has not notified us of any improvements in management of its pass-through funds that would affect its oversight of NSF funding transferred to PAGES. For either option, as discussed in finding A, NSF must clarify the legal standing for the PAGES core project office to accept award funding by having the legal capability to enter into contractual relationships.

To implement recommendation 3b, NSF must ensure that the Academy/IGBP is financially and administratively monitoring the pass-through funds and is establishing

subaward agreements contractually obligating subrecipients to NSF award terms and conditions

To implement recommendation 3c, we agree with NSF's position that "these funds may still be utilized by IGBP in a manner that would be appropriate for the IGBP, NASA, NSF, and the USGCRP." However, NSF must determine for what purpose the \$34,455 will be used by the IGBP and if this purpose is within the originally authorized scope of the NSF grant. Accordingly, NSF would have to assure that the surplus funds can be properly and legally spent for this purpose in accordance with established NSF grant procedures.

D. IGBP Has Opportunities To Strengthen Management Of Program Funds

Review of overall IGBP program expenditures disclosed that IGBP funds were used for purposes consistent with the NSF grant objectives and were spent on the types of cost typically allowable under federal cost principles. However, we noted certain areas where IGBP should strengthen its management of overall program funds to ensure expenditures represent the most cost effective utilization of resources. Specifically, IGBP needs to establish procedures for monitoring funds passed-through to its core project offices. Additionally, IGBP should take advantage of several cost savings opportunities to better use approximately \$246,000 in program funds over the next five-year period by increasing the use of electronic publication distribution, collecting interest earned on IGBP cash balances, and increasing emphasis on competitive procurement practices.

Without separate accountability for NSF grant cost, we were unable to identify what specific IGBP expenditures were attributable to the NSF grant funds. Therefore, we were not able to question or disallow any of the specific IGBP program costs reviewed during our audit. Because NSF only funds approximately 25 percent of overall IGBP program costs, the OMB federal grant standards would not specifically be applicable to all IGBP expenditures under the current cost reimbursable type grants. However, since the OMB federal grant requirements basically delineate prudent business management practices, we used these standards as a benchmark during our review for identifying the areas where IGBP had opportunities to strengthen management of its overall program funds. Our purpose was (1) to assist the IGBP in ensuring that overall program expenditures were the most cost efficient utilization of resources and (2) to provide NSF with a better understanding of overall IGBP operations to assist them in performing a cost analysis of proposed costs when establishing the U. S. contribution for supporting the IGBP as recommended in report finding B.

I. Travel Procedures for Core Projects

Prudent business management practices and OMB federal grant standards require a grantee to oversee funds distributed to subrecipients to ensure adequate programmatic and financial accountability. However, IGBP did not adequately monitor \$317,125 or 17% of its total 2001 program expenditures passed-through to its 8 core project offices for funding their annual Scientific Steering Committee (SSC) meeting costs.

Specifically, IGBP required the original SSC travel receipts to be maintained at the core project offices. When the funding was provided as an advance, a meeting budget was required to be submitted as a basis for IGBP payment and a final statement of actual expenses was required to be submitted after the meeting. However, the IGBP did not closely monitor the funds provided for the SSC meetings to ensure timely submission of the final statement of actual expenses. Also, the IGBP had never reviewed the supporting SSC documentation maintained at the core project offices to verify the meeting expenditures.

Our review of SSC supporting documentation for 4 of the 8 IGBP core project offices disclosed that the documentation was generally adequate to support expenditures. However, the Global Analysis, Integration and Modeling (GAIM) core project office located in Durham, New Hampshire, had received IGBP advances of \$75,430 for their 2001 and 2002 SSC meetings, but had only partially expended their funds and retained excess funds of \$30,800 or 41 %. This occurred primarily because fewer participants attended the SSC meetings than originally planned.

However, IGBP was not aware that GAIM retained such a large amount of surplus funds because they did not have established procedures for monitoring the expenditure of funds provided to their core project offices. Eight months after their 2001 SSC meeting, the GAIM project office had not submitted their final statement of actual meeting expenses to IGBP as required. Yet, IGBP advanced additional funds for their 2002 SSC meeting. Although these surplus funds were not inappropriately used for other purposes, close IGBP monitoring would ensure that the IGBP funds were allocated to the highest priority needs of the program.

IGBP needs to require timely core project office submission of final meeting cost statements to allow for the identification and appropriate reallocation of any surplus funds. Also, IGBP should periodically request and review original SSC travel receipts maintained by the core project offices to ensure meeting expenditures are consistent with established IGBP travel procedures and supported by adequate source documentation. Such oversight is particularly important given that IGBP passed-through 18% of their total program funds from 1997 to 2001 to fund core project office SSC meetings.

Recommendation:

4. We recommend that the Director, DGA, direct the IGBP to improve monitoring procedures over pass-through funds to core project offices to ensure that there is adequate programmatic and financial accountability over SSC meeting expenditures.

NSF Comments

NSF did not comment on the audit finding or recommendation.

IGBP Comments

IGBP agreed with the finding and stated that "are already taking procedures to implement this recommendation."

OIG Response

The actions taken by IGBP to implement the recommendation are appropriate. Therefore, NSF needs to determine if the specific corrective actions taken by IGBP fully resolve the audit finding.

II. IGBP Publications Need to Be Distributed Electronically

IGBP has opportunities to reduce publication printing and distribution costs by placing increased emphasis on using electronic media distribution. This is particularly important to address the concerns raised by the Executive Officers of the IGBP Scientific Committee pertaining to high publication costs and exploring alternative ways to reach the IGBP audience. Although the IGBP publication costs have increased significantly since 2001 and constitute approximately 10 percent of total annual expenditures, IGBP only has email addresses for 37% of their 10,682 quarterly newsletter recipients and has not comprehensively updated their overall publications mailing database of 14,906 recipients in over 5 years.

In an effort to reduce increasing publication cost, IGBP polled their 10,682 newsletter recipients in May 2002 by including a survey questionnaire in their newsletter. With a 10.7 % response rate, 383 individuals or 33.4% of the respondents wanted the newsletter electronically or not at all. Projecting the 33.4% result to the remaining newsletter recipients whom did not respond, we estimated that additional 3,185 newsletter recipients could possibly make the same decision. Using the 2001 annual newsletter cost of \$75,721 or \$7.09 per recipient, we projected a potential reduction of \$25,297 could be achieved annually in newsletter publication expenditures. Over a five-year period, the potential savings could total over \$126,000.

Similar savings in the IGBP biennial membership directory printing and distribution cost could possibly be achieved as well. IGBP published a new directory in 2002 and informed us that Swedish laws precluded personal information such as a membership directory from being published electronically. However, discussions with cognizant Academy staff disclosed that the Swedish law and the European Union laws had been revised in recent years to be less restrictive and business related information such as membership directories could now be published online. Consequently, IGBP could have potentially saved \$32,326 in 2002 membership directory printing and shipping cost to 3,642 recipients through online distribution. Over a five-year period, potential savings could total over \$64,000.

Additionally, IGBP needs to evaluate scientific publications to determine the feasibility of electronic distribution. In 2001, the IGBP incurred printing and publication costs of \$73,000 for distribution of several of their Science Series publications to 3,140 recipients. In the light of the fact that IGBP plans to publish more scientific publications in

forthcoming years, the potential for cost savings is increased. This is not to say that hard copies cannot be printed and distributed to educational institutions such as libraries and scientists in developing regions of the world without adequate internet access, but close scrutiny should be exercised over whether all recipients need hard copies or whether individuals would be satisfied to have online access.

Accordingly, IGBP should actively pursue opportunities to reduce its printing and distribution costs by taking advantage of electronic media distribution whenever possible. In particular, IGBP could conduct a survey of all publication recipients, requiring a positive response for continued receipt of printed copies of the various IGBP publications. Such an effort would allow the IGBP to comprehensively update their mailing list database, obtain email addresses for all recipients, and identify individuals and organizations whose needs would be satisfied with online access. However, it should be recognized that individuals in developing countries may not always have ready or adequate access to electronic distribution.

Recommendations:

We recommend that the Director, DGA, direct the IGBP to:

- 5a. Evaluate additional opportunities for distribution of the IGBP newsletter, biennial staff directory, and scientific publications on an electronic basis.
- 5b. Request email addresses of individuals and organizations on the IGBP mailing list database and identify those individuals/organizations, through a survey requiring a positive response, who prefer to receive publications electronically or are no longer interested.

NSF Comments

NSF did not comment on the audit finding or recommendation.

IGBP Comments

The IGBP generally agrees with the audit finding but emphasized that a balance must be maintained in the desire to reduce costs through electronic distribution of publications and the need to get IGBP scientific results out to users. IGBP stated that even though scientists in many developing countries have internet access, they are unable to download large files thus cannot access newsletters and science series documents. IGBP states that they are implementing Recommendation 5a and are considering implementing recommendation 5b in a modified form to ensure that developing country scientists continue to receive IGBP research results.

OIG Response

IGBP's agreement to implement the audit recommendations is appropriate. Therefore, NSF needs to determine if the specific corrective actions taken or planned by IGBP to implement the recommendations fully resolve the audit finding.

III. IGBP Does Not Receive Interest On Its Funds

Prudent business management practices and OMB grant standards require a grantee to maintain cash balances in interest-bearing accounts. Although the Academy had credited the IGBP with bank interest earned on its funds in prior years, this policy was changed in 1999. As such, the IGBP has not received any interest on significant cash balances maintained in the Academy's checking account in recent years. During 2001, IGBP maintained an average monthly cash balance of approximately \$440,000. Using the average 2.5 % interest rate earned on the Academy's three checking accounts, we estimate that the IGBP would have earned about \$10,900 on their funds during 2001. Over a five-year period, the IGBP could lose over \$54,000 in earned interest on its cash balances. If interest rates were to return to higher levels, this amount could significantly increase.

According to cognizant Academy officials, the interest policy was changed in 1999 because there was a significant reduction in interest earned on Academy investment accounts due to the drop in interest rates. Also, the Academy believed that the IGBP was already benefiting from a below market rental charge for the office space and utilities provided. IGBP officials confirmed that their rental charges have never been raised over the years and stated that an increase in rent to market rates would be greater than the interest earned on its funds by the Academy.

However, there is no agreement between the Academy and the IGBP specifying how interest earned on IGBP funds should be handled. Such an agreement between the two parties would permit the IGBP to better manage its budgeting of program funds. Otherwise, the IGBP cannot accurately determine total funds available for program purposes if such cost items are variable due to unwritten agreements. Prudent management practices require a discussion of the earned interest earned issue between the IGBP and the Academy to reach an agreed upon policy.

Recommendation:

6. We recommend that the Director, DGA, direct the IGBP to establish an agreement with the Academy on how interest earned on IGBP funds should be handled.

NSF Comments

NSF did not comment on the audit finding or recommendation.

IGBP Comments

The IGBP disagrees with the audit finding because they believe that IGBP receives a number of in-kind benefits from the Academy which amount to substantial savings compared to the full cost of the services. They stated that "It has been made clear that if the IGBP requests this interest back, we will likely be charged fully for services." Therefore, IGBP stated that they will not implement the recommendation.

OIG Response

We agree that IGBP is likely receiving a substantial savings in rent and other services provided by the Academy as in-kind benefits. However, based on statements in the new May 2003 agreement between the IGBP, the Academy, and ICSU, it appears that the Academy receives a grant from the Swedish government "to make it possible for the Academy to provide space and administrative services to the IGBP Secretariat." If the Swedish government has committed to funding the Academy for the cost of hosting the IGBP, the Academy would be justified in requesting additional funding from the Swedish government for this purpose. Given that the annual interest earned on IGBP funds was a significant amount, estimated at over \$10,000 during the time of our review, we believe that IGBP should clarify this matter with the Academy. We, therefore, reaffirm our recommendation and request NSF to specify the corrective action it plans to take to ensure that the IGBP fully implements the recommendation.

IV. Competitive Procurements Assure Most Economic Prices

Prudent business management practices and OMB federal grant standards require grantees to promote free and open competition to the maximum extent possible. However, IGBP did not always perform and/or document cost and price analysis for every procurement action to assure the most economic price was obtained. Review of contracts totaling \$233,720, with payments made during our audit period, were awarded either without adequate competition or documentation of the competition obtained. These procurement weaknesses occurred because as a small organization, IGBP did not have written procurement policy and procedures. Further, IGBP officials indicated that competitive bidding was not considered necessary for small value procurements in Sweden. However, competitive procurements can result in cost savings. This is illustrated by the 9 percent reduction IGBP achieved when it awarded a competitive contract for its 2002 shipping services.

Although procurement actions do not constitute a large portion of the IGBP's overall expenditures, some form of cost and price analysis should be performed and documented

in the files for every procurement action. Such efforts should consider the monetary value of the procurement in determining the level of competition required. For small procurements, the process does not have to be extensive or overly time consuming and could be as simple as obtaining telephone-pricing offers from several companies. In this way, IGBP can be assured that the most economic price is achieved for all procurements.

Recommendation:

7. We recommend that the Director, DGA, direct the IGBP to implement open and free competition to the maximum extent practical for all procurements by performing and documenting some form of cost and price analysis for its procurement actions.

NSF Comments

NSF did not comment on the audit finding or recommendation.

IGBP Comments

The IGBP agrees with the audit finding in principle, but believes that the report does not reflect that quality of service in procurement contracts need to be considered as well as costs. IGBP states that they are implementing the recommendation.

OIG Response

The actions taken by IGBP to implement the recommendation are appropriate. Therefore, NSF needs to determine if the specific corrective actions taken by IGBP fully resolve the audit finding.

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NDA

National Science Foundation
4201 Wilson Boulevard, Arlington, Virginia 22230

Appendix A

Memorandum

To: James J. Noeth, Senior A it Manager, Office of Inspector General

From: Mary F. Santonastasso, Director Division on Grants and Agreements Date: August 25, 2003

cc: Margaret S. Leinen, Assistant Director, Directorate for Geosciences (GEO) Jarvis L. Moyers, Director, Division of Atmospheric Sciences (GEO/ATM) Lawrence Rudolph, General Counsel, Office of General Counsel OD/OGC)

Subject: Draft Report on OIG Audit of the International Geosphere-Biosphere Programme

This is in response to your request for review and comment on your draft report, dated July 25, 2003, of the OIG Audit of the International Geosphere-Biosphere Programme. We are providing a consolidated NSF response prepared in consultation with cognizant staff members of the Directorate for Geosciences, the Division of Atmospheric Sciences, and the Office of the General Counsel.

As you are aware, NSF staff members in GEO/ATM, OGC, and DGA have had numerous and extensive discussions with OIG prior to, during, and after the audit regarding your findings and recommendations. Your findings flow from your premise that NSF made awards to a non-legal entity. It is NSF's position that the awards in question were made to a legal entity and that we have exhausted all reasonable attempts to correct this erroneous finding.

The following comments reiterate remaining significant issues:

First and most importantly, the Draft Report claims repeatedly that NSF could not determine how the U.S. funds were expended by the IGBP. While we may not be able to determine exactly how much of our funds have been allocated to various specific funding categories, e.g., salaries vs. travel vs. computers vs. communications, we maintain effective oversight of IGBP programs, including PAGES. Each year NSF assures interagency review of the IGBP program based on the IGBP annual reports that are exceptionally comprehensive and thoughtful. These reviews indicate that the IGBP and PAGES are addressing effectively the programmatic needs that they identify for us in their proposals and progress reports and are doing so at reasonable cost to the U.S. NSF is confident that the awardee institution has accepted full programmatic responsibility for this award.

Second, the Draft Report seems to criticize the IGBP because "The IGBP was only involved in one program and its staff worked exclusively on this program". The Report then uses this conclusion as the basis for arguing that "to require the IGBP to ... account for its grant cost as required under a cost reimbursable grant is not useful or justified" (see page 13; the first full paragraph). The latter argument may or may not be appropriate. However, this argument should not be based on some kind of vague conclusion that the IGBP is only involved in one program; that is what we fund them to do!

Third, the Draft Report contends, in its discussions of funding for the PAGES project, that the IGBP "did not have a substantive role in the proposed project" and that NSF "...would basically act as transfer agent for another entity". The Report makes a similar argument with respect to the IGBP-DIS project. Neither of these statements is correct. Both PAGES and IGBP-DIS are IGBP projects conducted under their aegis. NSF believes that both have been (and PAGES continues to be) reviewed regularly by the IGBP. So, the IGBP does have a substantive role with respect to both projects.

The NSF funds the IGBP (and both PAGES and the IGBP-DIS) because NSF was the lead agency for the U.S. Global Change Research Program (USGCRP) when the USGCRP began funding for the three (now four) international global change research programs of which the IGBP is one. NSF provided funds to the IGBP on behalf of the eleven U.S. agencies participating in the USGCRP (now the U.S. Climate Change Science Program (USCCSP)). Other Federal agencies members of the USCCSP have thus looked to NSF over the years to serve as a lead agency for occasional agency awards to the IGBP for specific IGBP activities that have also been of special interest to these agencies. NSF expects to continue to play an important and special role in the USCCSP that warrants our continuing in such a capacity.

Fourth, with respect to the funds remaining from the support for IGBP-DIS, it is NSF's position that these funds may still be utilized by the IGBP in a manner that would be appropriate for the IGBP, NASA, NSF and the USCCSP.

Finally, the Draft Report acknowledges in a generally positive way that NSF has already made a number of changes in its procedures for dealing with "foreign" awards like the award to the IGBP. However, it is NSF's understanding that the IGBP has made similar changes with respect to the ways in which it oversees and manages "pass through" funds and that they have so indicated to the OIG, but the Draft Report does not refer to these changes. NSF recommends that OIG do so.

(DISCUSSION DRAFT)

Comments from [REDACTED], IGBP

General Comments

The report is well-written and clearly laid out, which makes it easy to follow arguments and understand positions. Detailed comments on individual findings and recommendations are given below. There are two fundamental issues, however, which deserve comment.

First, it was clear in both the interview process and in the report that the auditors have a rather limited understanding of the nature of the scientific process and the type of products that the scientific enterprise generates. This is an important issue as the ultimate measure of productivity and effectiveness is the quantity and quality of scientific outputs that are produced for a given input of resources (and this includes both financial and human resources). Measures which would marginally increase financial efficiency but would reduce scientific efficiency are usually counterproductive in terms of the overall efficiency of the programme. This balance needs to be recognised explicitly.

Secondly, the complexities, particularly the cultural and social complexities, of embedding an international programme secretariat (the IGBP Secretariat) within a host country (Sweden) and a host institution (the Royal Swedish Academy of Sciences) were not fully recognised despite lengthy efforts on our part during the interview process. Such considerations have direct bearing on the financial aspects of our operation and thus should have been both appreciated and considered in thinking about the audit and formulating the recommendations.

A minor comment concerns the terminology used in the report. The term 'core project office' comes up frequently during the report. At some points in it is incorrectly referred to as just 'core office'. It must be changed to 'core project office' everywhere as 'core office' has no meaning in the IGBP system and is potentially confusing.

Specific Comments on Audit Findings and Recommendations

A. The finding that the IGBP Secretariat does not have a clear, written legal status was true earlier, as the Secretariat was established in an informal manner during an era when the world was much less litigious than it is today. Thus, many of the considerations raised in the report were not important considerations at the time of establishment of IGBP. Indeed, the informal way in which the Secretariat was established is recognised in Swedish law and the Secretariat has operated through the years with no problems in Sweden. However, the need for a clearer, written legal status for the IGBP Secretariat, given its international nature, was recognised and steps have already been taken to achieve this. Please see the document 'Memo on the

Appendix B

relations between The Royal Swedish Academy and the Secretariat for the ICSU programme "IGBP-Global Change" prepared by [REDACTED] and signed by representatives of the Academy, IGBP and ICSU. It is important to note that the informal arrangements described in Mr [REDACTED] memo refer to conditions that applied earlier; the process to replace the earlier situation with a more formal, written agreement is now well underway.

Recommendation A1: We agree that the legal status of the PAGES core project office should be clarified and that grants should be made directly to the PAGES core project office and not through the IGBP Secretariat.

Recommendation A2. This has been implemented via the memo cited above

B. The title is pejorative and needs to be changed. In general, it must be recognised that as part of the Academy, the IGBP Secretariat is required to follow the Academy's system of financial accounting, which includes strict, open and public auditing procedures. To precisely follow NSF's regulations (which are designed for the American context) would require changes to the Academy's own financial systems, and these are now , allowed. Other comments: (i) It is asserted that IGBP needs to segregate NSF funds from those received from other countries. The quotes from NSF regulations (e.g., OMB Circular A- 110) do not support that assertion. Nowhere in the two quotes supplied does it state or even imply that funds need to be segregated. Much clearer documentation from NSF should be supplied at this point. (ii) The statement '...IGBP was unable to identify exactly what portion of its total program costs were actually attributable to NSF grant funds and whether these expenditures were necessary, reasonable, and allowable under federable cost principles' is incorrect as stated. I think I know what is attempted to be said here but the English doesn't work. We can state exactly what portion of our total program costs are attributable to the NSF grant (emphases mine) but we cannot identify (via 'tagging' on notes or, in this era, electrons) whether the electronic transfer used to pay for item X is directly connected to the electronic transfer of funds from NSF to the Academy. The wording needs to be changed to reflect what is actually meant here instead of what is said.

C. The issue of the NASA funds passed through NSF for DIS is not reported, correctly. The phrase '...the IGBP improperly obtained the final 70,000 USD in unspent DIS funding' is pejorative and does not accurately reflect the situation. As I stated quite clearly in the interview, we were given very clear instructions by NASA on both the ways in which the funds could be expended and the process by which they could be accessed. We followed those guidelines carefully. The problem lies on the US side, and needs to be solved through discussion between NSF and NASA. I reject the notion that IGBP behaved improperly in any way and do not accept this section of the report (p. 18). It must be rewritten to reflect the situation accurately.

DI. The findings on block grants to core project offices are agreed.

Recommendation DI 1. We are already taking procedures to implement this recommendation.

Appendix B

DII. Dissemination of IGBP scientific results. The comments here regarding electronic distribution of the newsletter and reports are useful and the suggestions made in this section could indeed help us save money. However, a balance needs to be struck between the desire to reduce costs and make our printing/distribution activities more efficient and the need to get IGBP's scientific results out to the users in a truly global fashion. The issue about hard copies is not so much related to libraries but to scientists in developing regions of the world. It is difficult for them to access copies of our material electronically and so a certain number of hard copies will need to be printed. Also, the last paragraph on page 22 is only partly true. There are indeed an increasing number of people who have internet access but that can be deceptive. Many of our IGBP-related scientists in developing regions of the world (e.g., most of Africa, Indo-China, parts of India, much of Central America and parts of South America) have internet access but cannot download large files. Files over ca. 20k often crash their systems and thus they cannot access newsletters, science series documents, etc. The so-called 'digital divide' is real and growing, and IGBP is obliged to do all we reasonably can to bridge this divide.

Recommendation DII 1. We are implementing this.

Recommendation DII 2. We are considering this recommendation and may implement it in modified form, to ensure that we don't inadvertently cut out developing country scientists who are keen to be kept informed of IGBP research and results. It is important to note, however, that IGBP has already surveyed the recipients of its publications three times in the last 12 years and reduced its mailing list as a result. In the intervening years the list increases again as new scientists learn of IGBP and request our products. We will continue to routinely check and then streamline our mailing list.

DIII. I do not agree with the section and strongly suggest that the entire section be removed. This section shows a lack of understanding of the Swedish pension system. The Academy does not have a 'pool' of pension funds; the pension 'fund' is basically a security against the liability that the Academy has legally in respect of its employees. It is a feature of Swedish law and the Academy is not in a position to alter it. Even if I could somehow make the requested recommendation, this is a case where the financial arguments are far outweighed by social and cultural considerations. At present IGBP obtains considerable in-kind support from the Academy and benefits greatly from the goodwill shown by the Academy, its staff and the Swedish scientific community more generally. We (the international IGBP Secretariat) must remember that in important ways we are guests of the Academy. Indeed, my legal status in Sweden is as 'guest worker' under the auspices of the Academy (cf. arbetstillstånd in my passport). This means that I am, both ethically and legally, bound to follow Academy practices in terms of personnel issues. Furthermore, US approaches to pensions would not be considered acceptable in Swedish society, and thus the suggestion embodied in DIII, were I to raise it, would be considered both intrusive and offensive. In addition, I have absolutely no doubt that were I to raise this issue with the [REDACTED], I would damage the good relationship between the IGBP Secretariat and the Academy, lose the goodwill of the Academy, and could well be assessed costs for Academy services that would outweigh the gains saved through lowering pension payments. Thus, IGBP could lose in all ways,

including financially. In summary, this argument is particularly ill-considered for many reasons. Please remove the section.

Recommendation DIII 1. I will not implement this.

DIV. Receiving interest on funds. This was clarified several times during the audit interviews. IGBP receives a number of in-kind benefits from the Academy which amount to substantial savings compared to the full costs of the services. These include such services as rent, heat and electricity, cleaning, internet connectivity, etc. The subsidies we receive for these services are larger than the interest that the Academy receives on IGBP's account. It has been made clear that if IGBP requests this interest back, we will likely be charged fully for services. The IGBP Secretariat would lose financially under such a situation. Thus, we are in a better financial position with the current arrangements.

Recommendation DIV 1. I will not implement this recommendation. The IGBP Secretariat would lose funds if I did.

DV. Competitive procurements. The arguments here are accepted in principle. Indeed, we already take steps to ensure best value for money'. We routinely (every two years or so) routinely check the costs in our largest areas of expenditure (e.g., shipping and printing) to ensure that we continue to receive the best value in terms of a balance of cost, quality, convenience and speed of service. This has resulted in changes of providers for both of these services. However, the situation is not as simple as it seems in the description in the draft report. The issue of quality is not raised at all (as outlined above). Accepting the lowest (most economic) price for a good or service is not always the best course of action. Lower cost often means lower quality, and may be counterproductive if the desired function is thus not performed up to standard. The example quoted is interesting in this regard. IGBP did indeed achieve a 9% reduction in shipping costs in 2002. We also suffered a drop in quality of shipping service! For example, critical papers sent in plenty of time (we thought) from Stockholm did not arrive in time for a particular meeting. The productivity of the meeting suffered significantly and we did not achieve what we set out to do. I have not costed the wastage of travel costs and scientists' time, but it surely exceeded the savings we made on the shipping costs. I am not arguing that the principle outlined in this section is not valid; rather, I am arguing that quality needs to be considered as well as cost. 'Cheapest' is not always 'most cost effective'. As noted above, we also try to achieve a balance of cost, quality, convenience and speed of service. When this balance changes, we review the situation and make changes, as appropriate. Further monitoring is often required soon after changes (as for the shipping example, above) to ensure that a high standard of service is being maintained.

Recommendation DV 1. We are implementing this, subject to the comments made above.