
IMPROVING WORKFLOW AT THE NATIONAL SCIENCE FOUNDATION

AN INTERACTIVE QUALIFYING PROJECT

Submitted to:

SPONSORING AGENCY

**NATIONAL SCIENCE FOUNDATION – DIVISION OF ENGINEERING EDUCATION AND
CENTERS**

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ABSTRACT

This project focuses on workflow at the National Science Foundation and ways in which it can be improved. The process used to review submitted proposals currently has multiple opportunities for enhancement. Through the methods of interviewing and observation we identified tasks in the process that could be more easily done. We worked to automate these tasks through the use of Microsoft software, specifically Microsoft SharePoint and InfoPath 2007. These products allowed us to make improvements in the review process, specifically the part that deals with the set up of panels. We were able to automate certain tasks and centralize most essential data in one repository. At the end of this project we presented the National Science Foundation with a working system that made the management of panels easier.



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AUTHORSHIP

Ignacio Davila was responsible for researching and writing several sections of the report. The first one was the Executive Summary. He also wrote various “Background” sections, such as: Restrictions and Panelists’ Privacy Concerns, Microsoft InfoPath Form, and Goals and Deliverables. In the “Results” part of the report, Ignacio wrote the SharePoint Site section, and the System Documentation section. Similarly, he co-worked with Nicole Davis in creating the User Manuals, which can be found in Appendix G. In the technical part of the project, Ignacio was responsible for creating the “Discussion Board” of the SharePoint Site. Similarly, he co-worked with Wilmann Gomez, in the design and layout of the InfoPath form.

Nicole Davis has participated in this project by writing the National Science Foundation Merit Review Process in the background. This process contains of three phases which she wrote about in detail. Nicole also wrote about the NSF workflow and the government restrictions that the team has encountered while completing this project. She has also explained the external sites and firewalls within the SharePoint workflows. In the Results and Analysis section, Nicole has described the user interface, which explains the homepage of the SharePoint site and what can be found on that site for the Program Director, Program Assistant, and panelists. In Appendix B, Nicole wrote about how this project qualifies as an IQP as well as creating two questions for the Interview Agenda in Appendix C. Nicole has taken notes in all of the interviews that have taken place during the term and the summary of the interviews can be found in Appendix E. Nicole has also worked with Ignacio Davila in creating the System documentation by creating the Panelist User Manual, Program Assistant User Manual, and the Program Director User Manual.

Wilmann Gomez was the team’s IT specialist. During the initial phases of the project, He was the main redactor of the project’s introduction and executive summary. Wilmann also researched, contributed to and edited parts of the background regarding the NSF review process, impact of workflow efficiency in other organizations and the potential of



SharePoint 2007 within organizations. For the methodology chapter, Wilmann contributed in the opportunity identification sections. In general, Wilmann contributed to the report with the organization of the project's flow of ideas as well as the proofreading and editing of other sections. When the team arrived at the National Science Foundation, Wilmann's previous technical background with enterprise collaborative systems (SharePoint 2010) helped the team get acquainted with SharePoint 2007. Additionally, Wilmann helped the team understand the basics in process flow mapping, as well as the flow charting conventions. Among others, Wilmann mapped Phase II of the proposal review process, and the InfoPath process flow and logic. Moreover, Wilmann was the main developer of the InfoPath form implemented in the team's solution. He worked with Evan Ziavras in the development of the SharePoint site, introducing him to key functionalities such as creating views, the use of web parts and JavaScript integration. Wilmann contributed in making sure the team had clear goals and deliverables, as well redacting and editing of the project's results and analysis.

Evan Ziavras was responsible for researching and writing about the background of workflows and how they are used in everyday business life. He also wrote the about how workflows are created in SharePoint and used to make business process more efficient. Evan also wrote the Methodology chapter and wrote the part of the Results chapter regarding the site architecture, SharePoint workflows created, and securities implemented. He also wrote part of the Conclusions that summarized the results of this project. Evan also helped map the process used by NSF to review proposals and helped design the flowcharts created. He also served as the point of contact with the group's liaison, Dr. Alan Cheville. Evan helped develop the workflows used in the SharePoint site and created the web parts that were used for users' convenience. He also created the different groups used on the site and set the site permissions on each of them.



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EXECUTIVE SUMMARY

Scientific advances have greatly improved the quality of life for many people and are important to the economic health of nations. For these reasons, it is in the best interest of the United States to encourage scientific research and growth. The National Science Foundation (NSF) is a federal agency in charge of funding scientific research education and project development. NSF's Division of Engineering Education and Centers (NSF-EEC) has expressed interest in improving the workflow of its proposal review process. This review process evaluates a research project proposal's eligibility for NSF funding. The review process takes about ten months to a year. NSF would like to improve their workflow in order to automate certain tasks and thus reduce the time it takes for the process to be completed.

The review process at NSF has unique opportunities for streamlining. The process is organized into three phases: submission, review, and award. Most of the opportunities for improvement exist during the review phase, the longest of the three phases. NSF wishes to streamline the review process by automating tasks and designing workflows in Microsoft SharePoint 2007. Particularly, NSF-EEC wants to address the copious amount of emailing involved in several of the steps of the panel set up process. Our project will allow NSF staff to perform their jobs more easily and will make the review process more efficient.

The goal of this project was to provide NSF-EEC with a SharePoint system that serves as a consolidated data gathering and storage tool. We used Microsoft Office SharePoint Services 2007 (MOSS) to streamline the process. MOSS is a collaborative tool with the capability of automating workflows. The system delivered is also capable of handling automated workflows that will keep track of the process status as well as send out emails on behalf of NSF-EEC staff. Lastly, the system will eliminate the need to sort through hundreds of email responses from potential panelists by using an InfoPath electronic form to gather panel reviewer information. In order to successfully accomplish this project, it is essential that our team understood the review process. We carried out interviews with NSF



staff to gain an internal perspective to the workflow problems. After gathering and analyzing the results, we developed flowcharts of the review process, marking where the areas that can be improved have been identified. These methods allowed us to identify tasks with potential for automation in the review process. Once the automatable tasks were identified, we used MOSS to streamline them. Additionally, we documented current changes for future reference, and developed training resources for NSF staff. We also conducted multiple demos for NSF-EEC staff to identify areas where our site could improve. Completion of these objectives led to the successful achievement of our goals.



CHAPTER 1: INTRODUCTION

Over the past twenty years, technological improvements have revolutionized the way that people live their day-to-day lives. Consequently, businesses have seen many benefits in adopting technology as a part of their work environment and workforce. Twenty years ago, sending 100 memos would have taken 100 letters, while today a single email does the same task in a few seconds. However, not all business processes for a company or organization can be replaced by a computer program because there are many important tasks that can only be done by a human. While not all processes can be completely automated, they can be made more efficient through the use of technology (Misa, 2007). Business workflows are an example of processes that cannot be fully automated. However, techniques used by modern businesses to manage and direct their workflow process have great potential for technology-based improvements. In the past, directing workflow was very tedious. The lead time between each step was, and still is, widely identified as the cause of most delays in business processes (Fox & Frolick, 1999). For this reason, today's organizations, both private and public, are turning to computer technologies that provide tools for improving workflow performance.

Improving workflow performance is a concern shared by both government and private organization. The National Science Foundation (NSF) is a non-profit federal agency created in 1950. NSF's (2011) primary goal is: "[to promote] the progress of science; to advance the national health, prosperity and welfare by supporting research and education in all fields of science and engineering" (National Science Foundation, 2011). NSF operates by evaluating research proposals and then providing funding to research proposals that realistically align with its mission. NSF's workflow currently demonstrates potential for streamlining. Improving the efficiency of the NSF's proposal review workflow would help the agency to come closer to achieving its goals. At the NSF's Division of Engineering Education and Centers (EEC), the proposal workflow has some automated phases, but



there is potential for further improvement with the aid of workflow management technologies.

Even though NSF-EEC's has a viable workflow, there is still room for improving the division's overall workflow process. The main point to focus on is that there are several steps in the proposal review process with unexploited opportunities for automation. Currently, there are many software solutions in the market capable of handling enterprise-level process automation. While NSF-EEC has a plethora of available systems, few of them provide seamless and centralized data storage capabilities.

Despite NSF's extensive efforts to streamline the proposal review process, there are still opportunities to automate parts of the process that take place internally at NSF. In the past, systems such as FastLane and eJacket were deployed to streamline the submission phase of the proposal review process. Additionally, NSF has implemented SharePoint 2007 as a collaborative tool to be used internally in daily operations. While SharePoint 2007 has been already deployed at NSF, it has not been used to its full potential. A particularly unexploited feature of SharePoint 2007 is Windows' Workflow Foundation (WF); WF is a software framework included in SharePoint that allows development of flexible automated workflows (Khosravi, 2008). Ample on-site research was done to identify additional problems within NSF-EEC review process.

This project has two major goals: 1) To develop automated SharePoint workflows that improve NSF-EEC's review process efficiency 2) To provide NSF-EEC with detailed documentation and training material of the solutions implemented for users and developers. In order to successfully accomplish this project, we divided it into two phases. The goal of the first phase was to understand the NSF's workflow process from start to end. By carefully studying the NSF's review process we recognized where the process could be improved and which parts showed the most potential for automation. To do so, interviews were conducted with select NSF-EEC staff with the objective of identifying where review process is not as simple as possible. After identifying any bottlenecks, the results were



analyzed to determine the best way to automate tasks using SharePoint 2007. The goal of the second phase was to ensure that the solutions implemented are backed by solid documentation. Two main documents were developed: a user manual that will serve as a training resource for current and new employees on the solution implemented; and a technical documentation manual which will provide developers insight on how the solution works in the background. The technical and user manuals allowed the solution to be understandable and adaptable to other divisions in NSF that might benefit from a similar system. As a result, the overall outcome of this project will be an improvement of the National Science Foundation's proposal evaluation process.



CHAPTER 2 - BACKGROUND

NSF has been very successful in reviewing proposals and giving grants to organizations that submit quality proposals. While this process currently works well, there are multiple opportunities for improvement. With a large number of proposals received each year, NSF cannot afford to waste resources. Furthermore, the reliance on manual operations increases the chance for human error. Certain tasks within the review process hold possibilities for automation that will save NSF staff time that could be spent on other operations. This chapter will discuss the process that NSF has to go through in order to review each proposal sent to them.

2.1 NSF PROPOSAL REVIEW

NSF's proposal review process is broken down into three phases: submission, review, and award processing. Each phase is composed of multiple steps which are outlined below in Figure 1:



FIGURE 1 - NSF PROPOSAL REVIEW



2.1.1 NSF REVIEW PROCESS PHASE 1

The NSF proposal review process encompasses all stages from solicitation to final award grant. The first phase of the review process is identified as the proposal submission stage. NSF releases various request for proposals using different online tools (National Science Foundation, 2009). In the *National Science Foundation Update* web application grant seekers can subscribe to new content categories such as *Upcoming Due Dates for Funding Opportunities*. *My NSF*, the predecessor website to *National Science Foundation Update*, was used to allow potential proposers to view new NSF funding opportunities and publications or any important changes in proposal and award policies and procedures. Another website, www.grants.gov, allows researchers to browse for federal government-wide grant opportunities (NSF, 2011).

The main mechanism that NSF uses to request proposals is *Program Announcement* (National Science Foundation, 2011). This is the major mechanism because it utilizes the generic eligibility and proposal preparation instructions specified in the *Grant Proposal Guide* (GPG). NSF uses this mechanism to disseminate opportunities for research and education support, as well as to generate requests for proposals. NSF's Division of Engineering Education and Centers (NSF-EEC) requests proposals three times a year and receives about 200 proposals per request cycle (Cheville, 2011). There are three different types of proposal submissions. The first one is a non-binding Letter of Intent. This is a simple document outlining the author's project that he or she would like funding for. Research organizations use this to find the range of competition for a specific funding opportunity. Preliminary Proposal is the second mechanism and is used mainly when the chance of getting an award is very small. This is a proposal draft and is used so that the author of it can receive confirmation that his or her ideas are in line with the type of project that NSF is looking to fund. The last mechanism is Full Proposal, which is the strictest of all the types of submissions. The full proposal is the one that will be reviewed by a panel in order to determine whether it is worthy of funding or not. All proposals must be submitted electronically to NSF FastLane System.



NSF FastLane is an Internet system that allows potential proposers to conduct business with NSF (2000) directly. FastLane was created to make NSF more efficient with their transaction processing. This software was implemented throughout the NSF in 2000 in efforts to mitigate the various problems and burdens associated with paper proposals. Individuals can sign onto FastLane, send their proposal to NSF, and receive award summaries directly from NSF. There are many activities on this system such as Proposal Preparation, Proposal Review, and Status Reports. One of the constraints regarding FastLane is that it cannot be modified internally due to federal regulations. In order to guarantee successful protection of private information, NSF uses a second software system called eJacket. EJacket is used to securely manage personal data associated with each proposal submitted (National Science Foundation, 2007).

2.1.2 NSF REVIEW PROCESS PHASE 2

Proposals that meet NSF requirements are assigned to a relevant program for review (National Science Foundation, 2011). All proposals are reviewed by an NSF PO and by a panel of experts in the field pertaining to the proposal. The panels of reviewers are drawn primarily from colleges and universities, secondary schools, industry, foundations, and professional societies and associations.

Every division at NSF has to set up review panels according to NSF protocol. However, each division follows protocol in different ways. Program Assistants, also known as PAs, are used to alleviate the Program Director's (PD) workload when setting up review panels. Specifically, PAs take care of most of the administrative tasks associated with panel setup (i.e. reserving rooms, adding reviewers to NSF systems, generating guest accounts, etc.). At NSF's Division of Engineering Education and Centers (EEC), PAs developed a checklist of tasks that outline NSF established protocols for setting up panels. PAs divided the checklist into five separate sections: Creating a Panel, Obligating Funds, Communicating with Panelist/Travel, Preparing for Panel Day, and Procedures for Processing Reimbursements.



Once the proposals are sent to the EEC Program Director, he or she will determine potential panelists based on the expertise needed to review the proposals appropriately. When a potential panelist has been selected, the Program Assistant (PA) will email him or her an invitation to serve on a review panel. The entire process of this phase can be seen in the flowchart below (Figure 2). The part of the process up to the PA emailing the panelists their invitation can be seen from the beginning of the chart to the “Email Invitation” step. The process for creating a panel begins as responses arrive.

The PA will have to get the information of the panelists who will be participating in the proposal review. The information is obtained via email, phone conversations, or a web searching system. When the information has been gathered and verified, the PA will send the conflict of interest (COI) form to the potential panelist. The COI form is used to find out if a panelist is somehow associated with the Principal Investigator (PI) or the work as presented in the proposal (National Science Foundation, 2011). If a conflict is present, then that panelist is not allowed to review the proposal or be in the room when the proposal is being discussed. This is done to avoid bias during the review process. Once the form is completed and verified, the PA will create the Panel ID and password in a system called Proposal and Review System (PARS) and a matrix of everyone’s information is created in a Microsoft Excel spreadsheet. Next, the funds that need to be allocated for the panels are estimated. This estimation is based on the number of panelists in attendance. The PA is expected to maintain communication with the panelists to keep them updated if there are any changes to the date, time, location, or assignment for the panel and proposal. The PA also needs to receive the travel information of each review so that NSF is able to reimburse them depending on the method of travel and other factors. This part of the process is visible in the second column of Figure 2 - EEC Panel Set Up flowchart.

On the day of the panel, the PA will make sure that computers are provided for panelist use as a matter of convenience, along with any other equipment that panelists in attendance may require. The PA needs to reserve everything at least four weeks before the panel date. Refreshments will also be provided for the two days that panelists occupy



rooms for the proposal review, which will also be provided by the PA. The physical panel itself can be visualized in the third column of Figure 2.

On the first panel day, the PA will go over how to use FastLane and eJacket. He or she also will need to set up a Panel folder which will contain the guest and travel reimbursement, sign-in sheet and e-Sign, a conflict of interest form, a matrix of conflicts, the reviewer assignments, and the panel demographic form. When the panel is completed, the PA will have to go through the procedures for processing reimbursements. This process is completed by locating the panelists travel information and summing up how much money they need to be given. They must include the hotel receipts, taxi, bus, subway, or any other information so NSF will be able to reimburse them.

The PO makes his or her own recommendations to the Division Director regarding each proposal. The Division Director then makes the ultimate decision as to whether to grant it funding. Approved proposals will be known as an “award”. Declined proposals will be sent back to the PI. Results are released to the PI through FastLane. Normally, the final approval is at the division/office level. This process can take up to six months due to the large number of proposals received by NSF. Once the proposal has been approved, it is sent to the Division of Grants and Agreements for the award processing. A general flowchart of the entire second phase can be seen in Figure 2:



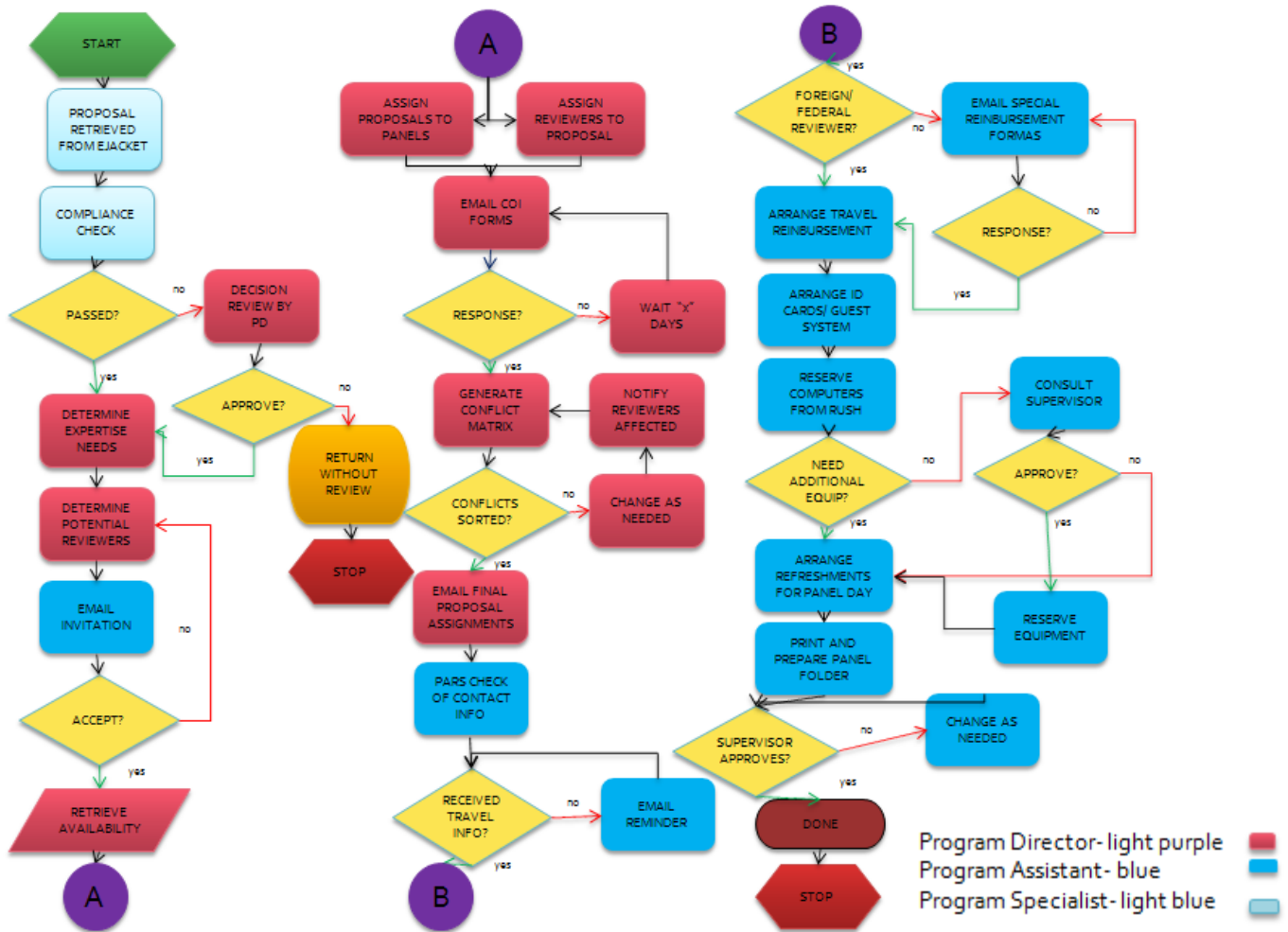


FIGURE 2 - EEC PANEL SET UP FLOWCHART

2.1.3 NSF AWARD PROCESS PHASE 3

At the Division of Grants and Agreements (DGA), the recommendation is reviewed for potential business, financial or policy implications, and the processing and issuance of a grant or cooperative agreement (National Science Foundation, 2011). This takes about 30 days from when a division has made a recommendation. The NSF awards are electronically signed by the Grants and Agreements Officer, transmitted to the organization by email, and can be accessed via FastLane. After the grant has been sent to the organization, NSF will keep track of the research progress over a period of three to five years.



2.2 WORKFLOW MANAGEMENT

Many ideas as to how to improve NSF's proposal review process can be obtained from other sources (Perez & Rojas, 2000). Other organizations have found the need to improve their processes by eliminating paper transactions and replacing them with automated electronic forms. Improving a process is not as simple as migrating from paper forms to electronic forms though. While flow of electronic forms has inherent benefits, such as reducing delivery time between process steps (lead time), logic flow problems within the process may get passed along if the process is not carefully analyzed prior to automation. In 1999 the University of Tennessee sought to improve the way business and academic processes were managed. With hundreds of thousands of paper forms being used to direct work for approval, the university faced very intricate constraints much like NSF today. This scenario is also supported with the statement given by Fox and Frolick (1999), which said that in order for a process to be automated, a deep analysis of the process must be done in order to determine the true needs of that process, as well as the needs of anyone taking part in the process. Even though the core structure of NSF's review process is not modifiable due to federal law, there are still improvements that can be made. The best way to determine what improvements should be made is by receiving feedback from the people who work inside this process. Receiving feedback that is not 100% honest is an expected outcome if appropriate surveying methods are not used (Donnelly, 2010). Chory and Kingsley (2009) determined that in order to receive honest feedback from an employee, he or she must feel comfortable with the fairness of the ensuing treatment. Chory and Kingsley add that in order to achieve a level of comfort, there has to be a feeling of detachment coming from the individual administering the survey. In other words, people will be more honest in their feedback if they are giving it to someone outside from their work circle. However, at NSF, employee feedback is taken by the same individuals inside the work circle, and who may have the power to make decisions about the employee's career such as granting a raise or firing him or her. Employees are more likely to be forthcoming when talking to third party members who can guarantee their anonymity. This means that in



order to receive accurate user feedback, people collecting this data must ensure that it will be kept anonymous and confidential.

2.2.1 TECHNOLOGICAL ADVANCES IN WORKFLOW MANAGEMENT

Workflow management has improved over the past twenty years (Cravo, 2009). Beginning in the 1990s, workflow management has become a very important part of a business or organization's goals and plays a prevalent role in how work is organized. Advancements in technology have allowed organizations and companies to save much time in the processes they perform and have made their work process more efficient. Workflow is defined as "steps in an end-to-end production process designed to yield a specific product" (Seamless Workflow, 2008 p. 2). The overall goal of workflow analysis is to make a business's or organization's work process more efficient and less time consuming. NSF is seeking to make their workflow more efficient using these methods. One of the main objectives of creating a good workflow is to have workflow integration (Austerberry, 2011). Completed by combining smaller tasks, workflow integration requires fewer steps to be taken in order to complete a process. A key component to accomplishing integration is automation, which allows computers to perform tasks that previously had to be done by humans. These tasks may include cost-benefit analysis, performance reviews of workers, and other tasks common in the daily operation of an organization. The automation of tasks is a very important part of this project. NSF is seeking to automate tasks in the review process using the program, SharePoint. This will make it easier for employees to focus on their jobs without having to worry about simple jobs that can be performed by computers.

Two main types of workflow integration software are Business Process Management (BPM) and Service-oriented Architecture (SOA) (Austerberry, 2011). BPM is a type of software that allows managers and project leaders to see all ongoing processes. It is a dashboard-like type of program that displays all procedures in one area and makes it easy to see if tasks are going as scheduled. BPM also allows managers to identify bottlenecks. At a level above this, Service-Oriented Architecture (SOA) can be implemented. This consists



of the software programs that implement the tasks that need to be done. NSF is currently looking to use SharePoint as both their BPM and SOA. This program will document the entire process as well as automate specific tasks. Overall, BPM allows managers to oversee workflow processes, and SOA executes the automated processes. These two types of software are very helpful for people managing workflows.

Many organizations have taken advantage of workflow automation to increase their efficiency. Two of these companies are PeopleNet (2011) and Sentara Leigh Hospital (Ferry, 2011). PeopleNet (2001) has used this method to manage their drivers' performance, violations incurred, and vehicles. Their new system is capable of analyzing a driver's performance and sending them letters or suggesting extra training if they do not meet company standards. This has resulted in increased performance, safety, and customer satisfaction. Sentara Leigh Hospital (Ferry, 2011) has been able to automate the room placement of their patients. This has allowed clinicians to spend more time with patients and has resulted in a ten percent increase in patient satisfaction. Automation has allowed organizations to work more efficiently.

Many methods exist by which to analyze and manage workflows (Basu & Blanning, 2000). Since there is currently no agreed upon standard by which businesses and organizations chart and analyze workflows, there is a large degree of variation in how this is done. The ways in which workflows are organized are known as perspectives. Each perspective allows staff members to view a workflow from a different viewpoint based on what they are seeking to find. There are four main perspectives, informational, functional, organizational, and transactional modeling. Informational modeling concentrates on the information in processes. Functional modeling concentrates on tasks being done. Organizational modeling focuses on what resources go into each task. Transactional modeling focuses on the timing it takes for processes to be done.

While these perspectives provide the overview of how each workflow is composed, the elements of the workflow themselves can be arranged in various patterns (Cravo,



2009). Common patterns seen in workflows are sequences, parallel splits, synchronization, and exclusive choices. Sequences chart one activity following another and show the entire sequence followed in a workflow. Parallel splits occur when one activity splits into multiple ones. This gives the user flexibility in how the work can be done. The resulting activities can be performed in any order. Synchronization occurs when multiple activities are performed and they converge into one larger action. Exclusive choice occurs when multiple paths can be taken from one branch inside a workflow. These patterns are very useful tools. They provide various ways for our group to document changes in NSF workflow in SharePoint. This will make it easier for others not familiar with the workflow changes to learn them. The patterns also make it easy to identify bottlenecks in the process that might be making it less efficient. These are only some of the patterns used in modern workflows and give managers much flexibility in how they desire to represent and design their work processes.

The way in which people use these methods to organize their workflow varies from organization to organization (Basu & Blanning, 2000). Each entity must pick a perspective that suits its needs and apply it to its work process. There have been efforts made to combine the main perspectives using discrete math techniques as well as Boolean algebra. Using bitwise operators such as AND, OR, NOT, and XOR people seek to organize complex tasks onto simple, easy to read charts. These operators make it easy to chart workflows because they take in input and produce a yes or no response. The existence of only two answers makes it easy to graph workflows, as each element in the graph can only go in two possible directions.

2.3 NSF WORKFLOW

The second phase of NSF's review process involves a multitude of human interaction and manual operations. This includes inviting panelists to serve on panels, gathering their information, and conducting the panels. Therefore, it is the phase that is



most prone to error. Four reviewers in EEC need to review the proposal along with the Program Officer (PO) to determine if the proposal is qualified to receive the award. In order to review the proposals, the review panels meet for three days and discuss each proposal's pros and cons.

The Program Assistant (PA) needs to reserve a meeting room six months in advance of the panel start date (Cheville, 2011). This is due to the limited number of rooms at NSF. Sometimes rooms will not be reserved on time and panels will have to meet in a local hotel. This can be an inconvenience for the panels and can be improved by sending automated reminders to reserve meeting rooms.

2.3.1 GOVERNMENT RESTRICTIONS

Since NSF is a federal agency, it must deal with many restrictions on its actions (National Science Foundation, 2010). Systems such as FastLane and eJacket that are used to in the proposal review process cannot be modified, as they are implemented under federal law. This makes it difficult for NSF to streamline its proposal review process because they can only make modifications at lower levels of the process. Consequently, NSF must make improvements using the resources they have at hand. Currently, SharePoint 2007 is an important resource that could support potential improvements to NSF review process.

2.3.2 PREVIOUS ATTEMPTS AT AUTOMATION

NSF has previously designed software with automation in mind (Hettich & Pazzani, 2006). Software was previously designed with the intent of automatically finding reviewers for each submitted proposal to NSF. This program used keywords associated with each proposal idea to find reviewers who would be qualified to look it over. This ultimately proved unreliable, however, as there was no standard terminology among departments. This resulted in not always being able to find appropriate reviewers. Despite this program's failure, it gives an example of how some processes in the NSF review process could be



automated. This can serve as an inspiration to new ideas regarding streamlining NSF's workflow.

2.4 Microsoft Office SharePoint Server (MOSS) 2007

Microsoft SharePoint is a web application platform created by Microsoft (Wiley, 2007). Its first version was made available to the public in 2001. SharePoint was originally designed as a replacement for various web applications and was used to fulfill a series of enterprise website requirements. MOSS is typically associated with web content management and document management systems. Due to its multi-purpose platform, SharePoint allows users to perform a wide range of tasks and operations, such as managing and provisioning of websites, collaboration spaces, and document and file management. SharePoint was used in this project to automate tasks by developing workflows and by centralizing all relevant information through a SharePoint site. Workflows were used to automatically send emails at different parts of the process and check to see that people are completing their assigned tasks in a timely manner. SharePoint also offers various methods to customize and configure web areas, which allows certain information to be restricted.

Furthermore, on the company Calendars and Meetings section SharePoint integrates very well with Microsoft Outlook, making it an ideal tool for organizing agendas, calendars, team calendars, and schedules. These items are defined as workspaces, and they mainly help organize events before they take place.

In the workflow and process automation section, SharePoint can integrate with other software and can digitize paper forms. A good example of this is a report that needs the approval from a supervisor who is not in town. This could be a big problem, and would delay other operations in the company; using SharePoint, the form itself would be accessible through the SharePoint website, and could be approved by the supervisor using emails and dashboards. As a result, SharePoint's extreme flexibility makes it a very useful application for an organization.



In 2008 the World Bank (WB) identified inefficiency in the process used to create, publish, and disseminate business process documentation (McClure, 2008). Managers at WB's Division of Knowledge Dissemination (DKD) envisioned a fully automated process as the ideal solution. After failing to find commercial software capable of doing what the WB-DKD needed, the internal IT department at DKD was tasked with developing a solution in three months. In their final solution, DKD took advantage of SharePoint 2007's synergy with other Microsoft products such as Word 2007. The workflows developed allowed users to author and publish reports, in MS Word or MS Excel, based on information filtered and queried from WB databases; all this was done within a SharePoint site. Using SharePoint 2007 workflows DKD managed to develop a system that was reliable, cost-efficient and user friendly.

2.4.2 SHAREPOINT AT NSF

NSF uses Microsoft SharePoint 2007 to design and implement its workflow (Khosravi, 2008). NSF uses this software to automate and identify tasks requiring completion. SharePoint uses many similar programming techniques to common software languages, such as C#, and is a useful tool for organizations. SharePoint also uses other programs such as Windows Workflow Foundation (WF) and Visual Studio to design and implement complex workflows.

To create workflows on its own, SharePoint has a specific module, Microsoft Office SharePoint Designer 2007 (Hoffman, 2007). This uses a language, Extensible Application Markup Language (XAML), which allows users to design workflows by inputting data. Users enter in specific actions that they want accomplished and the conditions that need to be met to perform these actions. For example, if a project manager wants to automatically send assignments to his workers, he can design a workflow to send an email to these people after a button has been pressed to indicate these assignments are finalized. This eliminates a need for programming code. With XAML, users are able to produce workflows using a wizard in the program (see Appendix G, Section D). This is done by declaring the



inputs and variables for the workflow. The software also takes in and assigns the tasks of the workflow to the creating user. This method is beneficial when the workflow being created is simple and will not need to be modified in the future. However, more complex workflows cannot be handled by this program. While this method of creating workflows can be very useful to the average user, NSF's workflows need to be implemented using Windows Workflow Foundation.

To make more complex workflows, it is better to use WF along with Visual Studio (Janus, 2007). SharePoint works in conjunction with WF to design workflows made up of smaller tasks. It uses many common programming techniques such as *for* and *while* loops. These methods allow users to use conditional statements to accomplish their objectives. These statements do not allow the workflow to move on to the next task unless all of the required ones have been met. Overall, WF is composed of four components: activities, workflow, Windows Workflow Foundation Runtime Engine, and a host process. Activities are tasks that are to be done by humans. They can be of varying complexity, as they can range from very simple to very multifaceted. WF includes many built in activities that can be programmed. These activities include working with the Internet, temporarily pausing the workflow, and switching values when necessary. Workflows defined as a progression of activities grouped together to represent a work process. Windows Workflow Foundation Runtime Engine is the framework responsible for making sure the workflow works within the host process. The host process is the program that executes the workflow. We will always define the host process as Microsoft SharePoint 2007 for our project.

Once all of the activities have been created, SharePoint uses Visual Studio 2005 to put them together in a workflow (Janus, 2007). There are two types of workflows that can be generated here, sequential and state machine. Sequential workflows follow a flowchart-oriented approach. The activities follow each other in an order that rarely changes. This is the more straightforward method. State machine workflows operate using a different number of states. A proposal going through the NSF's review process could possibly be in a state of submitted, under review, funding recommended, funding not recommended, funding granted, or funding not granted. Changes in the current activity state will



determine the next activity performed. Visual Studio takes compiles the activities and after going through a series of processes that the user must follow, creates the final workflow.



CHAPTER 3: GOALS AND DELIVERABLES

The goal of this project is to provide the National Science Foundation's Division of Engineering Education and Centers (NSF-EEC) with a fully functional SharePoint Site that can improve the proposal review process. Currently there are multiple bottlenecks within the proposal review process that can be streamlined. We expect this system will lighten the workload on NSF staff by eliminating repetitive tasks that can be automated using computer programs. This will result in a more efficient review process. Our final results will allow NSF staff to spend less time on reviewing each proposal and will result in improved efficiency within NSF-EEC.

- The deliverables of this project are a SharePoint site and training manuals. The site will contain workflows that will automate tasks in the review process. SharePoint workflows are processes that are automated using Microsoft SharePoint Services 2007. These have the capability of sending automatic email alerts when tasks are completed, as well as sending reminder emails to people who have not completed them by their due date. We used workflows so that NSF staff will be able to communicate better within the organization as well as with potential proposal reviewers outside of NSF. We have created workflows to assign tasks to people, notify Program Directors about the status of panelists, and send reminders to people who have not completed their tasks on time.
- We also created a Microsoft InfoPath form so that NSF Program Officers (PO) will be able to gather and organize data about potential proposal reviewers more effectively (see Chapter 5.4.4). The POs currently use their own methods to organize people's data, such as Microsoft Excel spreadsheets. This sometimes results in confusion among staff members when they are required to work together to select panels. We plan to develop a simpler, standardized method that will be able to make the proposal review process more efficient. Due to InfoPath's compatibility with SharePoint, information can be transferred from InfoPath to SharePoint and vice versa.



- We created training manuals to teach NSF staff members how to use our new developments. These manuals are detailed documents showing how our workflows and databases can be used to help people perform the tasks that their job requires. This will make it simple for staff members who might not be as technologically savvy as others to quickly learn how to use these technologies. These manuals will also be used to train future NSF staff members.



CHAPTER 4: METHODOLOGY

To accomplish the goals of this project, the proposal review process needed to be better understood. Small details about the process that could not be found in NSF-published material needed to be discovered in order to think of ways in how the process could be improved. Discovery of these details would lead to identifying areas in the process that could be improved. This section states the methods used to complete this project.

4.1 UNDERSTANDING THE REVIEW PROCESS

In order to improve NSF-EEC's proposal review process, minute details about how it works were gained. These details made it possible to see the intricacies of the process that may not have been visible in the available guides created by NSF. The method used for this part of the project was interviewing. NSF-EEC staff who works with the review process on a daily basis were identified and opportunities for enhancements were discussed (See Appendix C for an interview protocol). In order to get different perspectives on how the process is implemented, three people with different positions at NSF-EEC were interviewed, a Program Director, a Program Assistant, and an Administrative Officer. These were conducted with two interviewers from the group. These interviews gave insight into how the process really works and where there might be inconsistencies between the NSF's *Grant Proposal Guide*, where the process is outlined, and in real life.

4.1.1 IDENTIFYING NEEDS FOR AUTOMATION

After gaining a better understanding of how the review process works, areas that contained chances for errors and certain tasks that could be automated were identified. NSF's current process contains many tasks done by staff that computers can do in a faster and automated way. An important objective of the project was to identify these tasks and work to improve them. This led to the finding of possible improvements to the process.



Interviews were a very important part of the research done and they led to the recognition of areas in the review process that needed to be made more efficient. These were essential because they gave a first-person internal perspective of the process, and what parts of it work and what parts could be improved. NSF-EEC staff members who work directly with the proposal review process were interviewed. It was imperative that these interviews were anonymous so that the interviewees were comfortable giving their honest opinions without any negative repercussions from NSF administration. This task was done by having all group members conduct the interviews at once. The main points of focus for these interviews was to identify the parts of the review process that work well, and to identify the parts of the review process that could benefit from improvements (see Appendix C for an interview protocol). The responses received from these interviews gave information that led to the discovery of bottlenecks in the proposal review process.

Flowcharts were also a very useful organizational tool that helped achieve the group's objective. After understanding the stakeholders and tasks involved in the review process, the information was organized onto multiple flowcharts. The data in the NSF's *Grant Proposal Guide* was the basis for this flowchart. The steps outlined in this guide were used as the main information for the chart. The more minute details were gathered through interviews. These charts helped to visualize the entire process and find bottlenecks and tasks that could have been done by computers instead of humans. Since all of the information was in one document, the workflow, the time it took for each step to be completed, and any other relevant information was visible. This helped in finding ways to streamline the process.

4.2 AUTOMATING TASKS

Once the areas with possible improvements and automatable tasks in the process were identified, Microsoft SharePoint 2007 was used to make the process more efficient. Automating tasks saved the time of the NSF staff, and ultimately made the people's jobs



easier. Consequently, workflow automation was critical to the main goal. In order to learn how to use SharePoint, archival research and interviews were used.

Archival research was a very important part of learning how to use SharePoint. Most of the group members did not have extensive experience with the program and had to learn how to use it. This was done by taking advantage of the tutorials available on using the program, specifically *Beginning SharePoint 2007* (Murphy & Perran, 2007). These provided the knowledge necessary to implement the tasks needed to be done.

Interviews were also used to help with the use of SharePoint. People within NSF's Department of Information Services (DIS) were interviewed about using SharePoint for the purpose of this project. These interviews gave essential information regarding NSF constraints on SharePoint. This was more beneficial than simply using a tutorial because, while a tutorial might have given a good overview of SharePoint usage and capabilities, talking to a person within NSF made it clear how the organization uses it, specifically in its operations. Learning this information allowed the group to work with SharePoint in a way that is consistent with how NSF already used it.

Another program used in this project was Microsoft InfoPath 2007. This software was used to design a form for data collection of review panelists. InfoPath was convenient for data collection because it integrated well with SharePoint and data could be transferred easily between the two programs. InfoPath also has built-in features that allow users to set rules and restrictions on data. These features made it easy to block users from accessing data that they were not allowed to see. InfoPath provided many of the needs for this project to be completed.

4.2.1 CREATING TRAINING RESOURCES

Once all the required objectives in SharePoint were accomplished, they were documented for future reference. Training resources were created so that people who are unfamiliar with the new developments will be able to use them with little difficulty. The



work was documented and the understandability was determined by conducting multiple demonstrations of the SharePoint site.

The documentation of the developments consisted of two parts, users' manuals and a developers' manual. The user manuals were written from three perspectives, Program Director, Program Assistant, and panelist. This part of the documentation focused solely on the process that needed to be followed on the site so that each person could accomplish his or her responsibilities. The manuals included many screen shots as visual aids. The developers' manual was more detailed and written for DIS employees to know how the site worked. This went into more detail than the users' manuals as it covered the individual fields within each SharePoint list and gave each step of every workflow on the site. This part of the manual was more complex so that if DIS wanted to make modifications to the site in the future, they could easily know how everything is designed.

The demos were conducted for multiple people within NSF-EEC and DIS. The purpose of these was to show staff the site that was created and how it was run. Another important reason for doing this was to collect feedback that would help make improvements on the SharePoint site. These demos allowed people who had not worked on the site to see it in a completed form and it allowed them to point out oversights on the part of the group. This feedback was valuable in making small but important modifications to the site to make it run smoother.

4.4 CONCLUSIONS

Our project focuses on possible improvements to NSF's proposal review process. We worked with the Department of Engineering Education Centers to identify bottlenecks in the process and automate certain tasks using Microsoft SharePoint 2007. We hope that this will result in a streamlined review process that will take considerably less time than it does now.



CHAPTER 5: RESULTS AND ANALYSIS

The main goal of this project was to make the proposal review process of the National Science Foundation's Division of Engineering Education and Centers (NSF-EEC) more efficient. After speaking with NSF-EEC staff, we determined that the main area for possible improvements is the panel set up phase. This phase is not standardized throughout NSF and contains many manual and repetitive tasks. The EEC Program Director stressed the possible errors stemming from the heavy email exchange involved in determining a panelist's Conflicts of Interest and Proposal Assignments. We determined that many pieces of the panel set up phase could be automated and centralized to make the jobs of the Program Directors and Program Assistants easier.

To develop and implement a solution we decided to use Microsoft SharePoint 2007. SharePoint provided us with many unique business capabilities that would help us with this project. This program allowed us to centralize all necessary information in multiple data sources and automate emails and alerts using workflows. We also used Microsoft InfoPath 2007 to create an electronic form that would be used to gather data from prospective panelist reviewers. We used InfoPath for this because it was developed to integrate with SharePoint and data synchronization was very easy to implement between the two programs. The high compatibility of Microsoft software was critical in allowing us to achieve our goal for this project.

5.1 CURRENT IMPLEMENTATION

Interviews with NSF staff provided information about the proposal review process that could not be found from its official documentation. By gathering information about the different roles that NSF staff members play in the process, we were able design process maps with the relevant stakeholders included. This led to discoveries of opportunities for improvements within the process. During the beginning of the review process, the Program Director (PD) reviews submitted proposals from eJacket that have been sent in by Principal



Investigators (PI). He then determines the dates and times his panels will be held and determines the level of expertise needed to review the proposals. The PD then compiles a list of panelists to invite to serve on the panels. The Program Assistant (PA) is in charge of manually sending these people invitations via email.

The potential panelist responds to the email by saying which panels they are available to attend, if any. The PD decides which proposals will be reviewed in each panel and then determines which reviewers will serve on each panel. After the proposals and panelists have each been assigned to panels, panelists are then asked to fill out a form stating any conflicts of interest they have with certain proposals. After the PD and PA receive these he must determine who will review each proposal. The reviewers then upload their personal reviews onto FastLane a week after receiving their assignments.

The PA then has the responsibility of reserving a room for each panel to be conducted in. These rooms have to be booked at least six months before the panel dates because there is a high demand within NSF for rooms. To make sure that the PA is able to book a room six months before the set panel dates, he will need alerts to remind him to book the rooms. The PA will then create the panels by getting the name and phone number of the different panel members. The panelist then must verify his or her contact information. This multitude of emails between the PA and panelists sometimes causes the PA to not see certain ones. The PA then goes onto eJacket to generate a letter detailing all the steps needed for each reviewer and sends it to each panelist. If the reviewers are not from a school or do not have a phone number, it is harder to get in touch with them to find out their correct information. The entire process of setting up a panel can take up to one month to complete.

During the first proposal review day of a panel, the PA needs to set up the room where the panel will be conducted. Computers and refreshments are provided for the panelists. Once all the panelists are present in the room, the PA explains to them how to log into all the systems they need for the proposal review. The PD then uses his assignment



matrix to remind the panelists who is assigned to each proposal with them. Each group then discusses the merits of each proposal amongst themselves. Each group contains a lead, scribe, and two reviewers. The group ultimately determines whether to recommend a proposal for funding or not. Once the final ranking had been set, the leads read aloud the letter that will be sent to each PI that stated whether they had been granted money or declined. If any mistakes are found, the scribe will make the changes and then submit them for final approval. Each reviewer will write about the strengths and weaknesses on the panel summary template. Once they have finished going over all the proposals on Day 1, the panel will do a read aloud of all the reviews on Day 2.

These interviews and observations gave us invaluable information about the proposal review process. They provided valuable insight that was used in finding places where they process could be improved. Staff's personal experiences also provided ideas of how the process could be automated.

An interview conducted with James Graham, William Marcinko, Lavender Fernandez, and Fared Aref, heads of the SharePoint team at NSF Division of Information Systems (DIS), provided an ample perspective about how SharePoint could be useful for this project. This meeting provided information about the extent SharePoint could be used at the security level that NSF employed for it. An important finding was the two different SharePoint environments available at NSF: An internal server and an external server. Internal SharePoint sites can only be access by people within NSF's firewall protected network. The only way the internal environment can be accessed outside of the NSF network is two forms of NSF authentication, one of which has to be physical and the other electronic. The physical authentication requirement is fulfilled by a random key generator token, a small device that generates a password every minute based on an encrypted algorithm. The electronic authentication is fulfilled by the users' NSF ID and password. Since this project required a system accessible to users outside NSF network, the team investigated using the External SharePoint server as an alternative. From our conversations with Mr. Graham, Mr. Marcinko, Ms. Fernandez and Mr. Aref, we learned that



External SharePoint sites are accessible by people outside of NSF. Users accessing this server only need electronic authentication which can be generated by DIS in the form of a username and password. According to DIS, it takes about 3 weeks to set up a fully working SharePoint site template.

5.2 SYSTEM ARCHITECTURE

The process of setting up panels that developed in this project involves multiple data repositories with varying levels of security. While most of the information involved is centralized in SharePoint, some data are located on different websites and/or systems. The PD selects people to invite to serve on his or her panels from different resources. Most of the time they get names from a website that lists potential reviewers. Sometimes though PDs meet someone in their personal travels that they would like to invite to serve on a review panel. Once the panelists are invited to serve on a panel they must fill out an InfoPath form with their personal information. This form populates the SharePoint library of panelists so that it could be easily accessed by NSF staff. Reviewer information also must be entered in the NSF systems, FastLane and Proposal and Review System.

The information of the proposals is stored in eJacket and SharePoint. When the PD receives a list of proposals that need to be reviewed for a cycle he must copy all of the information for those proposals from eJacket and paste it into the Proposals SharePoint list. Reviewers are able to access proposals from FastLane. This is where they download the summaries and entire proposals. After they have finished reviewing a proposal they upload their reviews onto the system. Figure 3 summarizes all the systems involved that make up the system architecture, as well as the stakeholders relevant to the main process. Dashed lines represent existing firewalls between databases.



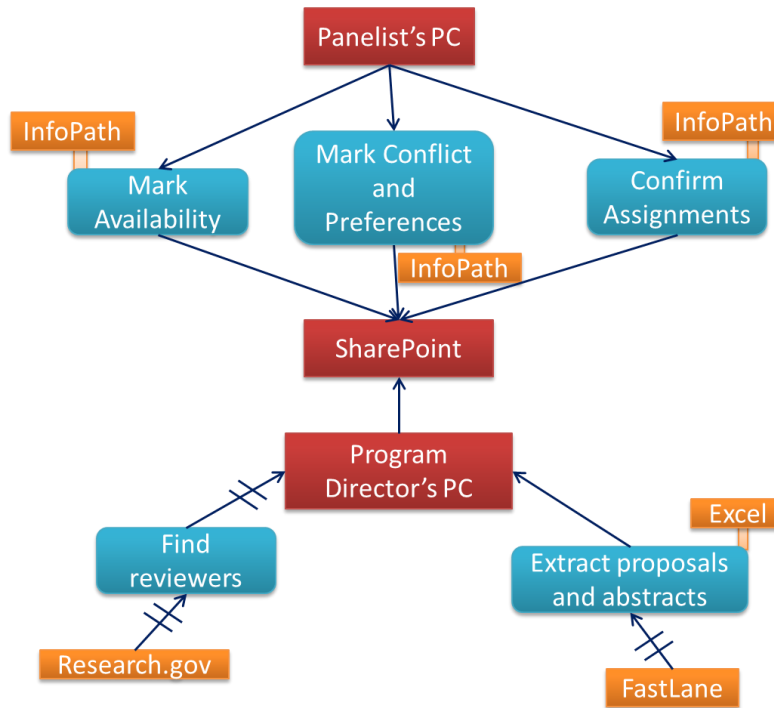


FIGURE 3 - EEC PANELS SITE SYSTEM ARCHITECTURE

5.3 TOOLS FOR AUTOMATING PROCESS

Microsoft SharePoint and InfoPath 2007 had the capability of making the panel set up process easier. SharePoint's capability of holding data from multiple sources was very useful as it allowed us to centralize everything in one easily accessible site. This eliminated the need for the PD and PA to look into different systems to find one piece of information. We were able to create an easy to navigate InfoPath form so that reviewers could mark their panel availability, conflicts and preferences with proposals, and view their personal assignments. This was more convenient than the previous method of handing this through multiple manual emails.

The most useful feature of this site though was the use of workflows. Workflows allowed us to automate parts of the process such as sending emails to remind people to



complete tasks or notifying the PD and PA of a panelist's conflict with a proposal. This automation resulted in less work for the people working with the panel process and made their jobs easier.

5.4 SHAREPOINT SITE

Throughout the course of this project, our main goal has been to improve the Engineering Education and Centers Division's workflow. Using Microsoft SharePoint has helped our team achieve this major goal by developing a site where information can be stored and viewed in a more organized way. We have created a SharePoint site where all the data and information involved in the proposal review process can be easily accessed by the Program Director, and other members with granted access. This is more efficient than Dr. Cheville's previous method of storing all information in a complex Microsoft Excel spreadsheet. This is because Excel does not support workflows the way SharePoint does, so whenever the Program Director needed to change information related to proposals or reviewers, the modification had to be entered manually.

5.4.1 SECURITY ASPECTS

A chief concern of this project was the different levels of security that needed to be implemented. Much of the information on the SharePoint site had to be restricted from the panelists due to it being confidential. SharePoint's securities were not as customizable as hoped for and we were only able to put restrictions on lists, not individual views and fields. This presented a new problem that was not expected. We were able to work around these roadblocks however by using web parts and creating different views of the side panel. This method allowed us to achieve our objective of implementing different levels of security based on who was accessing the SharePoint site.

To implement restrictions on certain information, several groups were created that would allow us to specify who could have access to certain information. The created groups were EEC Panels Program Director, EEC Panels Program Assistant, EEC Panels



Administrative Officer, EEC Panels Pre-Selection Panelists, Panel 1 Panelists, Panel 2 Panelists, and Panel 3 Panelists. The EEC Panels Program Director, EEC Panels Program Assistant, and EEC Panels Administrative Officer groups only consisted of one person. These groups had access to all of the information in the SharePoint site as they were NSF staff members. All panelists were initially put into the EEC Panels Pre-Selection Panelist group and were moved individually to their respective Panel groups as they were assigned to serve on a panel.

NSF's security guidelines mandated that certain information within the Panelists and Proposals lists was to be blocked from panelists. In the Panelists list, panelists were only allowed to view their own information. NSF prefers that panelists cannot view other panelists' information such as which panels they are serving on or what conflicts others have with certain proposals. The securities on the Proposals list were more numerous. Panelists were only allowed to view information vital to them such as Proposal Number, Title, PI First, PI Last, University, and Amount Requested. Additionally, they were only allowed to the Lead, Scribe, Reviewer 1, and Reviewer 2 fields on each proposal if their name was in one of those fields.

We initially hoped to implement these securities by creating multiple views within each list and only allowing certain people to have access to each view. Permissions can only be set at the list level in SharePoint 2007 however. This presented a problem as all groups needed to access some information within each list so we could not restrict the panelists from any of them. We were able to work around this by creating web part pages for each view that was created. Web part pages are customizable pages that are stored in a SharePoint documents folder. It is possible to put different lists on these pages and created customizable views for each list. We stored these web part pages in a document library accessible to panelists and didn't allow them to see any data that they were supposed to be restricted from.



5.4.2 SITE LISTS AND LIBRARIES

The SharePoint site developed to house our solution contains several lists and libraries. The lists and libraries in the EEC panel site serve as a dynamic repository of panel-related information such as panel dates, proposals and panelist assignments. Some SharePoint lists and libraries have embedded workflows that run based on the content of the list or library. Additionally, SharePoint lists can be programmatically modified to populate automatically from a specified source. As a result, we were able to develop a complex panel data management site that strips redundant steps from the panel set up process at NSF-EEC. See Figure 4 for a screenshot of all the lists and libraries in the site. All lists and libraries in the site were methodically developed to serve a both lean and functional role in the process. The main function of each list and library in the new EEC panel set up site are described in the next sections.



NSF External Collaboration Portal

EEC Panels

EEC Panels > All Site Content

All Site Content

View: All Site Content

Name	Description	Items	Last Modified
Document Libraries			
Administrative Information	Share a document with the team by adding it to this document library.	16	2 hours ago
Panel Review Summaries		0	6 hours ago
Panelists InfoPath		1	2 hours ago
Panelists' Information		4	2 days ago
Picture Libraries			
There are no picture libraries. To create one, click Create above.			
Lists			
Announcements	Use the Announcements list to post messages on the home page of your site.	0	10 days ago
Calendar		1	10 days ago
Links	Use the Links list for links to Web pages that your team members will find interesting or useful.	0	2 weeks ago
Panelist Invitees		4	2 hours ago
Panelists		4	2 hours ago
Proposals		14	3 hours ago
Tasks		7	4 hours ago
Discussion Boards			
Panel Summaries		5	10 days ago
Surveys			
There are no surveys. To create one, click Create above.			

FIGURE 4 - EEC PANEL SITE LIBRARIES AND LISTS

Administrative Information Library - This library was designed as a centralized hub for data that is only available to site administrators such as the Program Officer or Site developers. The Administrative information library contains the main lists and libraries related to maintaining the site content and controlling what reviewers are able to see and interact with. Direct links to this library are hidden from reviewers. Additionally, SharePoint permission settings were implemented to restrict any unauthorized user from



seeing this library, even if they managed to get the Uniform Resource Locator (URL) link to the library. Libraries protected within the Administrative Information library are: The Proposal Information Library, the Information Available To Panelists library, and the Panelist Information Library. These libraries contain links to the SharePoint pages with webparts that display filtered content from other lists in the site.

The use of webpart pages eliminates the need of having separate lists of information tailored to the specific audience its intended for. By adding special webaprts that link back to a sharepoint list or library, we were able to store information in a few master lists while allowing for dynamic and customizable views of the infromation. Additionally, webparts can be restricted by permission levels, which allows for further customization of how each user group views the site's content.

The *Panelist Information* folder is set up mainly to be used by the Program Director (PD). It stores pages that display information about each panelist: proposal conflicts of interest, proposal preferences, and proposal assignments. These pages are meant to facilitate the PD's decisions and data collections that form part of the panel set up process. The *Information Available to Panelists* library holds the webpart pages that display each panelist's assignments, contact information, tasks, and proposal information. The last library in under Administrative Information is the *InfoPath Documents* library. This library holds the Infopath form template used to collect infromation from reviewers. The template is what needs to be edited by developers in order to implement any changes into the form seen by other user groups.

The *Panel Review Summaries* library will store Microsoft Word documents containing the panel summary for each proposal. The panel summary is meant to capture the main points of discussion during the peer review of each proposal. This document will be drafted by the scribe assigned for each proposal, and will be revised by the lead assigned to the proposal being sumarized. However, all the panelists that have no conflicts of interest can review a panel sumary and provide feedback. In order to organize feedback



and variations of the document. The discussion board *Panel Summaries* was implemented to keep track of each revision of the document along with the feedback from other panelists in a centralized location. This was previously done via countless emails and versions of the summary.

The Calendar list was used to store each panel's information such as the date and location, Additionally, sharpoint workflows were implemented to deploy from the calendar depending on the panel date.

There are also two control lists that allow users to customize their workflows. Task Timing Settings allows the user to set the due dates on each task assigned by the workflow and the time between reminders for that task. Email settings allow the PD to customize the body of emails sent to panelists. These lists allow for flexibility if multiple Program Director's within NSF want to use the SharePoint site for their own panels. They will not be restricted by the previous PD's settings.

The Administrators list allows the PD to declare the Program Director, Program Assistant, and Administrative Officer for each panel. The web part on the home page draws from this list so that panelists can see the contact information of NSF staff. This list is also used in workflows to send emails. Since workflows for NSF external SharePoint sites cannot send emails to groups, the workflows are set up to send emails to the addresses in this list depending on their position within NSF.

MASTER LISTS

The majority of the information used around the site is stored in three master lists and libraries: *Panelist Invitees*, *EEC Panels Forms*, and *Proposals*. These are referred to a master lists and libraries because they are meant to have all the site's information, which can be pulled using different methods (webparts, views, InfoPath, etc) into a user-friendly front end.



Panelist Invitees List - This list is used as the preliminary repository for people whom the PD wants to invite to the panels being set up. Prior to accepting to participate in one or more of the panels, users only have access to this list and the invite InfoPath form. Once the invitation is accepted, a request is sent to the site administrators to grant him or her reviewer permissions on the site. This list also provides a series of checkpoints to verify that a person can be invited to the panels. Checkbox fields for each item in the list denote whether or not the person has been successfully added to the SharePoint directory and his or her information has been confirmed in FastLane.

The *EEC Panels Forms Library* will serve as the main storage location for all the information that relate to each individual panelist. Once an invitee is given reviewer status, his or her information will be collected using an InfoPath form, which will in turn populate the Panelists list. Examples of the information stored in this list are: demographic information, conflicts, panel assignment and proposal assignment. This list serves as the data source for many of the webparts used to display a filtered version of the original content.

Lastly, the *Proposal List* is the master list used to manage all the information with regards to the proposals to be reviewed. The list was formatted so that the Program Officer could easily copy and paste from FastLane or eJacket into the list's datasheet view. In addition, we added columns for the panel in which it will be reviewed, and the lead, scribe and reviewer assignments for each proposal. This set up allowed the team to use webparts linked to the list to display different views of the information. These views are intended to help the PD visualize the data as he or she receives responses from the panelists and is able to make appropriate assignment decisions.

5.4.3 USER INTERFACE

The homepage of EEC Panels contains different links and information for the user to use when needed as seen in Figure 5. The three main links on this page are FastLane, eJacket, and Change Password. FastLane is used to find and add information about the



different proposals and eJacket is used to organize and obtain the proposals after they have been sent in via FastLane. The Change Password link is used for the user to change their password after being granted access to this SharePoint website. The reviewer is given a generic password by the Program Assistant that must be changed he or she logs in.

Along with the useful links at the top of the homepage, there are also other useful web parts on the right side of the homepage. The Announcements, Tasks, and Links web parts can be found on this side for the reviewer's convenience. Announcements are used to tell the reviewer of any updates that has happened so far, Task tell the reviewer what he or she needs to complete, and Links are used if the Program Director has found any useful links that he or she would want to share it with the review panel. A calendar, not shown in Figures 5 or 6, is used for the reviewer to know when the proposal review dates are.

Hyperlinks to other web parts are located on the left panel for the convenience of both panelists and NSF staff. NSF staff has access to multiple links that direct to them to different views of the lists that can be accessed for different objectives. Panel Dates links to the Calendar list, which displays the dates, times, and locations of the different panels taking place and Panel Invitees is an initial list of panelists to be invited to the panels. There are also links to the Panelists list so that staff can view the panelists' information, reviewers in each panel, panelists' conflicts of interest, and panelists' preferences. Links to the Proposals list allow staff to view general proposal information, the lead, scribe, reviewers on each proposal, and the proposals for each panel. There is also a link so that staff can view tasks that need to be done throughout the review process.

A different view was created for the panelists' purposes as seen in Figure 6. Panelists are only allowed to view certain information due to the security restrictions at NSF. They have links created for the panel dates, their own personal information, general proposal information, and what proposals they are assigned to review. They also have links for the discussion board to discuss each proposal and for the tasks that are assigned to them.





FIGURE 5 - HOMEPAGE ON NSF EEC SHAREPOINT WEBSITE

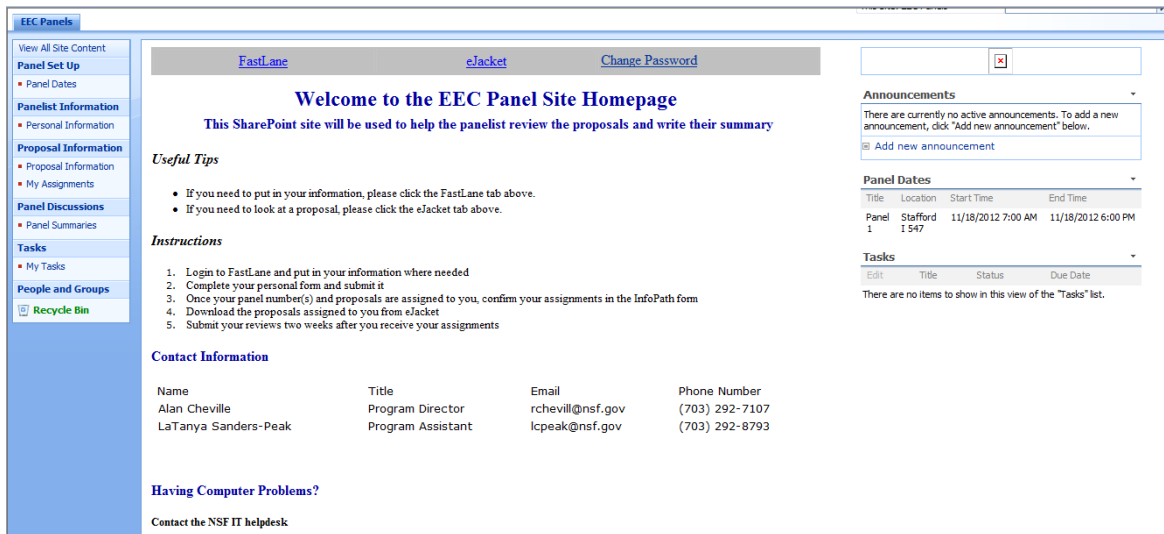


FIGURE 6 - PANELIST HOME PAGE ON NSF EEC SHAREPOINT SITE



5.4.4 INFOPATH FORM

One of the main obstacles the team had to overcome was finding a viable solution for collecting and validating each reviewer’s availability, contact information and most importantly, their conflicts of interest. Through interviews with the EEC Program Director, Dr. Alan Cheville and the EEC Program Assistant, LaTanya Sanders-Peak, the team identified ways in which the current method could be improved. The team concluded that integrating an InfoPath form was researching viable way to collect panelists’ information regarding availability, conflicts of interest, and preferences.

The form developed consists of three sequential views: Panelist Information and Availability, Panelist conflict and Review Section. This ensures that certain parts of the form could be blocked off depending what the user filled out. Such a feature was necessary because invitees need to accept or reject the invitation before they can see the proposal information at all.

The Panelist Information and Availability view is the first view a user would see upon opening the form for the first time as seen in Figure 7. This view serves two main purposes: Verifying contact information and confirming panel availability. Each user will be asked to verify their First and Last Name, along with their main email address and phone numbers. They can optionally fill out demographic information fields used for NSF reporting. When confirming availability, the user will be asked to mark “Yes” or “No” for each of the three panel dates displayed. If they mark “Yes” for any of them they “Accept” the invite and are allowed to access the second view of the form.



National Science Foundation Panel Invitation Form

Personal Information

First Name: Date: Gender: Male Female

Last Name: Phone Number: Disabilities?: Yes No

E-mail: Race/Ethnicity?:

Expertise:

Confirm Availability

Please check off which dates you would be available to serve as a reviewer for an NSF Proposal Review Panel.

	Start Date	End Date	Attending	
Panel #1	<input type="text"/>	<input type="text"/>	<input type="radio"/> Yes	<input type="radio"/> No
Panel #2	<input type="text"/>	<input type="text"/>	<input type="radio"/> Yes	<input type="radio"/> No
Panel #3	<input type="text"/>	<input type="text"/>	<input type="radio"/> Yes	<input type="radio"/> No

FIGURE 7 - EEC INFOPATH VIEW 1

In the second view (Figure 8), the user is presented with a simple interface that flips through the proposals and allows them to mark conflicts and preferences. The form was developed to contain error trapping. For example, a user who has marked a conflict cannot go back and mark that proposal as one of his or her preferences. A label in the form tells the user how many proposals there are there to review and which proposal is currently being reviewed.

National Science Foundation Panel Invitation Form

Review Conflicts of Interest

Please review each proposal's information and verify that you do not have any potential conflicts of interest (COI's). If so, please check the COI checkbox for that proposal. Optionally, you may check proposals you would like to/rather not review. Your choice will be considered, although checking a preference is no guarantee of assignment.

Proposal Number: Proposal Title:

Principal Investigator Name: Institution:

Conflict of Interest?: Yes No

Reviewing preference: I'd like to No preference I'd rather not

Conflicts: Preference (Yes): Preference (No):

out of 0

FIGURE 8 - EEC INFOPATH VIEW 2



The third view of the form (Figure 9) is not activated immediately after the second one is completed. This last view is triggered by the PO when he or she has reached final assignments for each proposal. The user sees a few fields labeled “Lead”, “Scribe” or “Reviewer”. In each of those fields, the proposal number of the proposal he or she has been assigned will be displayed.

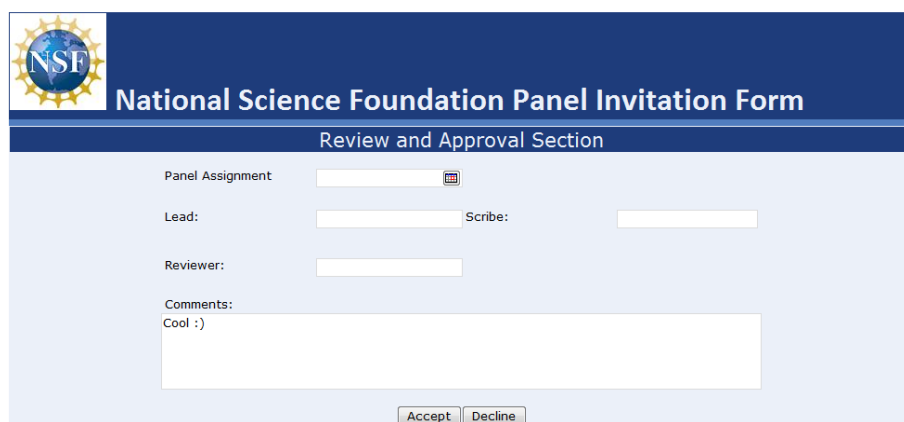
The image shows a web-based form titled "National Science Foundation Panel Invitation Form" with a sub-section "Review and Approval Section". The form contains several input fields: "Panel Assignment" with a dropdown menu, "Lead:" and "Scribe:" each with a text input field, and "Reviewer:" with a text input field. Below these is a "Comments:" section with a text area containing the placeholder "Cool :)". At the bottom of the form are two buttons labeled "Accept" and "Decline". The NSF logo is visible in the top left corner of the form's header.

FIGURE 9 - EEC INFOPATH VIEW 3

5.4.5 WORKFLOWS

In order to automate tasks in the review process we created multiple SharePoint workflows in SharePoint Designer 2007. These workflows were used to send emails, create tasks for people, and send reminders when tasks were not completed. Workflows are one of the most important aspects of this SharePoint site, as they will decrease the amount of work that NSF-EEC staff will have to do.

One of the main functions that our workflows performed was the assignment of tasks to different people. One of our workflows has the ability to assign the task of reserving a room for a panel to the Program Assistant. The due date for this task is automatically set to be six months and two weeks before the panel begins and if it is not completed on time emails will be sent to the PD and AO to let them know that this still



needs to be done. Two other workflows also assign the tasks of stating panel availability and marking conflicts of interest and preferences of proposals. There are additional workflows created that check to see if these are completed on time and send reminder emails if they are not.

The other reason for creating workflows was the automation of emails sent among the PD, PA, and panelists. We created workflows to reduce the number of manual emails that need to be sent. Our workflows were able to automate the invitation email sent by the PD to panelists to serve on a panel. We have also automated the emails sent when a panelist's assignment is modified and they need to be notified. In addition, an email is sent to the PD when panelists state which panel they are able to attend, mark a conflict or preference with a certain proposal, or confirm their assignments on proposals. There are also emails automated between the PD and PA. An email gets automatically sent each time a panelist is assigned to a specific panel and when a panelist's assignment on a proposal is modified.

5.4.6 PROGRAM DIRECTOR USAGE

The Program Director's usage of the site is mainly directed towards choosing the prospective panelists, assigning proposals to panels, and determining reviewers for each proposal. Following the steps and instructions that our Program Director Manual (Appendix G.C) provides, this process is very easy to accomplish and straightforward. First, the Program Director imports all his Microsoft Excel list of contacts into SharePoint. This list contains all the basic information of the reviewers (first and last name, email, and phone number). The list is exported to the Panelist Invitees list. The PD then sends the link to this list to the Division of Information Systems (DIS), so that they can create SharePoint usernames and passwords for each of the prospective reviewers. Later on the process, the PO receives emails with all of the prospective reviewers' availability for the proposed panels. Afterwards, he assigns the proposals to each panel. This is done in the Proposals list. This is followed by a check of the panelists' information regarding conflict of interest,



availability, expertise, and preferences listed in the EEC Panels Forms library. Finally, assignments regarding Lead, Scribe, and Reviewers for each proposal are made in the Proposals list, under the Assignments view.

5.4.7 PROGRAM ASSISTANT USE

The Program Assistant's usage of the site mainly addresses important tasks such as setting up a panel, booking the room where the panel will take place, and cross-checking panelists' contact information with FastLane. This process begins after the Program Assistant logs into the external SharePoint Site. The first thing the Panel Assistant or PA does is set a new panel, at the "Panel Dates" list. It is important to take into consideration that a room needs to be booked at least six months prior to the selected panel date. Setting the panel will start a workflow, which will send an email to the PA, with the task of booking a room for the panel. Afterwards, the PA makes sure that the panelists contact information entered by the PD, is accurate matches with the information in FastLane. Similarly, the PA enters the reviewers SharePoint user name in the list to make sure that they have been granted access to the site. At a later stage of the process, the PA puts the panelists in different SharePoint groups based on what panel they have been assigned to. Leads, Scribes, and Reviewers are then assigned in the Proposals list, using the Assignments view.

5.4.7 PANELIST USE

The panelist usage of the site is strictly for completing the required InfoPath forms, checking their assigned tasks and panels, and discussing the reviewed proposals in the discussion board. This process begins after the prospective panelist has received an invitation email with his or her username and password for the external SharePoint site and a link to complete an InfoPath form. The InfoPath form consists of three parts, each part completed at a specific time. After the first part of the form is completed, another email will be received notifying that the second part of the form is available for completion. The panelists mark their conflicts of interest and preferences of certain



proposals in this part of the form. Finally, after the proposal review has taken place in the panel, reviewers can start discussion and post comments about the reviewed proposals, in order to accomplish the most accurate review. This last step takes place at the “Panel Discussions” list.

5.5 TESTING

In order to test this SharePoint site we found five volunteers within NSF-EEC who were willing to play the role of review panelists. We were able to get DIS to create external SharePoint accounts for them and they were invited to serve on a mock panel. This testing was still ongoing at the end of the project.

5.6 SYSTEM DOCUMENTATION

In terms of design, the team aimed at producing an intuitive and user friendly solution. Additionally, the team developed thorough user manuals about the SharePoint site. These were developed in order to make the site’s usage as easy as possible. Without proper instructions and detailed process explanation people would not be able to use the site after the project was over and its impact on NSF would have been minimal. Within these manuals the reader can find detailed step-by-step guides that explain how to use the SharePoint Site from the different user perspectives involved in the proposal review process.

Similarly, our team also developed a system developer’s manual that describes the site in a more technical nature. This manual describes the lists, libraries, and workflows in more depth so that someone in DIS could make wanted modifications to the site. Each field is described here and each workflow step is given. This manual makes it easy for an NSF staff member to improve parts of the site without having to recreate what has already been done. The documentation developed for the InfoPath form



CHAPTER 6: CONCLUSIONS AND RECCOMENDATIONS

This project resulted in the creation of a SharePoint site that was used to set up panels. Certain areas in the process were susceptible to human errors such as miscommunication and scattered data. There were also NSF security measures that were difficult to implement using the current system. Microsoft SharePoint and InfoPath 2007 helped solve these problems with their own built-in features. SharePoint allowed us to store all important data in one place and automate the certain tasks and alerts. This was done through the use of workflows. This feature on the software was very useful as it allowed for the automatic sending of panel invitations and alerts when certain tasks were not completed on time. It also allowed for alerts to be sent with proposal assignments were modified and conflicts of interested with proposals were given by reviewers. SharePoint also made it easy to customize securities on the site. Different groups were created for the Program Director, Program Assistant, Administrative Officer, and panelists. The groups that NSF staff members were in had full or nearly full control of the site. Panelists had very restricted access and could only view certain data. SharePoint had many useful features that were essential to the completion of this project.

Another piece of software used in this project was Microsoft InfoPath 2007. InfoPath allowed for the collection and centralization of important panelist data via a form. This form allowed panelists to mark their panel availability, conflicts of interests, and preferences in place rather than several. InfoPath also integrate well with SharePoint as it copied the data onto a list that made it very easy for the Program Director to view. Having all of this data in one place was very much easier than the previous process of tracking it through multiple emails. Securities were also set on the InfoPath form that did not allow panelists to view certain data until required conditions were met. This method was an improvement over what was implemented before.

Due to the nature of this project, the main deliverables were not intended to be a set of recommendations, but rather a working solution to the problems addressed. However,



the team identified that the solution provided can serve as a basis for further improvements driven by software improvements. NSF's Division of Information Systems is working on getting all the systems ready to migrate from SharePoint 2007 into SharePoint 2010. This upgrade will open opportunities for more seamless integration with some of NSF's legacy systems. Panel reviews are a core component of the NSF's business, and a unified integration of the previous systems (FastLane, PARS, eJacket, etc.) will increase the organizational value to solutions such as the one implemented in throughout this project. One of the most prominent constraints the team observed was working within the government regulations restricting the process as well as working around the data gaps between NSF systems. Therefore, the team highly recommends that the Division of Engineering Education and Centers remains in touch with DIS when SharePoint 2010 is installed organization-wide to ensure that the EEC Panels Site continues to be supported as intended. Additionally, we recommend that once DIS has verified integration with NSF systems, for an initiative to be taken to the DIS SharePoint team to have this implementation serve as a pilot project with the new SharePoint version. This team was able to successfully develop a working SharePoint site that improved the workflow of several of the administrative tasks from the proposal review panel set up. The new pilot we recommend would hope to have direct data connections between the site's libraries and NSF's FastLane databases, as well as other government servers/databases that allow for the secure connection and provide data relevant to the process. In doing so, we anticipate that more tasks can be automated in efforts to streamline the overall NSF proposal review process.



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APPENDIX A: SPONSOR BACKGROUND

The National Science Foundation (NSF) is a federal government organization that is responsible for giving grants to different organizations and researchers to advance the progress of science in the United States (National Science Foundation, 2011). It was established in 1950 and has since played a very important role in scientific research in the United States. NSF is given an annual budget from Congress that differs from year to year. It is also structured into various departments that are led by one person. In addition, NSF also works with state governments and government agencies to meet its goals. NSF is critical to the advancement of science in the country.

The National Science Foundation was founded in 1950 by Congress to "promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense..." (National Science Foundation, 2011, p. 1) It has five main goals: discovery, learning, research infrastructure, and stewardship, and is responsible for determining which proposed projects have the potential of solving scientific problems in the United States. Once NSF identifies the projects that they will fund they decided upon the value and term length of a grant. Most of the grants are awarded to individual groups working on a specific project while others are used to fund research centers set up to conduct projects. NSF is responsible for about 20% of all federally funded research done by colleges and universities in the United States and has funded over 180 Nobel Prize winners over the past decade. They are an integral part of advancing scientific research within the country.

The structure of the National Science Foundation is organized into different departments (National Science Foundation, 2011). The leadership role is split into two components, a director and a twenty-four member National Science Board (NSB). These positions are appointed by the president of the United States, affirmed by the Senate, and serve six-year terms. The director is responsible for leading all of the staff and management and for managing NSF's day-to-day operations. Subra Suresh is currently the person in this



position. The NSB is composed of twenty-four leading members of the scientific community within the United States. They meet six times per year and are responsible for establishing the overall policies of NSF. The current chairman of the National Science Board is Ray M. Bowen and he has been in this position since 2002. Overall, NSF currently employs about 2,100 people, including about 1,400 career employees, 200 scientists, and 450 contract workers. NSF is further broken down into seven main departments responsible for research and education in their respective fields. These are Biological Sciences, Computer and Information Science and Engineering, Engineering, Geosciences, Mathematical and Physical Sciences, Social, Behavioral, and Economic Studies, and Education and Human Resources. Each of these is run by a director and assistant director. There are also other departments and offices responsible for various operations within NSF. These operations include financing, legal affairs, award processing, and other tasks that are needed for the functioning of NSF. The National Science Foundation has is broken down into many offices that each play a very important role to the functioning of the organization.

NSF is a public, federally funded organization that is granted money by Congress to run its operations (National Science Foundation, 2011). They were given \$6,859,870,000 in 2011, and this is typical of what they are normally provided. Of this money, \$1,308,280,000 was given to the department of Mathematical and Physical Sciences, with the rest of the major departments averaging \$683,733,333. Each year NSF must submit a formal request to Congress for funding, and Congress then decides how much money to give them. The President must then sign Congress's decision into law before any money is awarded. The budget for NSF is determined on a yearly basis by both the legislative and executive branches of the United States federal government.

In order to effectively accomplish its goals, NSF must work with other agencies and branches of the federal and state governments (National Science Foundation, 2010). Since it is a publically funded organization, NSF must give Congress access to its actions so that they can make sure that everything is operating efficiently. NSF works with every state in the country and provides their governments with grants for



carrying out research and projects. NSF also works with other government agencies with goals similar to its own. Among these agencies are the National Institutes of Health, United States Department of Agriculture, and the National Institute of Biomedical Imaging and Bioengineering. In addition to working with the government, NSF also works with various foreign and private organizations and businesses. This organization collaborates with many other groups in order to meet its goals.

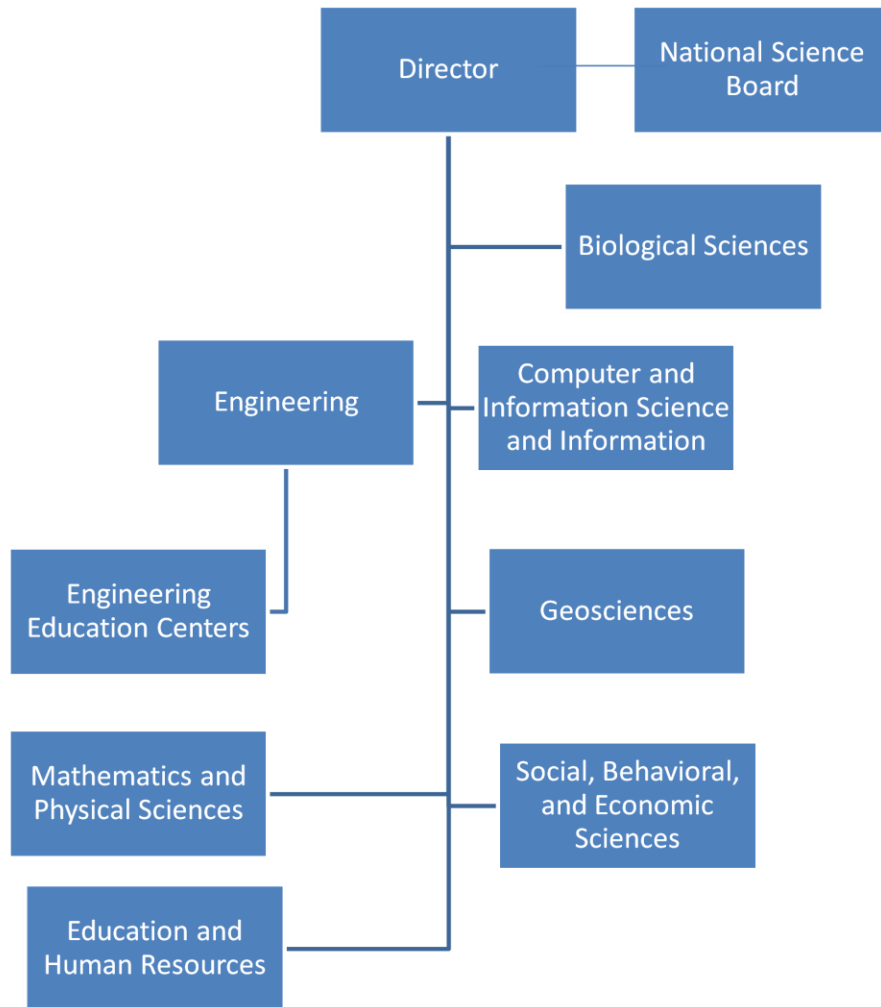


FIGURE 10 - NSF ORGANIZATIONAL HEIRARCHY



APPENDIX B: WHY THIS PROJECT QUALIFIES AS AN INTERACTIVE QUALIFYING PROJECT AT WPI

At Worcester Polytechnic Institute, undergraduate students apply their understandings of science and technology to current problems that are happening in the United States or in different countries (Worcester Polytechnic Institute, 2010). The Interactive Qualifying Project (IQP) is a program that challenges students to do that. IQP challenges are usually related to social issues and human needs. Interdisciplinary teams are made up of two to four students who work with their external sponsoring organization to identify a problem and how to improve it. There are many well-known external sponsoring organizations such as the National Science Foundation (NSF) and the United States Coast Guard as well as smaller external sponsors. Most of the project topics are analysis of how technology affects individuals and communities.

An IQP helps students to gain knowledge outside of their major field and to work within a group to solve current problems (Worcester Polytechnic Institute, 2010). During the IQP, students are expected to achieve different outcomes related to the project program such as improving oral communication and writing skills. Students also need to be able to identify the project's problem quickly so the interdisciplinary team is able to solve it. Most IQPs are conducted within an IQP Division. There are thirteen different divisions, such as Technology and Environment and Education in a Technological Society.

The National Science Foundation workflow is the main topic for this report. The project is in IQP Division 45. Division 45 is named Science and Technology – Policy Management. Its goal is to “focus on public policy as it is used to promote or constrain technology” (Worcester Polytechnic Institute, 2010). The National Science Foundation helps to promote scientific research and different science and engineering programs by giving grants to proposed projects. These project proposals must go through a review process so that NSF can determine if they are worthy for funding. This project qualifies as an IQP because our interdisciplinary team is trying to improve NSF's workflow to allow



them to become more efficient with their merit review process. If we achieve our objectives for this project, we will be successful in completing an IQP as well as help an organization that is critical to the advancement of science and technology in the United States.



APPENDIX C: INTERVIEW AGENDA

With regards to the Merit Review process:

1. What are some of the common issues that reviewers encounter which slows the review process?
2. Are there any additional criteria use to select the reviewers who have been recommended to review the proposals by the Principle Investigator?
3. Are there any collaboration tools used by the reviewers during the peer review phase?
4. From your perspective, where do you believe the process is unnecessarily slow?
5. What criteria do you look for that might overrule the Program Officer's original recommendation?
6. Are there any issues with regard to the business, financial, and policy review of the GAG that pertain to the scope of this project?
7. What are some of the issues encountered when selecting a review panel for a proposal?
8. What parts of the proposal review process do you like the most? What parts do you dislike the most?
9. Could you use any extra resources that would make your job easier?



APPENDIX D: SURVEY PROTOCOL

We have broken down a series of questions based on the phases of the merit review process. Two different sets of questions will be administered to each participant. The first consists of a general question applicable to all participants regardless of their role. The next set of questions is applicable only to individuals whose work contributes to a specific part of the process. The aim of this survey is to be able to identify where the process slows down the most. Additionally, we hope to find where this can be automated using SharePoint 2007 workflows. This is an unstructured interview, therefore the questions are broad in order to get the participant thinking about what are some weak-points he/she has observed while working.

General Questions

- 1) From your perspective, where would you say the process has potential for improvement? Why?
- 2) Where have you observed miscommunication breaks the flow of the process?

Phase 1:

- 3) How often are wrong ID numbers assigned to a proposal?
- 4) From your perspective, why are proposals assigned a wrong number? How do you think this can be solved?
- 5) On average, how long does it take for mishandled proposals to be identified?

Phase 2:

- 6) How often do review panels have to find outside accommodations for reviewing proposals?
- 7) What do you look forward to the least in this process? Why?



Portfolio Management System:

- 8) What parts of the process are not handled by existing software systems?
- 9) What could be better managed if new/different tools were available?



APPENDIX E: INTERVIEW SUMMARIES

From early on, the team identified interviews as a major source of information about the process we were to work with. We reasoned that, the people who form part of the day to day steps in the process would be able to provide us with a profound level of understanding not found in documentation. We arranged meeting with the main stakeholders of the panel set up and proposal review processes. Lastly, we looked into people whose names came up in other meetings and arranged meetings with those we identified could be helpful. The summaries of the meetings are described in the following sections.

A. WPI OFFICE OF SPONSORED PROGRAMS

Interview held at 10:00 A.M. on September 29th 2011 in the Office of Sponsored Program

The Office of Sponsored Programs (OSP) at Worcester Polytechnic Institute (WPI) is responsible for reviewing proposals written by WPI staff and students before they are submitted to the National Science Foundation (NSF). They do not do a qualitative assessment of the proposal, although WPI is working to bring in people who could do that. We asked Mr. Lemire, Mr. Russo, and Ms. Houle how often proposals were returned based on not meeting requirements. They said this only occurs a “handful” of times per year. They then discussed how often the guidelines outlined in the NSF’s *Grant Proposal Guide* (GPG) are followed by the reviewers of NSF. They also mentioned how solicitations for proposals by NSF also have their own guidelines in addition to those in the GPG. The interviewees also discussed the difficulty to get a proposal funded. Due to an increase in submitted proposals to NSF, some very good projects get rejected for funding as NSF does not have enough money to give them. Oftentimes the OSP must go back to a proposal’s Project Investigator (PI) to fix formatting issues with the PI’s proposal. This is expected and unavoidable because the PI’s do not focus on smaller details such as formatting. Sometimes though, the PI will be stubborn and refuse to fix his errors. The interviewees also discussed



their communication with NSF. They also talked about modifications made that add more tasks for people submitting proposals.

B. PANEL OBSERVATIONS

During the seven weeks working in the National Science Foundation (NSF), we have conducted three interviews and two panel observations. On October 25, 2011, we were able to observe a panel as they reviewed different proposals on their second day of review at NSF. Panelists are considered NSF staff members during this period. On the second day, Alan Cheville, Program Director of NSF-EEC reviewed the rules that the NSF staff members must follow. They are not allowed to use Gmail, Dropbox, or Google docs to transfer information between different staff members because they can be hacked and information can be stolen. All NSF information must remain confidential.

The review panel broke into small groups of four to talk each proposal they were assigned to. Each group has a lead, scribe, and two reviewers. The lead looked for grammar errors and gave a summary of the proposals, the scribe wrote down the conversations that the group had and made necessary changes to the summary, and the reviewers gave their feedback on the proposals. The group concurred at the end of the review whether to rate the proposals as Highly Recommended, Recommended, or Not Recommended. Alan Cheville has also created a matrix to find out if anyone has a conflict with proposal's Principal Investigator (PI). If a conflict does appear, the person(s) is asked to step out of the room until the discussion of that proposal is over.

After the groups initially ranked each proposal, they discussed each one again to determine whether to give it a different ranking or not. It took about 40 minutes for reviewers to rank the proposal again. Once the final ranking had been set, the leads would read aloud the letter that would be sent to each PI that stated whether they had been granted money or declined. The reason for this read aloud is to catch any mistakes that



would have normally been read over. If any mistakes are found, the scribe will make the changes and then submit them for final approval.

C. PROGRAM ASSISTANT INTERVIEW

On October 26, 2011, we were able to talk to LaTanya Sanders-Peak, the Program Assistant of the NSF-EEC. One of Ms. Sanders-Peak's responsibilities was to reserve rooms for review panels to be conducted in. These had to be booked six months in advance because they were used often. A room can be put on a waiting list if need be. Stafford II, which is another building that NSF uses, has a floor of rooms that are reserved. If a room is not available, a hotel room can be used or a room on a different floor in the building.

Ms. Sanders-Peak uses a system called PARS (Proposal and Review System) to create the panels. She generates a list of files on SharePoint where she has the name and numbers of the different panel members. The contact information is then sent to them so they can check it. FastLane can integrate with PARS so the reviewers are able to put their information into FastLane. She creates a generic password for them so they are able to log in and change it later.

Ms. Sanders-Peak then goes onto eJacket to generate a letter and send the letter out to each reviewer. From eJacket she is able to get the panel, letter, and cover letter. If the reviewers are not from a school or do not have a phone number, it is harder to get in touch with them to find out their correct information. Each reviewer also has to send Ms. Sanders-Peak their conflicts with the proposals. All proposals are given to the reviewer on a CD so they are able to go over their own while they are in their hotel room.

In order for Ms. Sanders-Peak to set up the panels, she has to move from system to system. She goes through 6 different systems to complete a panel and it can take her up to 1 month to complete the panel set up. Ms. Sanders-Peak invited us to come to the first panel review day so she can show us how she sets up for the reviewers.



October 27, 2011 was the first day of a new panel. Ms. Sanders-Peak demonstrates to the panelists how to sign into FastLane and eJacket. The reviewers have to give her their transportation information and they will have to email LaTonya their itinerary so they can be reimbursed later.

Alan then gives an introduction to the panelists and the reviewers start to discuss the proposals. All of the proposals must be discussed on Day 1, and they cannot leave until they finished the discussion. Each reviewer will write about the strengths and weaknesses on the panel summary template. Once they have finished going over all the proposals on Day 1, the panel will do a read aloud on Day 2.

D. DIVISION OF INFORMATION SYSTEM INTERVIEW

On November 1, 2011, we had a meeting with James Graham, William Marcinko, and Fareed Aref to discuss the usage of SharePoint and its security. We needed to find a way to invite people outside of NSF into the SharePoint website. They told us that they use two different types of SharePoint sites within NSF, internal and external. Internal SharePoint sites are solely within the NSF because people have to have an NSF ID and/or a token, which is a thumb drive that contains a code, to access the site. External SharePoint sites are accessible by people outside of NSF. DIS (Department of Information Services) just needs to create a username and password for these users. It will take about 3 weeks to set up a fully working SharePoint.

From this interview, we learned that we are not allowed to independently use SharePoint Designer due to federal laws. We are able to use it with supervision however. We will use workflows to send reminder emails, assign tasks, and send alerts to panelists, the Program Director, and the Program Assistant.



E. BIOLOGY DIRECTORATE 'BIG PITCH' DEMONSTRATION

On November 8, 2011, we had an interview with William Marcinko and Lavender Fernandez. Ms. Fernandez gave a demonstration of a SharePoint created for the Biology Directorate at NSF. The site was called Big Pitch, and was a pilot project for a panel review held entirely online. Ms. Fernandez went over the layout of the page and the different links that are available for the reviewers. The SharePoint site does not use workflows to prevent a spam of emails, but it is necessary for the NSF ENG/EEC SharePoint site to have reminders for the reviewers. Instead, the developers of Big Pitch implemented an InfoPath form template that was filled out by each of the panel participants. While the form was not able to behave the way a workflow did, it provided a way to programmatically customize its functionality. Overall, this interview was very helpful in knowing the layout of the SharePoint website and to understand how to format the site.



APPENDIX G: SYSTEM DOCUMENTATION

A. PANELIST USER MANUAL

As the one of the Panelists, you will need to supply your information and your available time in an InfoPath form. Once your information has been looked over, you must wait for an email to be sent to you with your panel assignment. This assignment will inform you that you need to fill out your conflict of interest. Once your conflict of interest has been filled out, you will need to confirm your assignments. Once you have reviewed the proposal, you will need to upload a summary of that proposal onto the SharePoint site if you are assigned as the scribe.

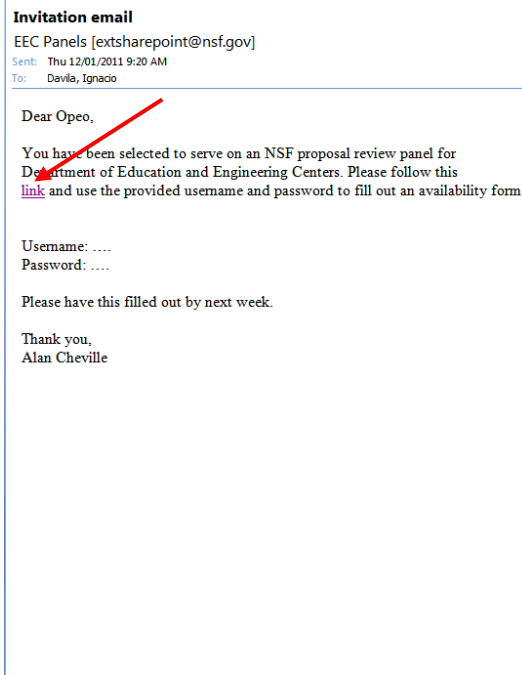
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SUBMITTING INFORMATION THROUGH INFOPATH

1. You will receive an invitation email to serve as a panelist for an incoming proposal review panel. The email will include your username and password for an external SharePoint site. Click the link in the email for it to take you to an InfoPath form.



INFOPATH FORM

1. The InfoPath form is used for you to fill in required information. The form offers a “Save” option so you are able to complete the form at different times. When done, click the “Submit” button. If you clicked “No” for all the available panels, then you will have to check the “Yes, I forfeit my invitation” in order to continue.

National Science Foundation
Review Panel Invitation Form

December 09, 2011

Personal Information

First Name: _____ Last Name: _____ Phone Number: _____ E-mail: _____
Institution: _____ Expertise: _____

Confirm Availability

Please check "Yes" for the dates you would be available to serve as a reviewer for an NSF Proposal Review Panel.

	Start Date	End Date	Available
Panel #1	November 22, 2012	November 23, 2012	<input type="radio"/> Yes <input checked="" type="radio"/> No
Panel #2	December 09, 2012	December 10, 2012	<input type="radio"/> Yes <input checked="" type="radio"/> No
Panel #3	December 20, 2012	December 21, 2012	<input type="radio"/> Yes <input checked="" type="radio"/> No

Save and Close Submit

By checking this box you certify that you are forfeiting this invitation and understand you will not be participating at a NSF panel.

Yes, I forfeit my invitation.

2. If you are not available for any of the panels and if you forfeit your invitation, the following screen will appear.



You have forfeited your invitation.




We appreciate you took the time to respond to our invite. We understand that due to busy schedules, not everyone is able to attend to our panels.

We hope next time our panels are able to fit your schedule.

You may close your browser window.

[NSF Division of Engineering Education and Centers](#)

3. If you are available for at least one panel, click “Yes”. You can click more than one panel if it fits within your schedule, though you will only be assigned to serve on one. Once you are done, you can click “Submit” to continue.



National Science Foundation Review Panel Invitation Form

December 09, 2011

Personal Information

First Name: Last Name: Phone Number: E-mail:

Institution: Expertise:

Confirm Availability

Please check “Yes” for the dates you would be available to serve as a reviewer for an NSF Proposal Review Panel.

	Start Date	End Date	Available
Panel #1	<input type="text" value="November 22, 2012"/>	<input type="text" value="November 23, 2012"/>	<input checked="" type="radio"/> Yes <input type="radio"/> No
Panel #2	<input type="text" value="December 09, 2012"/>	<input type="text" value="December 10, 2012"/>	<input checked="" type="radio"/> Yes <input type="radio"/> No
Panel #3	<input type="text" value="December 20, 2012"/>	<input type="text" value="December 21, 2012"/>	<input type="radio"/> Yes <input checked="" type="radio"/> No



4. Once done, the following screen will appear

Thank you for participating!



We have received your invitation response. Thank you for deciding to be part of one of NSF's review panels. We will process your information and contact you again with instructions.

You may close your browser window.

[NSF Division of Engineering Education and Centers](#)

5. You have the option of saving your information in the InfoPath form, but this DOES NOT submit your information. You will see the following screen if you save your InfoPath work.

Your changes were saved successfully



IMPORTANT NOTICE:

Saving changes does not complete your task! You will get e-mail reminders for this time sensitive task until you have completed it by clicking "Submit".

You may close your browser window.

[NSF Division of Engineering Education and Centers](#)



6. If you should go back onto the site the following screen will appear. This is normal due to your personal information being processed. You must receive an email to begin the next step on SharePoint.

**Access denied:
Your form is being processed**



You will be notified by e-mail when further action is needed.

You may close your browser window.


[NSF Division of Engineering Education and Centers](#)

CONFLICT OF INTERESTS

1. After you completed the availability form and the Program Director assigns you to review proposals, you will receive an email with your panel assignments. Once you have been assigned to a panel please read the panel summaries for the proposals in your panel. To access the proposals from the home page follow the series of picture shown below on the home page:
 - a. Click on proposals button associated with the panel that you are serving on



Directorate for Engineering > EEC Panels Welcome Evan Zivavras | Change Password



NSF External Collaboration Portal

EEC Panels This Site: EEC Panels | Site Actions

Panel Set Up

- Panel Dates
- NSF Administrators' Contact Information
- Program Director's Documents

Panelists

- Personal Information

Proposals

- My Assignments
- Panel 2 Proposals

Panel Discussions

- Panel 2 Summaries

Panelist Survey

Recycle Bin

Proposals

Panel Site Homepage
Panelist review the proposals and write their summary

Useful Tips

- If you need t
- If you need t

Instructions

- Login to FastLane and put in your information where needed
- Complete your personal form and submit it
- Once your panel number(s) and proposals are assigned to you, confirm your assignments in the InfoPath form
- Download the proposals assigned to you from eJacket
- Submit your reviews two weeks after you receive your assignments

Contact Information

If you are having any trouble adding another conflict contact the Department Program Director.

If you are having any trouble with the panel information or traveling contact the Department Program Assistant.


Having Computer Problems?

Contact the NSF IT helpdesk

Email: IThelpcentral@nsf.gov

Phone Number: 703-292-4357 OR 1-800-711-8084

NSF Administrators



Announcements

There are currently no active announcements. To add a new announcement, click "Add new announcement" below.

Tasks

Edit	Title	Status	Due Date
There are no items to show in this view of the "Tasks" list. To create a new item, click "New" above.			

Links

- FastLane
- eJacket
- Reset Password

b. Click on the Title of the proposal that you wish to view. In this example, we will click on the title that the red arrow is pointing to.

EEC Panels This Site: EEC Panels | Site Actions

EEC Panels > Panelists' Information > Panel 2 > Panel 2 Proposals

Panel 2 Proposals

Proposals											
Proposal Number	Panel Assignment	PI Last Name	PI First Name	Institution	Title	Program Announcement	Dir-Div-P	Org Code	Submit Date	Submit Time	Requested Amount
1875456	2	Acosta	Christian	Worcester Polytechnic Institute	Transit System Analysis and Optimization in Montgomery County	PD 10-1240	1340	7050000	9/16/2011	14:22:11	\$22,250.00
1187934	2	Davila	Ignacio	Worcester Polytechnic Institute	Improving Workflow at the National Science Foundation	PD 10-1340	1340	7050000	9/16/2011	13:10:12	\$30,000.00
1578954	2	Desmond	Ross	Worcester Polytechnic Institute	Marketing Worcester Polytechnic Institute at Delphos International	PD 10-1340	1340	7050000	9/16/2011	06:24:11	\$42,000.00

c. Click on the attached document to view the proposal summary to see if you have a conflict with it.



EEC Panels > Proposals > Marketing Worcester Polytechnic Institute at Delphos International
Proposals: Marketing Worcester Polytechnic Institute at Delphos International

Close


New Item | Edit Item | Delete Item | Manage Permissions | Workflows | Alert Me

Proposal Number	1578954
PI Last Name	Desmond
PI First Name	Ross
Institution	Worcester Polytechnic Institute
Title	Marketing Worcester Polytechnic Institute at Delphos International
Program Announcement	PD 10-1340
Dir-Div-P	1340
Org Code	7050000
Submit Date	9/16/2011
Submit Time	06:24:11
Requested Amount	\$42,000.00
Target Audiences	No targeting
Panel Assignmnet	2
< \$50,000	Yes
Co-PI 1	
Co-PI 2	
Co-PI 3	
Co-PI 4	
Collaborative Role	Not
Collaboritive Lead	
Collaborative Secondary	
Initial Assignments Sent	No
Assignments Finalized	No
Attachments	PD Manual.docx

- You will then have to mark your conflicts for each proposal and whether you would prefer to review it or not. You will be sent a link to the following screen. When you are at the "Personal Information" screen, click on the InfoPath icon next to your information to complete the second InfoPath form. This is where you will point your conflicts and preferences regarding the proposals. If you lose the link that will take you to your "Personal Information" you can easily get back to this page by clicking "Personal Information" under the "Panelists" tab on the left side of the homepage.

EEC Panels This Site: EEC Panels Site Actions

EEC Panels > Panelists' Information > Personal Information

 **Personal Information**

My Information

Type	Conflicts	E-Mail	Expertise	Panel 1	Panel 2	Panel 3	Panel Assignment	Prefer to Not Review	Prefer to Review	University
To create a new item, click "Add new document" below. There are no items to show in this view of the "EEC Panels Forms" document library.										
<input type="checkbox"/> Add new document										



3. Complete the following InfoPath form. If you click the “Yes” button to answer the conflict of interest question, the Reviewing preference will be grayed out.

National Science Foundation
Review Panel Invitation Form

Review Conflicts of Interest

Please review each proposal's information and verify that you do not have any potential conflicts of interest (COI's). If so, please check the COI checkbox for that proposal. Optionally, you may check proposals you would like to/rather not review. Your choice will be considered, although checking a preference is no guarantee of assignment.

Proposal Number: 1160436

Proposal Title
A Phenomenographic Study of Static versus Dynamic Graphical Representations in the Semiconductor Domain

Institution
Purdue University

Principal Investigator Name(s)
Alejandra Magana-de-Leon

Conflict of Interest?* Reviewing preference
 Yes No I'd like to No preference I'd rather not

Previous Next

1 out of 5

Save and Close

4. If you click the “No” button to answer the conflict of interest question, the Reviewing preference will be available for you to choose if you would like to review the proposal, have no preference, or if you do not want to review the proposal.

National Science Foundation
Review Panel Invitation Form

Review Conflicts of Interest

Please review each proposal's information and verify that you do not have any potential conflicts of interest (COI's). If so, please check the COI checkbox for that proposal. Optionally, you may check proposals you would like to/rather not review. Your choice will be considered, although checking a preference is no guarantee of assignment.

Proposal Number: 1160436

Proposal Title
A Phenomenographic Study of Static versus Dynamic Graphical Representations in the Semiconductor Domain

Institution
Purdue University

Principal Investigator Name(s)
Alejandra Magana-de-Leon

Conflict of Interest?* Reviewing preference
 Yes No I'd like to No preference I'd rather not

Previous Next

1 out of 5

Save and Close



5. You must fill in all the conflicts for the proposals in this form in order to complete it.
6. After you have completed the conflict of interest form, you will go to the follow screen.

**Thank you for indicating your
conflicts of interest**



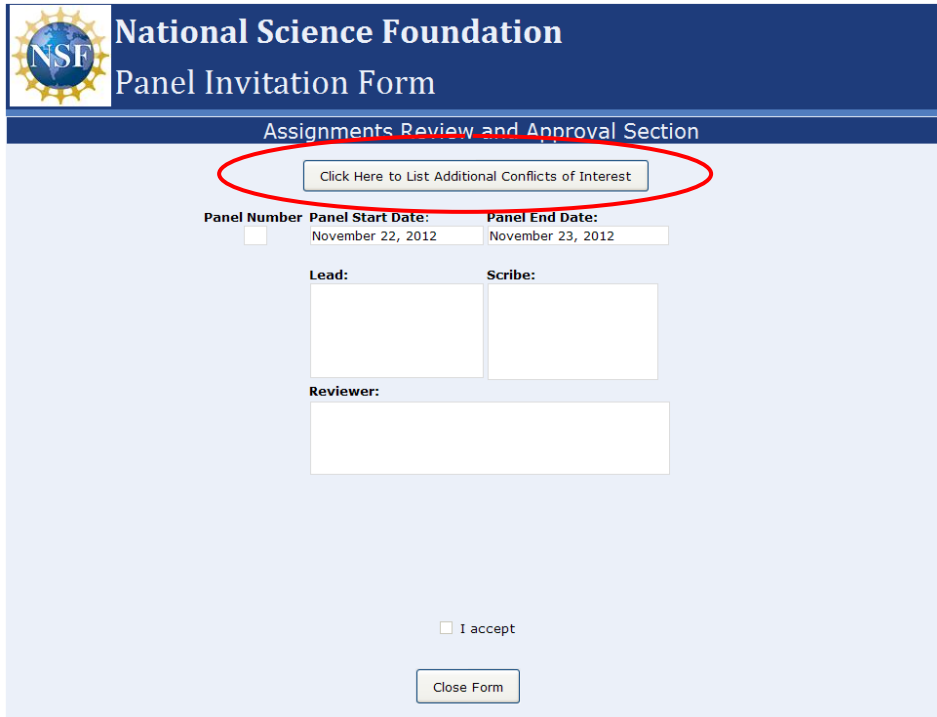
We take conflicts of interest very seriously at NSF. We will work on assigning proposals to reviewers and will consider preferences indicated. However, be aware that marking a preference does not guarantee it will be granted.

You may close your browser.

[NSF Division of Engineering Education and Centers](#)

7. After submitting the form you must wait for the Program Director to assign you to review proposals. After the Program Director of the panel has assigned you to be a lead, scribe, or reviewer a proposal, you will be asked to confirm your assignments. You will receive an email with a link that will take you to the following screen. If you agree with what was assigned to you, you will need to click the check box next to the "I Accept" to continue. If you need to add anymore conflicts, click the button that says "Click Here to List Additional Conflicts of Interest" which is circled in red.





The image shows a screenshot of the National Science Foundation Panel Invitation Form. At the top left is the NSF logo. The header contains the text "National Science Foundation" and "Panel Invitation Form". Below this is a sub-header "Assignments Review and Approval Section". A button labeled "Click Here to List Additional Conflicts of Interest" is circled in red. The form includes fields for "Panel Number", "Panel Start Date" (November 22, 2012), and "Panel End Date" (November 23, 2012). There are also sections for "Lead:", "Scribe:", and "Reviewer:" with corresponding text input boxes. At the bottom, there is a checkbox labeled "I accept" and a "Close Form" button.

You can also view your assignments in a more convenient fashion by following the following link:

<https://extsharepoint.nsf.gov/eng/eec/panels/Panelists%20Information/My%20Assignments.aspx>

This will take you to a screen similar to the one below where you can view your assignments in a more convenient fashion:



This form can also be access through the homepage of the site:

EEC Panels This Site: EEC Panels Site Actions

Proposals Panelist review the proposals and write their summary

My Assignments

Panel 1 Proposals

Instructions

1. Login to FastLane and put in your information where needed
2. Complete your personal form and submit it
3. Once your panel number(s) and proposals are assigned to you, confirm your assignments in the InfoPath form
4. Download the proposals assigned to you from eJacket
5. Submit your reviews two weeks after you receive your assignments

Contact Information

If you are having any trouble adding another conflict contact the Department Program Director.

If you are having any trouble with the panel information or traveling contact the Department Program Assistant.

Having Computer Problems?

Contact the NSF IT helpdesk

Email: IThelpcentral@nsf.gov

Phone Number: 703-292-4357 OR 1-800-711-8084

NSF Administrators

Name	Position	Business Phone	E-mail Address
Evan Zivras	Program Director	(703) 292-7107	ezivras@nsf.gov
Wilmann Gomez	Program Assistant	(703) 292-8793	wgomez@nsf.gov

Panel Dates

Date	Panel	Status
11/22/2012 8:00 AM	Panel 1	NEW
12/9/2012 10:00 AM	Panel 2	NEW
12/20/2012 10:00 AM	Panel 3	NEW

Announcements

There are currently no active announcements. To add a new announcement, click "Add new announcement" below.

Tasks

There are no items to show in this view of the "Tasks" list. To create a new item, click "New" above.

Links

- FastLane
- eJacket
- Reset Password



PANEL SUMMARIES

1. After the proposals have been reviewed in the review panel, the scribe of the proposal will submit a proposal summary by clicking on the “Panel Summaries” discussion board. The board will be populated with all the proposals reviewed in the panel:



The screenshot displays the 'EEC Panels' website interface. At the top, there is a search bar with the text 'This List: Panel 1 Summaries' and a search icon. Below the search bar, the page title is 'Panel 1 Summaries'. The left sidebar contains a navigation menu with the following sections: 'Panel Set Up' (with sub-items: Panel Dates, Program Director's Documents), 'Panelists' (with sub-item: Personal Information), 'Proposals' (with sub-items: My Assignments, Panel 1 Proposals), 'Panel Discussions' (with sub-item: Panel 1 Summaries), 'Panelist Survey', 'People and Groups', and 'Recycle Bin'. The main content area shows a table with columns for 'Edit', 'Subject', 'Replies', 'Lead', 'Scribe', and 'Conflicts'. The table contains two rows: 'Proposal # 125564' with 0 replies, and 'Proposal 2' with 3 replies. The 'View:' dropdown is set to 'Subject'.

Edit	Subject	Replies	Lead	Scribe	Conflicts
	Proposal # 125564	0	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Proposal 2	3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Once you are in the discussion board, find the proposal that you were assigned to be the scribe for. You are able to upload proposal summaries and panelists are able to comment on them. To attach your summary to the appropriate topic, go enter the topic and attach a file as shown below:



EEC Panels

This List: Panel 1 Summaries

EEC Panels

Site Actions

EEC Panels > Panel 1 Summaries

Panel 1 Summaries

View All Site Content

Panel Set Up

- Panel Dates
- Program Director's Documents

Panelists

- Personal Information

Proposals

- My Assignments
- Panel 1 Proposals

Panel Discussions

- Panel 1 Summaries

Panelist Survey

People and Groups

Recycle Bin

New	Actions	Settings	View: Subject
Edit	Subject	Replies	Lead Scribe Conflicts
	Proposal # 12556	0	
	Proposal 2	3	

EEC Panels > Panel 1 Summaries > Proposal Summary

Panel 1 Summaries

New Actions Settings View: Threaded

Threading

Discussion Subject Title

Edited: 12/1/2011 9:37 AM by Evan Zivras

View Properties Reply

Proposal # 125564

Proposal # 125564

Proposal Summary

Close

Open | Reply | Edit Item | Delete Item | Manage Permissions | Alert Me

Subject	Proposal 658478
Body	
Conflicts	
Lead	
Scribe	

Content Type: Discussion
Created at 12/9/2011 11:58 AM by Evan Zivras
Last modified at 12/9/2011 11:58 AM by Evan Zivras

Close



EEC Panels > Panel 1 Summaries > Proposal 658478 > Edit Item

Panel 1 Summaries: Proposal 658478

OK Cancel

Attach File Delete Item Spelling... * indicates a required field

Subject * Proposal 658478

Body

Conflicts

Enter users separated with semicolons.

Lead

Scribe

Enter users separated with semicolons.

Created at 12/9/2011 11:58 AM by Evan Zivavras
Last modified at 12/9/2011 11:58 AM by Evan Zivavras

OK Cancel

3. If you would like to comment on a proposal that you were not assigned to go into the topic, click “Reply”, and type a comment.

EEC Panels > Panel 1 Summaries > Proposal Summary

Panel 1 Summaries

New Actions Settings View: **Threaded**

Threading Discussion Subject Title

Edited: 12/1/2011 9:37 AM by Evan Zivavras View Properties **Reply**

Proposal #	Proposal #	Proposal Summary
125564	125564	Proposal Summary



Panel 1 Summaries: New Item

OK Cancel

Attach File Spelling...

Body

Rich text editor toolbar with icons for bold, italic, underline, text color, background color, bulleted list, numbered list, link, unlink, and others.

From: Evan Ziaavras
Posted: Thursday, December 01, 2011 9:37 AM
Subject: Proposal # 125564

Conflicts

Enter users separated with semicolons. [OK] [Cancel]

Lead

Scribe

Enter users separated with semicolons. [OK] [Cancel]

OK Cancel



B. PROGRAM ASSISTANT USER MANUAL

The Program Assistant is needed to create the panel dates of the different panels. Once that is complete, the PA needs to reserve the room for the panel on the date that is scheduled. The Program Assistant must also verify that the panelist is in FastLane and has access to SharePoint in order to send an invitation to serve on a panel. The PA also needs to put panelists in different SharePoint groups based on which panel they will be serving on.

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Emailing the EEC Pre-Selection Panelist:	95
Adding Panelist to Groups.....	96
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Panel Summaries.....	101



PANEL DATES

1. Each panel is held on different dates and it is the Program Assistant's job to set the date on SharePoint. In order to set the date of a new panel, click "Panel Dates".

Panel Set Up

- Panel Dates
- Panelist Invitees
- NSF Administrators' Contact Information
- Program Director's Documents

NSF Administrators

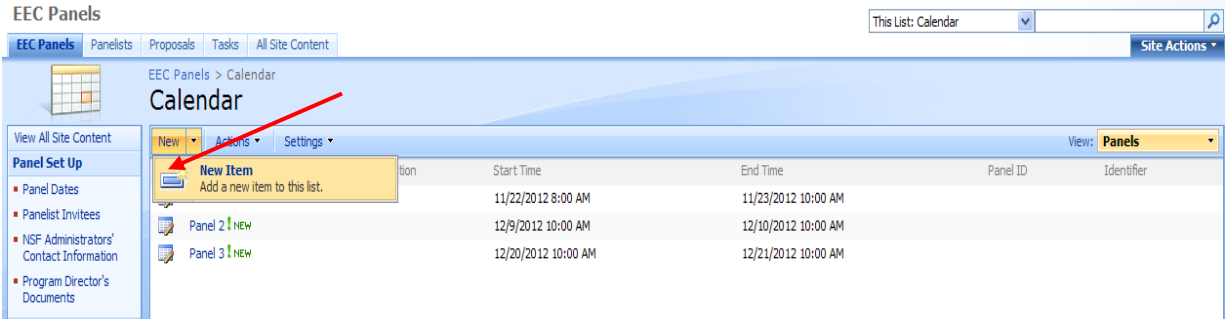
Name	Position	Business Phone	E-mail Address
Evan Zavras	Program Director	(703) 292-7107	ezavras@nsf.gov
Wilmann Gomez	Program Assistant	(703) 292-8793	wgomez@nsf.gov

Panel Dates

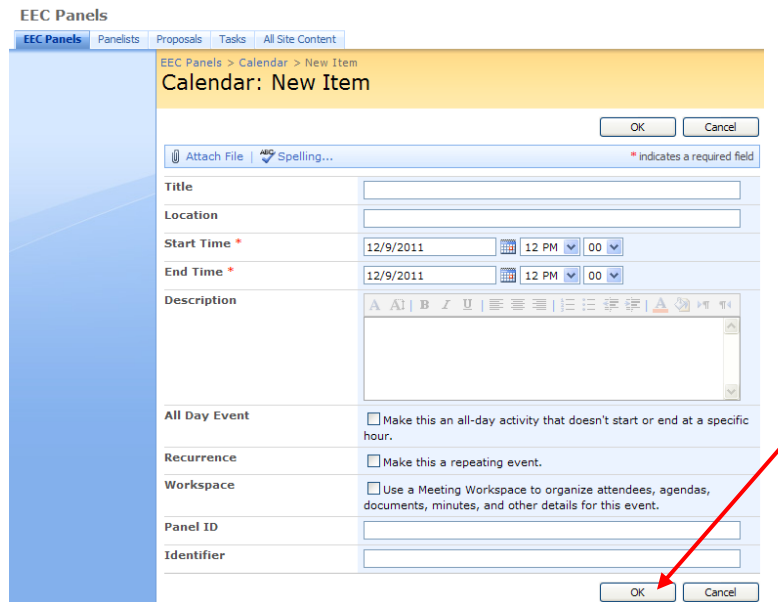
Date	Panel
11/22/2012 8:00 AM	Panel 1 NEW
12/9/2012 10:00 AM	Panel 2 NEW
12/20/2012 10:00 AM	Panel 3 NEW

2. Then click the "New" button to create a new panel date.





3. Afterwards, simply complete all the required information regarding the new panel. When done, click “Ok”.



4. In order to edit the panel, click the dropdown arrow, and “Edit Item”. This will be done to set the location that the panel will be taking place in.



EEC Panels

EEC Panels > Calendar

Calendar

Panel Set Up

- Panel Dates
- Panelist Invitees
- NSF Administrators' Contact Information
- Program Director's Documents

Panelists

- Panelists' Information
- Panelists Sorted by Panels

Edit	Title	Location	Start Time	End Time
Panel 1	NEW		11/22/2012 8:00 AM	11/23/2012 10:00 AM
Panel			12/9/2012 10:00 AM	12/10/2012 10:00 AM
Panel			12/20/2012 10:00 AM	12/21/2012 10:00 AM

View Item
Edit Item
Manage Permissions
Delete Item
Workflows
Alert Me

TASKS

- Once you have created a panel in "Panel Dates", a task will be assigned to you to reserve a room for that panel. This task is set to send an email reminder if it is not completed within six months and two weeks of the panel start date. To mark the task as complete once you have reserved a room, click on the "Tasks" tab to look at the tasks assigned to you.

EEC Panels

EEC Panels > Calendar

Calendar

Panel Set Up

- Panel Dates
- Panelist Invitees
- NSF Administrators' Contact Information
- Program Director's Documents

Panelists

- Panelists' Information
- Panelists Sorted by Panels
- Panelists' Status

Conflicts and Preferences

Edit	Title	Location	Start Time	End Time	Panel ID	Identifier
Panel 1	NEW		11/22/2012 8:00 AM	11/23/2012 10:00 AM		
Panel 2	NEW		12/9/2012 10:00 AM	12/10/2012 10:00 AM		
Panel 3	NEW		12/20/2012 10:00 AM	12/21/2012 10:00 AM		



2. You will go onto a screen similar to the one below. Click on your task to edit it.

The screenshot shows the 'EEC Panels' interface with a 'Tasks' tab selected. A table lists several tasks. The first task, 'Reserve Room', is circled in red. The table has columns for Title, Assigned To, Status, Due Date, Modified, Check Mark Availability, and Book Room Reminder (1).

Title	Assigned To	Status	Due Date	Modified	Check Mark Availability	Book Room Reminder (1)
Reserve Room NEW	EEC Panels Program Assistant	Not Started	5/9/2012	12/9/2011 9:41 AM		In Progress
Reserve Room NEW	EEC Panels Program Assistant	Not Started	5/26/2012	12/9/2011 9:42 AM		In Progress
Reserve Room NEW	EEC Panels Program Assistant	Not Started	6/6/2012	12/9/2011 9:43 AM		In Progress
Mark Availability NEW	Susan Kemnitzer	In Progress	12/16/2011	12/9/2011 10:08 AM		Completed
Mark Availability NEW	Victoria Kwasiborski	In Progress	12/16/2011	12/9/2011 10:08 AM		Completed
Mark Availability NEW	Carole Read	In Progress	12/16/2011	12/9/2011 10:08 AM		Completed
Mark Availability NEW	Rebecca Bates	In Progress	12/16/2011	12/9/2011 10:08 AM		Completed
Mark Availability NEW	Gwendolyn J. Hardenbergh	In Progress	12/16/2011	12/9/2011 10:08 AM		Completed

3. Click on "Edit Item" to change the status of your task.

The screenshot shows the 'Tasks: Reserve Room' edit page. A toolbar at the top contains buttons for 'New Item', 'Edit Item', 'Delete Item', 'Claim Task', 'Manage Permissions', 'Workflows', 'Alert Me', and 'Version History'. A red arrow points to the 'Edit Item' button. Below the toolbar is a form with the following fields:

Title	Reserve Room
Priority	(2) Normal
Status	Not Started
% Complete	
Assigned To	EEC Panels Program Assistant
Description	
Start Date	12/9/2011
Due Date	5/9/2012

At the bottom, it shows 'Version: 1.0', 'Created at 12/9/2011 9:41 AM by Evan Zivras', and 'Last modified at 12/9/2011 9:41 AM by Evan Zivras'. There are 'Close' buttons at the top right and bottom right of the form area.



- By clicking the down drop around next to the status field, you are able to change the status of your task. For this example, we will say the task is complete.

EEC Panels This Site: EEC Panels

EEC Panels | Panelists | Proposals | Tasks | All Site Content Site Actions

EEC Panels > Tasks > Reserve Room > Edit Item

Tasks: Reserve Room

OK Cancel

Attach File | Delete Item | Claim Task | Spelling... * Indicates a required field

Title *

Priority

Status

- Not Started
- In Progress
- Completed**
- Deferred
- Waiting on some(status)

% Complete

Assigned To

Description

A A B U

Start Date

Due Date

Version: 1.0
 Created at 12/9/2011 9:41 AM by Evan Zivras
 Last modified at 12/9/2011 9:41 AM by Evan Zivras

OK Cancel

- Your task will show as complete on your task page.

EEC Panels This List: Tasks

EEC Panels | Panelists | Proposals | Tasks | All Site Content Site Actions

EEC Panels > Tasks

Tasks

New Actions Settings View: All Tasks

Title	Assigned To	Status	Due Date	Modified	Check Mark Availability	Book Room Reminder (1)
Reserve Room	EEC Panels Program Assistant	Completed	5/9/2012	12/12/2011 10:00 AM		In Progress
Reserve Room	EEC Panels Program Assistant	Not Started	5/26/2012	12/9/2011 9:42 AM		In Progress
Reserve Room	EEC Panels Program Assistant	Not Started	6/6/2012	12/9/2011 9:43 AM		In Progress
Mark Availability	Susan Kemnitz	In Progress	12/16/2011	12/9/2011 10:08 AM		Completed
Mark Availability	Victoria Kwasiborski	In Progress	12/16/2011	12/9/2011 10:08 AM		Completed
Mark Availability	Carole Read	In Progress	12/16/2011	12/9/2011 10:08 AM		Completed
Mark Availability	Rebecca Bates	In Progress	12/16/2011	12/9/2011 10:08 AM		Completed
Mark Availability	Gwendolyn J. Hardenbergh	In Progress	12/16/2011	12/9/2011 10:08 AM		Completed



ADDING PANELISTS TO EEC PRE-SELECTION PANELISTS

1. Once the list of potential panelists has been determined by the PD, you will need to add the panelists to the EEC Pre-Selection Panelists group. The PD will send DIS the potential panelist names to allow the individuals access to the SharePoint site. Once the panelists have been granted access, the PA will add the panelist by going to the “People and Groups” tab. The PA can add a panelist if they are inside or outside of the NSF system.

Panelist Survey

Name	Phone	E-mail Address
Evan Zavras	292-7107	ezavras@nsf.gov
Wilmann Gomez	292-8793	wgomez@nsf.gov

Panel Dates

Date	Location
12/9/2012 10:00 AM	Panel 2 NEW
12/20/2012 10:00 AM	Panel 3 NEW



2. Then go to the EEC Pre-Selection Panelist to view a screen similar to the one below.

The screenshot shows the 'EEC Panels' interface. The left sidebar contains a 'Groups' list with 'EEC Panels Pre-Selection Panelists' selected. The main content area displays a table of users:

Picture	Name	About me	Title	Department
<input type="checkbox"/>	Carole Read			
<input type="checkbox"/>	Evan Zlavras			
<input type="checkbox"/>	Rebecca Bates			
<input type="checkbox"/>	Susan Kemnitzner			
<input type="checkbox"/>	Test Account4			
<input type="checkbox"/>	Victoria Kwasiborski			
<input type="checkbox"/>	Wilmann Gomez			


3. To add a panelist to this group, click the “New” tab and then “Add Users”


This screenshot is identical to the previous one, but with the 'New' dropdown menu open. The menu options are:

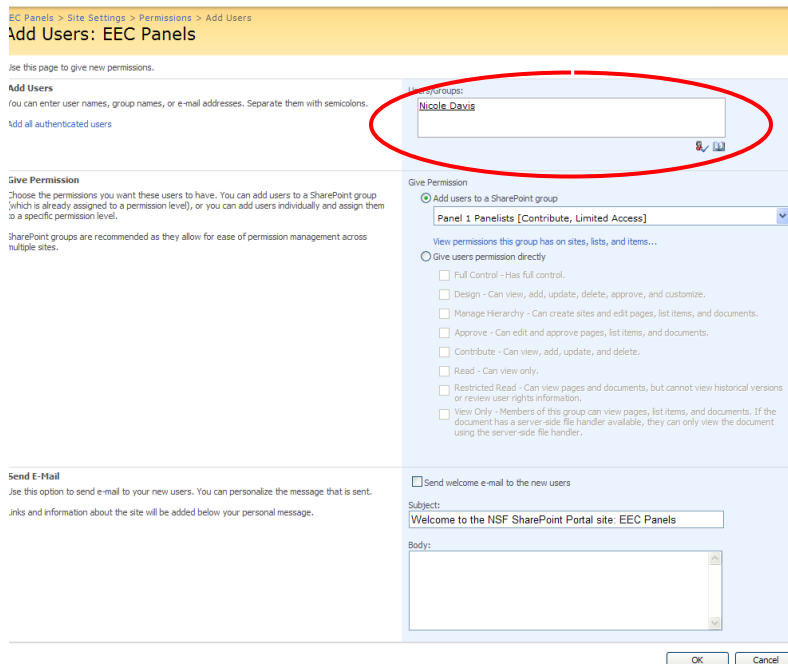
- Add Users**: Add users to a group or site.
- New Group**: Create a new SharePoint group.



4. You can either add a user by putting his/her name in the white box circled in red

and click the check name icon , or you can look through the address book by

clicking this icon. . If their name is underlined after you checked their name, it shows that they have SharePoint access. You can add multiple users at a time from this screen.



EC Panels > Site Settings > Permissions > Add Users

Add Users: EEC Panels

Use this page to give new permissions.

Add Users
You can enter user names, group names, or e-mail addresses. Separate them with semicolons.
[Add all authenticated users](#)

Give Permission
Choose the permissions you want these users to have. You can add users to a SharePoint group (which is already assigned to a permission level), or you can add users individually and assign them to a specific permission level.
SharePoint groups are recommended as they allow for ease of permission management across multiple sites.

Send E-Mail
Use this option to send e-mail to your new users. You can personalize the message that is sent. Links and information about the site will be added below your personal message.

User or groups:
Nicole Davis

Give Permission
 Add users to a SharePoint group
 Give users permission directly

Panel 1 Panelists [Contribute, Limited Access]

View permissions this group has on sites, lists, and items...

Full Control - Has full control.

Design - Can view, add, update, delete, approve, and customize.

Manage Hierarchy - Can create sites and edit pages, list items, and documents.

Approve - Can edit and approve pages, list items, and documents.

Contribute - Can view, add, update, and delete.

Read - Can view only.

Restricted Read - Can view pages and documents, but cannot view historical versions or review user rights information.

View Only - Members of this group can view pages, list items, and documents. If the document has a server-side file handler available, they can only view the document using the server-side file handler.

Send welcome e-mail to the new users

Subject:
Welcome to the NSF SharePoint Portal site: EEC Panels

Body:

OK Cancel



5. Click the “OK” button at the bottom of the page when you are done.

EEC Panels

EEC Panels > Site Settings > Permissions > Add Users

Add Users: EEC Panels

Use this page to give new permissions.

Add Users
You can enter user names, group names, or e-mail addresses. Separate them with semicolons.
Add all authenticated users

Give Permission
Choose the permissions you want these users to have. You can add users to a SharePoint group (which is already assigned to a permission level), or you can add users individually and assign them to a specific permission level.
SharePoint groups are recommended as they allow for ease of permission management across multiple sites.

Send E-Mail
Use this option to send e-mail to your new users. You can personalize the message that is sent. Links and information about the site will be added below your personal message.

Users/Groups:
Evan Ziavras

Give Permission

Add users to a SharePoint group
EEC Panels Pre-Selection Panelists [Read, Limited Access]

Give users permission directly

- Full Control - Has full control.
- Design - Can view, add, update, delete, approve, and customize.
- Manage Hierarchy - Can create sites and edit pages, list items, and documents.
- Approve - Can edit and approve pages, list items, and documents.
- Contribute - Can view, add, update, and delete.
- Read - Can view only.
- Restricted Read - Can view pages and documents, but cannot view historical versions or review user rights information.
- View Only - Members of this group can view pages, list items, and documents. If the document has a server-side file handler available, they can only view the document using the server-side file handler.

Send welcome e-mail to the new users

Subject:
Welcome to the NSF SharePoint Portal site: EEC Panels

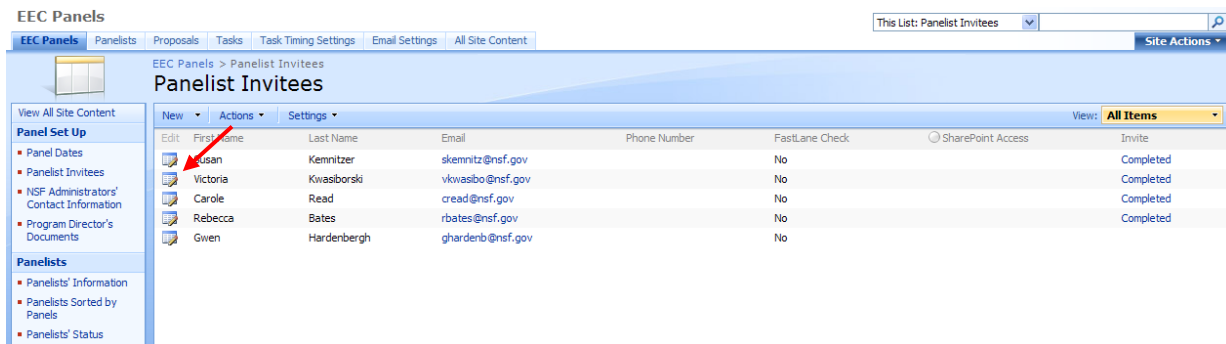
Body:

OK Cancel



PANELIST INVITEES

1. Once DIS has created external SharePoint accounts for the people that will be invited to serve on panels, go to the “Panelist Invitees” list and make sure all the contact information of the prospective panelists is the same as the one that appears in FastLane. If it is not the same you must find out the correct information and change the information in the Panelist Invitees list.



EEC Panels

Panelists Proposals Tasks Task Timing Settings Email Settings All Site Content

This List: Panelist Invitees

EEC Panels > Panelist Invitees

Panelist Invitees






View All Site Content

Panel Set Up

- Panel Dates
- Panelist Invitees
- NSF Administrators' Contact Information
- Program Director's Documents

Panelists

- Panelists' Information
- Panelists Sorted by Panels
- Panelists' Status

Edit	First Name	Last Name	Email	Phone Number	FastLane Check	SharePoint Access	Invite
	Juan	Kemnitz	skemnitz@nsf.gov		No	<input type="checkbox"/>	Completed
	Victoria	Kwasiborski	vkwasibo@nsf.gov		No	<input type="checkbox"/>	Completed
	Carole	Read	cread@nsf.gov		No	<input type="checkbox"/>	Completed
	Rebecca	Bates	rbates@nsf.gov		No	<input type="checkbox"/>	Completed
	Gwen	Hardenbergh	ghardenb@nsf.gov		No	<input type="checkbox"/>	



- Once it has been confirmed that the panelist's information in FastLane matches their information on the list, click the "Actions" button and then "Edit in Datasheet."

The screenshot shows the 'Panelist Invitees' list in the EEC Panels system. The 'Actions' menu is open, and the 'Edit in Datasheet' option is highlighted with a red arrow. The list contains several panelist entries with columns for 'Phone Number', 'FastLane Check', 'SharePoint Access', and 'Invite'.

Phone Number	FastLane Check	SharePoint Access	Invite
	Yes	Susan Kennitzer	Completed
	Yes	Victoria Kwasiborski	Completed
	Yes	Carole Read	Completed
	Yes	Rebecca Bates	Completed
	Yes	Gwendolyn J. Hardenbergh	Completed

- Then click the check box in the "FastLane Check" column.

The screenshot shows the 'Panelist Invitees' list with the 'FastLane Check' column checked for the 'Test' entry. The list includes columns for 'First Name', 'Last Name', 'Email', 'Phone Number', 'FastLane Check', 'SharePoint Access', 'Username', and 'Password'.

First Name	Last Name	Email	Phone Number	FastLane Check	SharePoint Access	Username	Password
Susan	Kennitzer	skennitz@nsf.gov		<input checked="" type="checkbox"/>	<input type="radio"/>	Susan Kennitzer	
Victoria	Kwasiborski	vkwasibo@nsf.gov		<input checked="" type="checkbox"/>	<input type="radio"/>	Victoria Kwasiborski	
Carole	Read	cread@nsf.gov		<input checked="" type="checkbox"/>	<input type="radio"/>	Carole Read	
Rebecca	Bates	rbates@nsf.gov		<input checked="" type="checkbox"/>	<input type="radio"/>	Rebecca Bates	
Gwen	Hardenbergh	ghardenb@nsf.gov		<input checked="" type="checkbox"/>	<input type="radio"/>	Gwendolyn J. Hardenbergh	
Evan	Ziavras	eziavras@nsf.gov		<input checked="" type="checkbox"/>	<input type="radio"/>	Evan Ziavras	
Test	4			<input type="checkbox"/>	<input type="radio"/>	Test Account4	



- Once you have been notified by the Program Director that panelists' external SharePoint accounts have been created, type the panelist's name in the SharePoint Access column. If their account exists, their names should automatically fill in the space as you type and a small circle will appear to the left of their name. This will automatically email the panelist the InfoPath form to fill out their availability.

EEC Panels This List: Panelist Invitees

EEC Panels | Panelists | Proposals | Tasks | All Site Content Site Actions

EEC Panels > Panelist Invitees

Panelist Invitees

New | Actions | Settings View: All Items

First Name	Last Name	Email	Phone Number	FastLane Check	SharePoint Access	Invite
Susan	Kennitzer	skennitz@nsf.gov		<input checked="" type="checkbox"/>	<input type="radio"/> Susan Kennitzer	5
Victoria	Kwasiborski	vkwasibo@nsf.gov		<input checked="" type="checkbox"/>	<input type="radio"/> Victoria Kwasiborski	5
Carole	Read	cread@nsf.gov		<input checked="" type="checkbox"/>	<input type="radio"/> Carole Read	5
Rebecca	Bates	rbates@nsf.gov		<input checked="" type="checkbox"/>	<input type="radio"/> Rebecca Bates	5
Gwen	Hardenbergh	ghardenb@nsf.gov		<input checked="" type="checkbox"/>	<input type="radio"/> Gwendolyn J. Hardenbergh	5
<input checked="" type="checkbox"/>	Nicole	Davis		<input type="checkbox"/>	<input type="radio"/> Nicole Davis	

Note: The 'SharePoint Access' dropdown for Nicole Davis is circled in red in the original image.



ATTACHING PROPOSAL SUMMARY

1. After you retrieve a proposal's summary from eJacket, you must attach it to the corresponding item in the Proposals list. To do this, click the "Proposals" tab (1) at the top then click the desired proposal that you wish to attach the summary to (2).

The screenshot shows the 'EEC Panels' interface. At the top, there are navigation tabs: 'EEC Panels', 'Panelists', 'Proposals', 'Tasks', and 'All Site Content'. A red arrow labeled '1' points to the 'Proposals' tab. Below the tabs, there is a search box and a 'Site Actions' button. The main content area is titled 'Proposals' and contains a table with columns: Proposal Number, Panel Assignment, PI Last Name, PI First Name, Institution, Title, Program Announcement, Dir-Div-P, Org Code, Submit Date, Submit Time, Requested Amount, and a status column. A white box labeled '2' is positioned over the 'Title' column of the first row, with a red arrow pointing to the text 'Advanced Patent Application Analysis'.

Proposal Number	Panel Assignment	PI Last Name	PI First Name	Institution	Title	Program Announcement	Dir-Div-P	Org Code	Submit Date	Submit Time	Requested Amount	Status
1245932	1	Amador	Francisco	Worcester Polytechnic Institute	Advanced Patent Application Analysis	PD 10-1340	1340	7050000	9/16/2011	14:28:42	\$22,300.00	Y
1875456	2	Acosta	Christian	Worcester Polytechnic Institute	Transit System Analysis and Optimization in Montgomery County	PD 10-1340	1340	7050000	9/16/2011	14:22:11	\$22,250.00	Y
1784632	3	Walker	Griffin	Worcester Polytechnic Institute	Marcellus Shale: Cementing and Well Casing Violations	PD 10-1340	1340	7050000	9/16/2011	12:30:57	\$20,000.00	Y
1645315	3	Brodeur	Patrick	Worcester Polytechnic Institute	Environmental Compliance: Developing a Database for Waste Oil Monitoring	PD 10-1340	1340	7050000	9/16/2011	11:12:25	\$22,000.00	Y
1154886	3	Freyermuth	Jeffrey	Worcester Polytechnic Institute	Cataloging Emergency Response Vessels	PD 10-1340	1340	7050000	9/16/2011	10:40:49	\$25,000.00	Y
1187934	2	Davila	Ignacio	Worcester Polytechnic Institute	Improving Workflow at the National Science Foundation	PD 10-1340	1340	7050000	9/16/2011	13:10:12	\$30,000.00	Y



2. Then click on "Edit Item."

EEC Panels This Site: EEC Panels

EEC Panels | Panelists | Proposals | Tasks | All Site Content

EEC Panels > Proposals > Advanced Patent Application Analysis

Proposals: Advanced Patent Application Analysis

[Close](#)

[New Item](#) | [Edit Item](#) | [Delete Item](#) | [Manage Permissions](#) | [Workflows](#) | [Alert Me](#)

Proposal Number	1245932
PI Last Name	Amador
PI First Name	Francisco
Institution	Worcester Polytechnic Institute
Title	Advanced Patent Application Analysis
Program Announcement	PD 10-1340
Dir-Div-P	1340
Org Code	7050000
Submit Date	9/16/2011
Submit Time	14:28:42
Requested Amount	\$22,300.00
Target Audiences	No targeting
Panel Assignmnet	1
< \$50,000	Yes
Co-PI 1	
Co-PI 2	
Co-PI 3	
Co-PI 4	
Collaborative Role	Secondary
Collaboritive Lead	1315498
Collaborative Secondary	
Initial Assignments Sent	Yes
Assignments Finalized	No



3. To attach a file, click the “Attach File” tab at the top.

EEC Panels

EEC Panels > Proposals > Advanced Patent Application Analysis > Edit Item

Proposals: Advanced Patent Application Analysis

Attach File | Delete Item | Spelling... * Indicates a required field

Proposal Number * 1245932

PI Last Name * Amador

PI First Name * Francisco

Institution * Worcester Polytechnic Institute

Title * Advanced Patent Application Analysis

Program Announcement * PD 10-1340

Dir-Div-P * 1340

Org Code * 7050000

Submit Date * 9/16/2011

Submit Time * 14:28:42

Requested Amount * 22,300

Target Audiences

Panel Assignmnet 1

Co-PI 1

Co-PI 2

Co-PI 3

Co-PI 4

Collaborative Role
 Lead
 Secondary
 Not

Collaborative Lead 1315498

Collaborative Secondary

Initial Assignments Sent

Assignments Finalized

Created at 12/6/2011 12:19 PM by Wilmann Gomez
Last modified at 12/13/2011 3:44 PM by Evan Zivavras

4. Add your document into the space and click “OK” when you are finished.

EEC Panels

EEC Panels > Proposals > Advanced Patent Application Analysis > Edit Item

Proposals: Advanced Patent Application Analysis

This Site: EEC Panels

Use this page to add attachments to an item.

Name Browse...

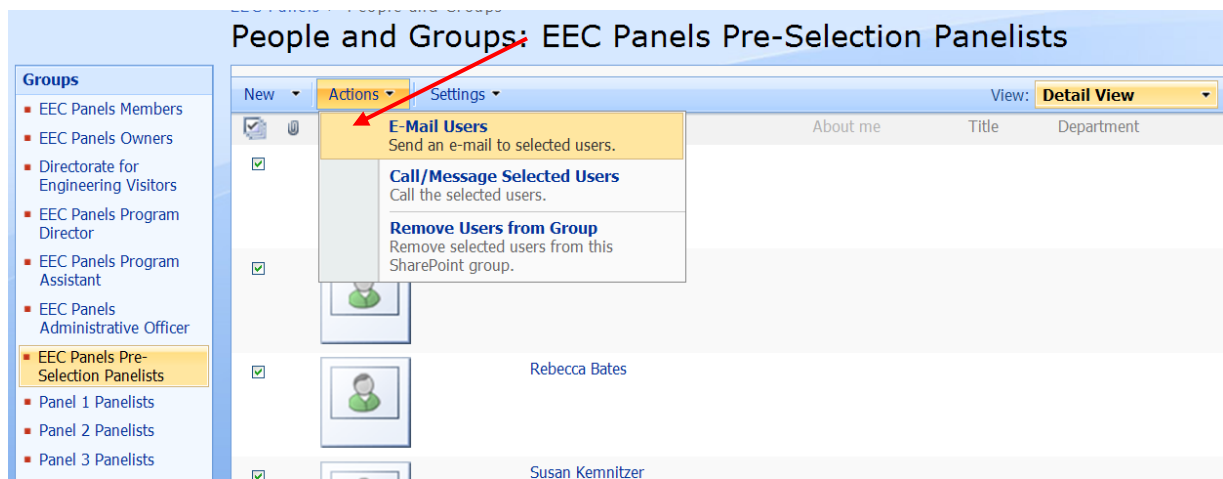
OK Cancel



EMAILING GROUPS

If you ever need to email an entire SharePoint group go to that group page and click the

“Select All” Button . Then click the Actions menu and “E-Mail Users” as shown below:



The screenshot shows the SharePoint interface for the group "EEC Panels Pre-Selection Panelists". On the left, a "Groups" list includes "EEC Panels Pre-Selection Panelists" which is highlighted. The main area shows a list of users with checkboxes for selection. The "Actions" menu is open, showing options: "E-Mail Users" (Send an e-mail to selected users.), "Call/Message Selected Users" (Call the selected users.), and "Remove Users from Group" (Remove selected users from this SharePoint group.). A red arrow points to the "E-Mail Users" option. The user list includes Rebecca Bates and Susan Kemnitzner.

	About me	Title	Department
<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>		Rebecca Bates	
<input checked="" type="checkbox"/>		Susan Kemnitzner	



ADDING REVIEWERS TO PANEL GROUPS

1. After the Program Director has emailed you with the assigned panelists to the panel, you will need to add the new panelists to the specific panel. The panelists in that group will only view specific information on the SharePoint site. Add them to either “Panel 1 Panelists,” “Panel 1 Panelists,” or “Panel 1 Panelists,” in the same manner used to add them to “EEC Panels Pre-Selection Panelists.”



ASSIGNMENTS: LEAD, SCRIBE, AND REVIEWERS

1. Once you have received the assignments from the Program Director, you will need to add the assignments on to SharePoint. To assign the Lead, Scribe, and Reviewers for each proposal, click the “Proposals” tab.

Directorate for Engineering > EEC Panels Welcome Ignacio Davila | Change Password

National Science Foundation
WHERE DISCOVERIES BEGIN

NSF External Collaboration Portal

EEC Panels This Site: EEC Panels

EEC Panels | Panelists | **Proposals** | Tasks | Task Timing Settings | Email Settings | All Site Content

Panel Set Up

- Panel Dates
- Panelist Invitees
- NSF Administrators' Contact Information
- Program Director's Documents

Panelists

- Panelists' Information
- Panelists Sorted by Panels
- Panelists' Status
- Personal Information

Conflicts and Preferences

- Conflicts of Interest
- Panelists' Preferences

Proposals

- Proposals Sorted by Panel
- Assignments
- My Assignments
- Panel 1 Proposals

Panel Discussions

- Panel 1 Summaries
- Panel 2 Summaries
- Panel 3 Summaries

Tasks

- All Tasks
- My Tasks

Panelist Survey

People and Groups

[Recycle Bin](#)

Welcome to the EEC Panel Site Homepage

This SharePoint site will be used to help the panelist review the proposals and write their summary

Useful Tips

- If you need to put in your information, please click the FastLane tab above.
- If you need to look at a proposal, please click the eJacket tab above.

Instructions

- Login to FastLane and put in your information where needed
- Complete your personal form and submit it
- Once your panel number(s) and proposals are assigned to you, confirm your assignments in the InfoPath form
- Download the proposals assigned to you from eJacket
- Submit your reviews two weeks after you receive your assignments

Contact Information

If you are having any trouble adding another conflict contact the Department Program Director.

If you are having any trouble with the panel information or traveling contact the Department Program Assistant.

Having Computer Problems?

Contact the NSF IT helpdesk

Email: IThelpcentral@nsf.gov

Phone Number: 703-292-4357 OR 1-800-711-8084

NSF Administrators

Name	Position	Business Phone	E-mail Address
Alan Cheville	Program Director	(703) 292-7107	
LaTanya Sanders-Peak	Program Assistant	(703) 292-8793	


Panel Dates

Name	Actions	Settings
------	---------	----------



- Then, click "Assignments" tab. This view will show all the different proposals that will be reviewed for all the panels.

Directorate for Engineering > EEC Panels Welcome Nicole Davis | Change Password |

 **National Science Foundation**
WHERE DISCOVERIES BEGIN

NSF External Collaboration Portal

EEC Panels This List: Proposals

EEC Panels | Panelists | Proposals | Tasks | All Site Content Site Actions

EEC Panels > Proposals

Proposals View: Proposal Information

New	Actions	Settings											View: Proposal Information
Proposal Number	Panel Assignment	PI Last Name	PI First Name	Institution	Title	Program Announcement	Dir-Div-P	Org Code	Submit Date	Submit Time			Proposal Information
1645315		Brodeur	Patrick	Worcester Polytechnic Institute	Environmental Compliance: Developing a Database for Waste Oil Monitoring	PD 10-1340	1340	7050000	9/16/2011	11:12:25			<ul style="list-style-type: none"> Proposal Information All Items Assignments Extract Info Panel 1 Panel 2 Panel 3 Modify this View Create View
1154886		Freyermuth	Jeffrey	Worcester Polytechnic Institute	Cataloging Emergency Response Vessels	PD 10-1340	1340	7050000	9/16/2011	10:40:49			
1187934		Davila	Ignacio	Worcester Polytechnic Institute	Improving Workflow at the National Science Foundation	PD 10-1340	1340	7050000	9/16/2011	13:10:12			
1156372		Ford	Gregory	Worcester Polytechnic Institute	Playground Equipment Classification and Burn Analysis	PD 10-1340	1340	7050000	9/16/2011	14:30:05		\$21,000.00	Yes
1315498		Gomez	Wilmann	Worcester Polytechnic Institute	Improving Workflow Efficiency at the National Science Foundation	PD 10-1340	1340	7050000	9/16/2011	14:18:16		\$22,000.00	Yes
1245932		Amador	Francisco	Worcester Polytechnic Institute	Advanced Patent Application Analysis	PD 10-1340	1340	7050000	9/16/2011	14:28:42		\$22,300.00	Yes
1875456		Acosta	Christian	Worcester Polytechnic Institute	Transit System Analysis and Optimization in Montgomery County	PD 10-1340	1340	7050000	9/16/2011	14:22:11		\$22,250.00	Yes
1784632		Walker	Griffin	Worcester Polytechnic Institute	Marcellus Shale: Cementing and Well Casing Violations	PD 10-1340	1340	7050000	9/16/2011	12:30:57		\$20,000.00	Yes

Panel Set Up

- Panel Dates
- Panelist Invitees
- NSF Administrators' Contact Information
- Program Director's Documents

Panelists

- Panelists' Information
- Panelists Sorted by Panels
- Panelists' Status

Conflicts and Preferences

- Conflicts of Interest
- Panelists' Preferences

Proposals

- Proposals Sorted by Panel
- Assignments

Panel Discussions

- Panel 1 Summaries
- Panel 2 Summaries
- Panel 3 Summaries

Tasks

- All Tasks
- My Tasks

Panelist Survey

People and Groups



3. Once you open this list, go to “Actions” and “Edit in Datasheet”.

DO NOT CHECK OFF ASSIGNMENTS FINALIZED UNTIL THEY HAVE CONFIRMED BY THE PROGRAM DIRECTOR. ONCE THIS BUTTON IS CHECKED ANY ASSIGNMENT CHANGES MADE WILL SEND EMAILS TO PANELISTS.

Actions

- Edit in Datasheet**
Bulk edit items using a datasheet format.
- Export to Spreadsheet**
Analyze items with a spreadsheet application.
- Open with Access**
Works with items in a Microsoft Office Access database.
- View RSS Feed**
Syndicate items with an RSS reader.
- Alert Me**
Receive e-mail notifications when items change.

Panel Assign	Lead	Scribe	Reviewer 1	Reviewer 2	Assignments Finalized
Efficiency at the National Science Foundation	Wilmann Gomez	Evan Zavras	Constance Brown	Wilmann Gomez	Yes
ication Analysis	Nicole Davis	Constance Brown	Ignacio Davila	Evan Zavras	Yes
s and Optimization in Montgomery County	Wilmann Gomez	Nicole Davis	Evan Zavras	Constance Brown	Yes
ting and Well Casing Violations	Ignacio Davila	Wilmann Gomez	Constance Brown	Evan Zavras	Yes
nce: Developing a Database for Waste Oil Monitoring	Ignacio Davila	Evan Zavras	Constance Brown	Nicole Davis	Yes
Response Vessels	Evan Zavras	Ignacio Davila	Evan Zavras	Nicole Davis	Yes
the National Science Foundation	Nicole Davis	Evan Zavras	Evan Zavras	Wilmann Gomez	Yes
Classification and Burn Analysis	Wilmann Gomez				

4. Edit the spreadsheet and assign Lead, Scribe, and Reviewers to the desired proposals.

DO NOT CHECK OFF ASSIGNMENTS FINALIZED UNTIL THEY HAVE CONFIRMED BY THE PROGRAM DIRECTOR. ONCE THIS BUTTON IS CHECKED ANY ASSIGNMENT CHANGES MADE WILL SEND EMAILS TO PANELISTS.

Proposal Number	Title	Lead	Scribe	Reviewer 1	Reviewer 2	Assignments Finalized
1315498	Improving Workflow Efficiency at the National Science Foundation	Wilmann Gomez	Evan Zavras	Constance Brown	Wilmann Gomez	<input checked="" type="checkbox"/>
1245932	Advanced Patent Application Analysis	Nicole Davis	Constance Brown	Ignacio Davila	Evan Zavras	<input checked="" type="checkbox"/>
1875456	Transit System Analysis and Optimization in Montgomery County	Wilmann Gomez	Nicole Davis	Evan Zavras	Constance Brown	<input checked="" type="checkbox"/>
1784632	Marcellus Shale: Cementing and Well Casing Violations	Ignacio Davila	Wilmann Gomez	Constance Brown	Evan Zavras	<input checked="" type="checkbox"/>
1645315	Environmental Compliance: Developing a Database for Waste Oil Monitoring	Ignacio Davila	Evan Zavras	Constance Brown	Nicole Davis	<input checked="" type="checkbox"/>
1154886	Cataloging Emergency Response Vessels	Evan Zavras	Ignacio Davila	Evan Zavras	Nicole Davis	<input checked="" type="checkbox"/>
1187934	Improving Workflow at the National Science Foundation	Nicole Davis	Evan Zavras	Evan Zavras	Wilmann Gomez	<input checked="" type="checkbox"/>
1156372	Playground Equipment Classification and Burn Analysis	Wilmann Gomez				<input type="checkbox"/>

5. Send an email manually to Program Director, to confirm that all the assignments have been properly assigned.



- After the Program Director confirms that the assignments have been properly set, click the “Assignments Finalized” box. Any changes made after checking this box will send out emails to all panelists affected by the change.

EEC Panels

EEC Panels > Proposals

Proposals

DO NOT CHECK OFF ASSIGNMENTS FINALIZED UNTIL THEY HAVE CONFIRMED BY THE PROGRAM DIRECTOR. ONCE THIS BUTTON IS CHECKED ANY ASSIGNMENT CHANGES MADE WILL SEND EMAILS TO PANELISTS.

View: Assignments

Proposal Number	Title	Lead	Scribe	Reviewer 1	Reviewer 2	Assignments Finalized
1315498	Improving Workflow Efficiency at the National Science Foundation	Wilmann Gomez	Evan Ziavras	Constance Brown	Wilmann Gomez	<input checked="" type="checkbox"/>
1245932	Advanced Patent Application Analysis	Nicole Davis	Constance Brown	Ignacio Davila	Evan Ziavras	<input checked="" type="checkbox"/>
1875456	Transit System Analysis and Optimization in Montgomery County	Wilmann Gomez	Nicole Davis	Evan Ziavras	Constance Brown	<input checked="" type="checkbox"/>
1784632	Marcellus Shale: Cementing and Well Casing Violations	Ignacio Davila	Wilmann Gomez	Constance Brown	Evan Ziavras	<input checked="" type="checkbox"/>
1645315	Environmental Compliance: Developing a Database for Waste Oil Monitoring	Ignacio Davila	Evan Ziavras	Constance Brown	Nicole Davis	<input checked="" type="checkbox"/>
1154886	Cataloging Emergency Response Vessels	Evan Ziavras	Ignacio Davila	Evan Ziavras	Nicole Davis	<input checked="" type="checkbox"/>
1187934	Improving Workflow at the National Science Foundation	Nicole Davis	Evan Ziavras	Evan Ziavras	Wilmann Gomez	<input checked="" type="checkbox"/>
1156372	Playground Equipment Classification and Burn Analysis	Wilmann Gomez				<input type="checkbox"/>
*						<input type="checkbox"/>



PANEL SUMMARIES

1. Before the review panel starts, you will need to create a discussion so the panelists are able to submit a proposal summary after the proposals have been reviewed in the review panel. Click on Panel Summary to go to the screen similar to the one below.

The screenshot displays the 'EEC Panels' interface. At the top, there is a search bar with 'This List: Panel 1 Summaries' and a 'Site Actions' dropdown. The main header shows 'EEC Panels > Panel 1 Summaries' and 'Panel 1 Summaries'. Below this is a navigation bar with 'New', 'Actions', and 'Settings' dropdowns, and a 'View: Subject' dropdown. The main content area is a table with columns for 'Edit', 'Subject', 'Replies', 'Lead', 'Scribe', and 'Conflicts'. The table contains two rows: 'Proposal # 125564' with 0 replies, and 'Proposal 2' with 3 replies. A red arrow points to the 'Panel 1 Summaries' link in the left navigation menu.

Edit	Subject	Replies	Lead	Scribe	Conflicts
	Proposal # 125564	0	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Proposal 2	3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



2. Once you are on the discussion board, click the tab “New” and create a new discussion.

The screenshot shows the 'EEC Panels' website interface. The main heading is 'Panel 1 Summaries'. On the left is a navigation menu with categories like 'Panel Set Up', 'Panelists', 'Proposals', 'Panel Discussions', 'Panelist Survey', and 'People and Groups'. The main content area has a 'New' dropdown menu open, with 'Discussion' (Create a new discussion topic) and 'Item' (Create a new list item) visible. A red arrow points to the 'Discussion' option. Below the menu is a table with columns for 'Replies', 'Lead', 'Scribe', and 'Conflicts'. The 'Replies' column shows '0' and '3' for two rows.

3. Fill-in the following fields with the required information. You will need to fill out the Lead, Scribe, and panelists with conflicts with this proposal. When done, click “Ok.”

The screenshot shows the 'Panel 1 Summaries: New Item' form. It has a yellow header with the title and 'OK' and 'Cancel' buttons. Below the header are 'Attach File' and 'Spelling...' options. The form has several fields: 'Subject' (required), 'Body' (with a rich text editor), 'Conflicts' (with a text input and a note 'Enter users separated with semicolons.'), 'Lead' (with a text input), and 'Scribe' (with a text input and a note 'Enter users separated with semicolons.'). At the bottom are 'OK' and 'Cancel' buttons. A red arrow points to the 'OK' button.



C. PROGRAM DIRECTOR USER MANUAL

The Program Director’s main responsibilities for the SharePoint site are to invite panelists to serve on a review panel, assign proposals to panels, and panelists to proposals. This site will send automatic emails regarding panelists’ availability and conflicts of interest and preferences with proposals.

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INVITING PANELISTS

1. As the Program Director, you will need to organize who you believe will be part of the review panel. Assuming that you have a panelist list organized in an Excel spreadsheet, open the Excel spreadsheet with panelist contact information.



	A	B	C	D	E	F
1	First Name	Last Name	Email			
2	Susan	Kemnitz	skemnitz@nsf.gov			
3	Victoria	Kwasiborski	vkwasibo@nsf.gov			
4	Carole	Read	cread@nsf.gov			
5	Rebecca	Bates	rbates@nsf.gov			
6	Gwen	Hardenbergh	ghardenb@nsf.gov			

- To login to the SharePoint site, you must first enter your username and password and click “Log On”.

NSF External Collaboration Portal

Security ([show explanation](#))

This is a public or shared computer
 This is a private computer

WARNING: The Government Computer System is provided as a public service by the National Science Foundation. It is intended for use by the public for receiving, submitting and reviewing of information only. All usage of information retrieved from the Computer System should follow the guidelines in Computer Fraud and Abuse Act of 1986. Unauthorized attempts to upload information, change or access information on the service are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986. Usage may be monitored.

Domain\user name:

Password:

To reset your password, [click here](#)

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3. Once logged in, click the “Panelist Invitees” list.

EEC Panels | This Site: EEC Panels | Site Actions

Welcome to the EEC Panel Site Homepage

Panelist review the proposals and write their summary

Panel Set Up

- Panel Dates
- Panelist Invitees**
- NSF Administrators' Contact Information
- Program Director's Documents

Useful Information

- NSF Administrators' Contact Information
- Program Director's Documents

Instructions

1. Log in
2. Click on the 'Panelist Invitees' link
3. Click on the 'Add New Panelist' link
4. Fill out the form
5. Submit

Contact

If you are having any trouble adding another conflict contact the Department Program Director.

If you are having any trouble with the panel information or traveling contact the Department Program Assistant.

Having Computer Problems?

Contact the NSF IT helpdesk

Email: IThelpcentral@nsf.gov

Phone Number: 703-292-4357 OR 1-800-711-8084

NSF Administrators

Name	Position	Business Phone	E-mail Address
Evan Zivras	Program Director	(703) 292-7107	ezivras@nsf.gov
Wilmann Gomez	Program Assistant	(703) 292-8793	wgomez@nsf.gov

Panel Dates

Date	Time	Panel	Location
12/23/2011	3:00 PM	Panel 1	Stafford I 547
9/20/2012	4:00 PM	Panel 3	
12/1/2012	3:00 PM	Panel 2	

4. In order to add new panelist to this list, click the “Actions” tab and select “Edit in Spreadsheet”.

EEC Panels | This List: Panelist Invitees | Site Actions

EEC Panels > Panelist Invitees

Panelist Invitees

View: All Items

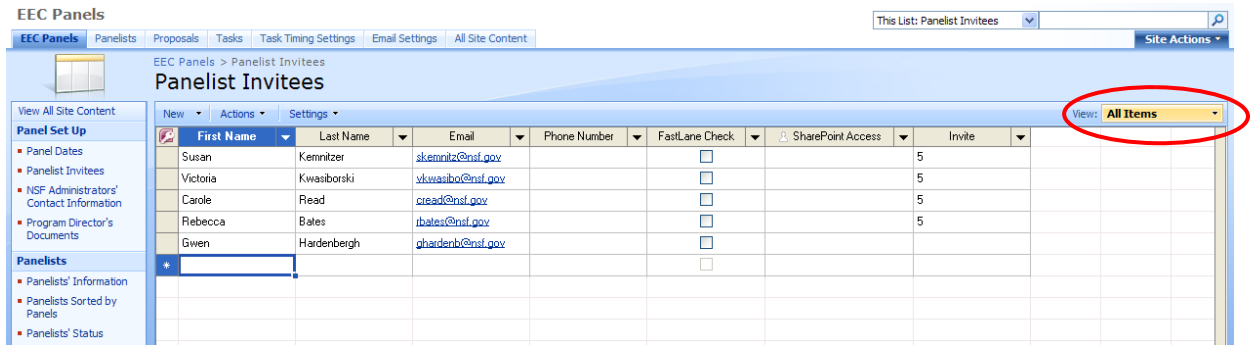
Actions

- Edit in Datasheet: Bulk edit items using a datasheet format.
- Export to Spreadsheet: Analyze items with a spreadsheet application.
- Open with Access: Works with items in a Microsoft Office Access database.
- View RSS Feed: Syndicate items with an RSS reader.
- Alert Me: Receive e-mail notifications when items change.

Edit	Email	Phone Number	FastLane Check	SharePoint Access	Invite
There are no items to show in this view of the 'Panelist Invitees' list. To create a new item, click 'New' above.					



- Copy the desired information from your Excel spreadsheet, and click on the field with the asterisk. Afterwards, simply paste the copied information. You should have something similar to the following picture. Afterwards, click the “All Items” tab at the upper right side circled in red.



- By clicking the “All Items” tab, you will be able to view all the items in the list which will look similar to the screen below.



- Send the link of this page to DIS and ask them to create external SharePoint accounts for them. Once DIS has done this contact the Program Assistant and tell him or her to add the panelists to the “EEC Pre-Selection Panelists” group. After adding them to the group, the PA needs to confirm they are in FastLane and have SharePoint access.
- After all prospective panelists have filled-out the InfoPath forms, an email with the reviewer’s availability will be received.



ASSIGNING PROPOSALS TO PANELS

1. In order to assign proposals to each panel, Click the “Proposals” tab (1) to go to the page below and then click the “Actions” button and “Edit in Datasheet”(2).

The screenshot shows the 'EEC Panels > Proposals' page. The 'Proposals' tab is selected in the top navigation bar. The 'Actions' dropdown menu is open, and the 'Edit in Datasheet' option is highlighted. The main content area displays a table of proposals with columns for PI Last Name, PI First Name, Institution, Title, Program Announcement, Dir-Div-P, Org Code, Submit Date, Submit Time, and Requested Amount.

PI Last Name	PI First Name	Institution	Title	Program Announcement	Dir-Div-P	Org Code	Submit Date	Submit Time	Requested Amo
Brodeur	Patrick	Worcester Polytechnic Institute	Environmental Compliance: Developing a Database for Waste Oil Monitoring	PD 10-1340	1340	7050000	9/16/2011	11:12:25	\$22,000
Freyermuth	Jeffrey	Worcester Polytechnic Institute	Cataloging Emergency Response Vessels	PD 10-1340	1340	7050000	9/16/2011	10:40:49	\$25,000
Davila	Ignacio	Worcester Polytechnic Institute	Improving Workflow at the National Science Foundation	PD 10-1340	1340	7050000	9/16/2011	13:10:12	\$30,000
Davila	Ignacio	Worcester Polytechnic Institute	Improving Workflow at the National Science Foundation I NEW	PD 10-1340	1340	7050000	9/16/2011	13:10:12	\$30,000
Ford	Gregory	Worcester Polytechnic Institute	Playground Equipment Classification and	PD 10-1340	1340	7050000	9/16/2011	14:30:05	\$21,000

2. To assign the proposals to a panel, add the appropriate panel number to the “Panel Assignment” column.

The screenshot shows the 'EEC Panels > Proposals' page with the 'Panel Assignment' column highlighted. The table has columns for Proposal Number, Panel Assignment, PI Last Name, PI First Name, Institution, Title, and Program Announcement. The 'Panel Assignment' column is currently empty for all rows.

Proposal Number	Panel Assignment	PI Last Name	PI First Name	Institution	Title	Program Announcement
1645315		Brodeur	Patrick	Worcester Polytechnic Institute	Environmental Compliance: Developing a Database for Waste Oil Monitoring	PD 10-1340
1154886		Freyermuth	Jeffrey	Worcester Polytechnic Institute	Cataloging Emergency Response Vessels	PD 10-1340
1187934		Davila	Ignacio	Worcester Polytechnic Institute	Improving Workflow at the National Science Foundation	PD 10-1340
1156372		Ford	Gregory	Worcester Polytechnic Institute	Playground Equipment Classification and Burn Analysis	PD 10-1340
1315498		Gomez	Wilmann	Worcester Polytechnic Institute	Improving Workflow Efficiency at the National Science Foundation	PD 10-1340
1245932		Amador	Francisco	Worcester Polytechnic Institute	Advanced Patent Application Analysis	PD 10-1340
1875456		Acosta	Christian	Worcester Polytechnic Institute	Transit System Analysis and Optimization in Montgomery County	PD 10-1340
1784632		Walker	Griffin	Worcester Polytechnic Institute	Marcellus Shale: Cementing and Well Casing Violations	PD 10-1340



ASSIGNING REVIEWERS TO PANELS

1. In order to assign reviewers to each panel, click the “Panelists” tab (1) to go to the page below and then click the “Actions” button and “Edit in Datasheet” (2).

The screenshot shows the 'EEC Panels Forms' interface. A red arrow labeled '1' points to the 'Panelists' tab in the top navigation bar. Another red arrow labeled '2' points to the 'Actions' button in the top toolbar. The 'Actions' menu is open, showing the 'Edit in Datasheet' option. The main content area displays a table of panel assignments.

Type	Panel Assignment	Expertise	Conflicts	Panel 1	Panel 2	Panel 3	Prefer to Not Review	Prefer to Review	Form Status	Fill Out Form
			Yes	Yes	No				Invitation Accepted	Completed
	enb@nsf.gov		Yes	No	Yes				Availability Pending	Completed
			Yes	Yes	No				Invitation Accepted	Stopped
	sbo@nsf.gov	Biochemistry, S&T Policy	No	Yes	No				Invitation Accepted	Error Occurred



EMAILING USERS

1. After you have assigned the panelists to the proposals, you will need to email the panelists to fill out their conflict of interest form. Go to “People and Groups: EEC Pre-Selection Panelists/”

EEC Panels | Panelists | Proposals | Tasks | All Site Content

This Site: EEC Panels | Site Actions

Welcome to the EEC Panel Site Homepage

This SharePoint site will be used to help the panelist review the proposals and write their summary

Useful Tips

- If you need to put in your information, please click the FastLane tab above.
- If you need to look at a proposal, please click the eJacket tab above.

Instructions

1. Login to FastLane and put in your information where needed
2. Complete your personal form and submit it
3. Once your panel number(s) and proposals are assigned to you, confirm your assignments in the InfoPath form
4. Download the proposals assigned to you from eJacket
5. Submit your reviews two weeks after you receive your assignments

Contact Information

If you are having any trouble adding another conflict contact the Department Program Director.

If you are having any trouble with the panel information or traveling contact the Department Program Assistant.

Having Computer Problems?

Contact the NSF IT helpdesk

Email: IThelpcentral@nsf.gov

Phone Number: 703-292-4357 OR 1-800-711-8084

Panelist Survey

Name	Business Phone	E-mail Address
Evan Zlav Wilmann	(703) 292-7107	ezlavras@nsf.gov
	(703) 292-8793	wgomez@nsf.gov

Recycle Bin

NSF Adm	Panel
11/22/2012 8:00 AM	Panel 1 NEW
12/9/2012 10:00 AM	Panel 2 NEW
12/20/2012 10:00 AM	Panel 3 NEW

Announcements

There are currently no active announcements. To add a new announcement, click "Add new announcement" below.

[Add new announcement](#)


Tasks

Edit	Title	Status	Due Date
There are no items to show in this view of the "Tasks" list. To create a new item, click "New" above.			
Add new item			

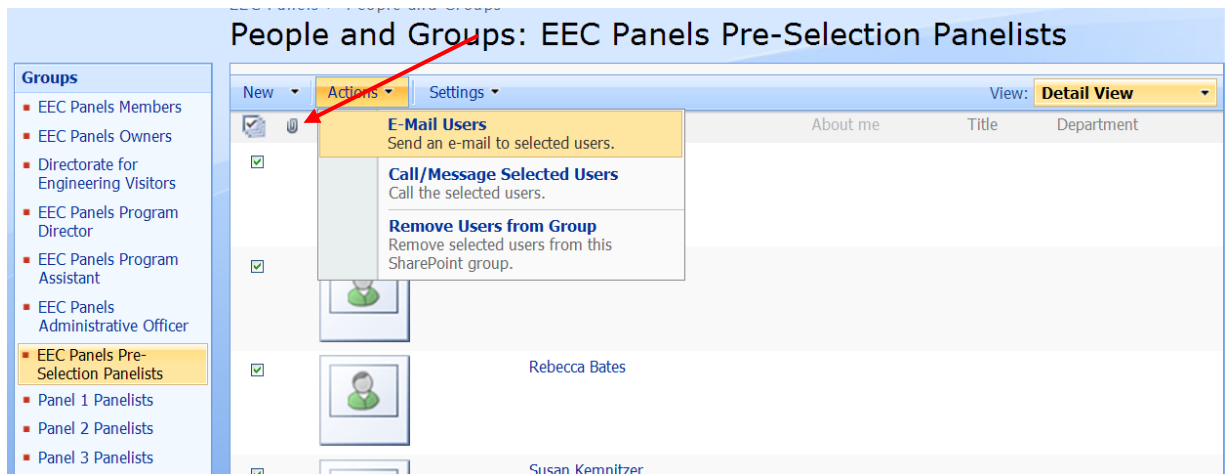
Links

- [FastLane](#)
- [eJacket](#)
- [Reset Password](#)
- [Add new link](#)



2. Click the “Select All” button  to put check marks by all of the panelists’ names. Then click “Actions” and then “Email Users”. An email box will pop up with selected panelists’ emails. Send the following link to the panelists as it will direct them to the screen so that they can fill out their conflicts of interests and preferences for proposals:

[https://extsharepoint.nsf.gov/eng/eec/panels/Panelists Information/Personal Information.aspx](https://extsharepoint.nsf.gov/eng/eec/panels/Panelists%20Information/Personal%20Information.aspx)



The screenshot displays the 'People and Groups' interface for the 'EEC Panels Pre-Selection Panelists' group. On the left, a 'Groups' sidebar lists various roles, with 'EEC Panels Pre-Selection Panelists' highlighted. The main area shows a list of users with checkboxes in the left margin. A red arrow points from the 'Actions' menu to the 'E-Mail Users' option. The 'E-Mail Users' option is highlighted in yellow. Other options in the menu include 'Call/Message Selected Users' and 'Remove Users from Group'. The user list includes Rebecca Bates and Susan Kemnitzner.



PANELISTS' CONFLICT OF INTEREST

Once the panelists have finished their conflict of interest form, you will receive an email that contains their conflicts and their preference. The email will look similar to the email shown below.

Conflicts Listed Email

Davis, Nicole

Sent: Mon 12/12/2011 11:57 AM

To: Davis, Nicole

Constance Brown has listed the following conflicts and preferences:

Conflicts: 1315498;

Prefers to review: 1187934;

Prefers not to review:



ASSIGNING REVIEWERS TO PROPOSALS

Once you have assigned the lead, scribe, and reviewers for each proposal, email the assignments to your Program Assistant. The Program Assistant will then put the Assignments of the proposals into the SharePoint site, where you will finalize it.

1. Click the “Proposals” tab at the top of the screen and then change the view to “Assignments”. Click the “Actions” and “Edit in Datasheet”.

DO NOT CHECK OFF ASSIGNMENTS FINALIZED UNTIL THEY HAVE CONFIRMED BY THE PROGRAM DIRECTOR. ONCE THIS BUTTON IS CHECKED ANY ASSIGNMENT CHANGES MADE WILL SEND EMAILS TO PANELISTS.

Panel Assign	Lead	Scribe	Reviewer 1	Reviewer 2	Assignments Finalized
iciency at the National Science Foundation	Wilmann Gomez	Evan Zivras	Constance Brown	Wilmann Gomez	Yes
ication Analysis	Nicole Davis	Constance Brown	Ignacio Davila	Evan Zivras	Yes
s and Optimization in Montgomery County	Wilmann Gomez	Nicole Davis	Evan Zivras	Constance Brown	Yes
ting and Well Casing Violations	Ignacio Davila	Wilmann Gomez	Constance Brown	Evan Zivras	Yes
nce: Developing a Database for Waste Oil Monitoring	Ignacio Davila	Evan Zivras	Constance Brown	Nicole Davis	Yes
Response Vessels	Evan Zivras	Ignacio Davila	Evan Zivras	Nicole Davis	Yes
the National Science Foundation	Nicole Davis	Evan Zivras	Evan Zivras	Wilmann Gomez	Yes
Classification and Burn Analysis	Wilmann Gomez				

2. After the assignments have been properly set, click the “Assignments Finalized” box. Any further changes will send emails to the panelists being affected, the PA, and the AO.

DO NOT CHECK OFF ASSIGNMENTS FINALIZED UNTIL THEY HAVE CONFIRMED BY THE PROGRAM DIRECTOR. ONCE THIS BUTTON IS CHECKED ANY ASSIGNMENT CHANGES MADE WILL SEND EMAILS TO PANELISTS.

Proposal Number	Title	Lead	Scribe	Reviewer 1	Reviewer 2	Assignments Finalized
1315498	Improving Workflow Efficiency at the National Science Foundation	Wilmann Gomez	Evan Zivras	Constance Brown	Wilmann Gomez	<input checked="" type="checkbox"/>
1245932	Advanced Patent Application Analysis	Nicole Davis	Constance Brown	Ignacio Davila	Evan Zivras	<input checked="" type="checkbox"/>
1875496	Transit System Analysis and Optimization in Montgomery County	Wilmann Gomez	Nicole Davis	Evan Zivras	Constance Brown	<input checked="" type="checkbox"/>
1784632	Marcellus Shale: Cementing and Well Casing Violations	Ignacio Davila	Wilmann Gomez	Constance Brown	Evan Zivras	<input checked="" type="checkbox"/>
1645315	Environmental Compliance: Developing a Database for Waste Oil Monitoring	Ignacio Davila	Evan Zivras	Constance Brown	Nicole Davis	<input checked="" type="checkbox"/>
1154896	Cataloging Emergency Response Vessels	Evan Zivras	Ignacio Davila	Evan Zivras	Nicole Davis	<input checked="" type="checkbox"/>
1187934	Improving Workflow at the National Science Foundation	Nicole Davis	Evan Zivras	Evan Zivras	Wilmann Gomez	<input checked="" type="checkbox"/>
1156372	Playground Equipment Classification and Burn Analysis	Wilmann Gomez				<input type="checkbox"/>



CONFIRM ASSIGNMENTS

1. Once you have confirmed the assignments for each proposal, send the panelists the following link that will show them which proposals they are assigned to review:

<https://extsharepoint.nsf.gov/eng/eec/panels/Panelists%20Information/My%20Assignments.aspx>



EEC PANELS SITE

EXTERNAL SHAREPOINT SITE DOCUMENTATION

SITE URL:

<http://extsharepoint.nsf.gov/eng/eec/panels/>

THIS DOCUMENT IS TARGETED AT ANYONE INTERESTED IN KNOWING MORE ABOUT HOW THE EEC PANELS SHAREPOINT SITE IS SET UP AND HOW IT IS DESIGNED IN THE BACKGROUND, INCLUDING THE WORKFLOWS, GROUPS AND PERMISSIONS ASSOCIATED WITH THE SITE AND THE LOGIC BEHIND THEM.



National Science Foundation 2011



PROPOSALS LIST

The *Proposal List* is the master list used to manage all the information with regards to the proposals to be reviewed. The list was formatted so that the Program Director (PD) could easily copy and paste from FastLane or eJacket into the list's datasheet view. In addition, we added columns for the Panel date, Lead, Scribe and Reviewer assignments for each proposal. Conflict columns were also included in the Proposal master list. This set up allowed the team to use webparts linked to the list to display different views of the information. These views are intended to help the PD visualize the data as he or she receives responses from the panelists and is able to make appropriate assignment decisions. Javascript was used to modify this form so that the Lead, Scribe, Reviewer 1, Reviewer 2, Old Lead, Old Scribe, Old Reviewer 1, and Old Reviewer 2 fields were hidden when editing or creating an item. This was done by downloading SPUtility and storing it in the Scripts folder of the Administrative Information library. A content editor web part was then added to the edit and new screens so that these fields would be hidden. In order to hide these fields when an item was simply displayed the HideFields script was downloaded, stored in the Scripts folder, and put into a content editor web part on the display page for an item.

FIELDS

Attachment Field - This field is used to attach the proposal's abstract. The Program Director (PD) can attach this file in any format he or she chooses (Word, PDF, etc.).

Panel Assignment (Number) – The number of the panel in which it will be reviewed.

PI Last Name (Single Line Text) – Last name of Principal Investigator.

PI First Name (Single Line Text) – First Name of Principal Investigator.

Institution (Single Line Text) – Institution requesting funding for this proposal.

Title (Multiline Text) – Title of proposal.



Program Announcement (Single Line Text) – NSF proposal information

Dir-Div-P (Single Line Text) – NSF proposal information

Org Code (Single Line Text) – NSF proposal information

Submit Date (Date) – Date proposal was submitted

Submit Time (Time) – Time proposal was submitted

Requested Amount (Currency) – Amount of money in dollars that the proposal is requesting for NSF funding

< \$50,000 (Yes/No) – Indicates whether the proposal is requesting less than \$50,000 in funding. Program Director is allowed to independently recommend a proposal if it is asking for this much money.

Lead (Person) – The reviewer who is assigned as the lead for a proposal

Scribe (Person) – The reviewer who is assigned as the scribe for a proposal

Reviewer 1 (Person) – The reviewer who is assigned as reviewer 1 for a proposal

Reviewer 2 (Person) – The reviewer who is assigned as reviewer 2 for a proposal

Old Lead (Person) – A placeholder field that is used to compare the current lead with the former one. This is used to indicate if an assignment change has been made.

Old Scribe (Person) - A placeholder field that is used to compare the current scribe with the former one. This is used to indicate if an assignment change has been made.

Old Reviewer 1 (Person) - A placeholder field that is used to compare the current lead with the former one. This is used to indicate if an assignment change has been made.

Old Reviewer 2 (Person) - A placeholder field that is used to compare the current lead with the former one. This is used to indicate if an assignment change has been made.

Co-PI 1-4 (Single Line Text) – 4 fields that indicate if the proposal has multiple Principle Investigators.

Collaborative Role (Single Line Text) – The role of the collaborator on the proposal

Collaborative Lead (Single Line Text) – The collaborative lead on the proposal

Collaborative Secondary (Single Line Text) – The collaborative secondary on the proposal



Assignment Changes:

The Assignment Changes workflow is associated with the Proposals list. This workflow is initiated whenever an item in the list is modified. The fields that this workflow checks are Lead, Scribe, Reviewer 1, and Reviewer 2, known as assignment fields. It also checks Old Lead, Old Scribe, Old Reviewer 1, and Old Reviewer 2, known as temporary fields. The first fields it checks are Lead, Scribe, Reviewer 1, and Reviewer 2. If any of those fields contain values and their respective temporary fields are empty, the temporary fields are set to the value of the assignment fields. This sets the initial values of the temporary fields. After all of the assignment fields have been set the workflow checks for changes in the assignment fields and Assignments Finalized has been checked, all modifications to the assignment fields will trigger emails to be sent out to the affected panelists. An assignment change would be indicated by an inequality between an assignment field and its temporary field. If this inequality exists an email is sent to the people in the assignment field and the temporary field. This email tells the panelists that their assignments for that proposal have been changed.



EEC PANELS FORMS

The EEC Panels Forms Library is used to store information about each panelist. Panelists fill out InfoPath forms in this library to show their availability to serve on panels and conflicts and preferences with proposals. The information marked on the forms automatically populates the fields on the list.

FIELDS

Type (Attachment) – The InfoPath form filled out by each panelist

Panel Assignment (Single Line Text) – The number of the panel that each panelist has been assigned to serve on

First Name (Single Line Text) – First name of the panelist

Last Name (Single Line Text) – Last name of the panelist

University (Single Line Text) – The university that the panelist is from

E-Mail (Single Line Text) – The email of the panelist

Expertise (Multiline Text) – The scientific fields that the panelist specializes in

Conflicts (Single Line Text) – The proposal numbers that each panelist has a conflict of interest with

Panel 1 (Yes/No) – Indicates whether the panelist is available to serve on Panel 1

Panel 2 (Yes/No) - Indicates whether the panelist is available to serve on Panel 2

Panel 3 (Yes/No) - Indicates whether the panelist is available to serve on Panel 3

Prefer to Review (Single Line Text) – The proposal numbers that the panelist would prefer to review

Prefer to Not Review (Single Line Text) – The proposal numbers that the panelist would not prefer to review



Form Status (Single Line Text) – Indicates where in the process of completing the InfoPath form the panelist is.

Availability Email (Yes/No) – Indicates whether the email to the Program Director and Program Assistant has been sent to notify them of panelists’ availabilities. If this equals Yes then the email will no longer be sent.

Assignment Email (Yes/No) – Indicates whether the email to the Program Assistant has been sent to notify him of the panel that the panelist has been assigned to.

WORKFLOWS

Fill Out Form:

The Fill Out Form workflow contains the entire process of the panelist filling out his or her InfoPath form. The workflow reads the Form Status field and assigns tasks and sends emails based on its value. If the panelist marks that they are able to attend at least one of the panels, the Form Status becomes Invitation Accepted and an email is sent to both the PD notifying them of that. If that panelist rejects an invitation the Form Status becomes Invitation Rejected and an email then sent to the PD. In the case of either an acceptance or rejection the workflow deletes the Mark Availability task assigned to the person filling out the form as it has been completed. Once the PD assigns each panelist to serve on a panel and populates the Panel Assignment field, an email is sent to the PA telling them to put that panelist in the appropriate panel group. Form Status then becomes Conflicts Pending and the workflow assigns Mark Conflicts and Preferences to the person filling out the form. The due date of this task is retrieved from the Time (Days) field of the Task Timing Settings list. An email is also sent out to the PA each time this field is modified to let him or her know to place the panelist in the appropriate group. Once the panelist goes back into the form and fills out his or her conflicts the Form Status will become Conflicts Marked and the Mark Conflicts and Preferences task will become completed. The workflow will also send an email to the PA and PD if either the conflicts field or any of the two preferences fields are not empty. The panelist will then need to go back into the form and confirm their



proposal assignments. Once this is done Form Status will become Assignments Finalized and an email will be sent to the PD notifying him or her of this.



PANELIST INVITEES

The Panelist Invitees list is used by the Program Director to list of the people he would like to invite to his panels. It contains basic information so that DIS can open this list and create external SharePoint accounts for everyone on it.

FIELDS

First Name (Single Line Text) – First name of panelist

Last Name (Single Line Text) – Last name of panelist

E-mail (Single Line Text) – E-mail address of panelist

Phone Number (Single Line Text) – Phone number of panelist

FastLane Check (Yes/No) – Indicates whether the panelist's information is on FastLane and if the two systems match

SharePoint Access (Person) – The NSF account for the person. This is used to determine whether the person has SharePoint access or not and if they can be sent an invitation to serve on the panel.

Username (Single Line Text) – The external NSF username created for each panelist

Password (Single Line Text) – The external NSF password created for each panelist

WORKFLOWS

Invite:

The purpose of Invite is to send out an invitation to each panelist when it is confirmed that their information is in FastLane and they have access to the external SharePoint site. The workflow is set to commence each time an item in the list is modified and it checks the FastLane and SharePoint fields. An email inviting the panelists to serve on the review panels is sent if the FastLane field contains the value of Yes and the SharePoint field is not empty. This workflow



also assigns the task, Mark Availability, to whom the email is being sent and sets the due date for the value in the Time (Days) field of Task Timing Settings when the Title field is Time to Mark Availability.



PANEL DATES

The Panel Dates list is used to store the information of when each panel date is scheduled for and where it will be located.

FIELDS

Title (Single Line Text) – Title of panel

Location (Single Line Text) – Room/Hotel where panel is being held

Start Time (Date and Time) – Time and date that the panel will be started

End Time (Date and Time) – Time and date that panel is scheduled to end

Book Room Date (Calculated Field) – Date 197 days (approximately 6.5 months) before the start time. The workflow uses this field to know when to send an email to the PA, PD, and AO to remind them that a room for the panel has to be booked.

WORKFLOWS

Book Room:

The Book Room workflow is associated with the Calendar list and creates the task of booking a room for each review panel. This workflow is initiated on each item created in the Calendar list. If the name of the event contains the word, “Panel”, Book Room is created in the Task list and is assigned to the PA. The due date for this task is the date of the Book Room Date field in the Calendar list. This is a calculated field that is set to be 197 (approximately 6.5 months) before the panel start date.



TASKS LIST

The Tasks list contains all of the tasks assigned to the Program Assistant and panelists. Workflows email reminders to people who have not completed their tasks are associated with this list.

FIELDS

Title (Single Line Field) – Task title

Assigned To (Person) – The person or SharePoint group that each task is assigned to

Status (Choice) – Indicates if the task has been completed

Due Date (Date and Time) – Date the task is due

Modified (Date and Time) – Time and date when the task was last modified

WORKFLOWS

Check Book Room:

Check Book Room is associated with the Task list and is used to tell if a room has been booked by the time of six months and two weeks before each panel. Each time a task is created or modified the workflow checks the Name field in the list. If the name is not Book Room, the workflow is stopped. If the name is Book Room, the workflow pauses until the due date of the task. At the due date, the workflow checks the Progress field. If the Progress field is marked as Completed then the workflow is stopped. If it not completed the workflow then sends a reminder email to the PD, PA, and AO and adds time to the due date. The number of days added is taken from the Time (Days) field of Task Timing Settings when the Title is Time between reminders to



book room for panels. The workflow will then be initiated again because the Due Date was modified and will keep checking if the task is completed.

Check Mark Availability:

Check Mark Availability is associated with the Task list and is used to tell if Mark Availability is completed by its due date. Each time a task is created or modified the workflow checks the Title field in the list. If the name is not Mark Availability, the workflow is stopped. If the name is Mark Availability, the workflow pauses until the due date of Mark Availability. At the due date the workflow then checks the Status field. If the Progress field is marked as Completed then the workflow is stopped. If it not completed the workflow then sends a reminder email to the panelist and adds time to the due date. The number of days added is taken from the Time (Days) field of Task Timing Settings when the Title is Time between reminders to Mark Availability. The workflow will then be initiated again because the Due Date was modified and will keep checking if the task is completed.

Check Mark Conflicts and Preferences:

Check Mark Conflicts and Preferences is associated with the Task list and is used to tell if Mark Conflicts and Preferences is completed by its due date. Each time a task is created or modified the workflow checks the Title field in the list. If the name is not Mark Conflicts and Preferences, the workflow is stopped. If the name is Mark Conflicts and Preferences, the workflow pauses until the due date of Mark Conflicts and Preferences. At the due date the workflow then checks the Status field. If the Progress field is marked as Completed then the workflow is stopped. If it not completed the workflow then sends a reminder email to the panelist and adds time to the due date. The number of days added is taken from the Time (Days) field of Task Timing Settings when the Title is Time between reminders to Mark Conflicts and Preferences. The workflow will then be initiated again because the Due Date was modified and will keep checking if the task is completed.



ADMINISTRATORS LIST

The Administrators list gives the names, positions, and contact information of all NSF staff associated with the review panel. This information is displayed on the home page and workflows take information from this list in order to send emails the PD, PA, and AO.

FIELDS

Name (Single Line Text) – Name of staff member

Position (Single Line Text) – Position within NSF

Business Phone (Single Line Text) – Phone number of staff member

E-mail Address (Single Line Text) – Email address of staff member



TASK TIMING SETTINGS

The Task Timing Settings list exists so that Program Directors can customize the timing of each task created by a workflow.

FIELDS

Title (Single Line Text) – Describes what setting this row modifies

Time (Days) (Number) – Number of days that each setting is set to



EMAIL SETTINGS

The Email Settings list exists for the purpose of the Program Director customizing the bodies of the emails being sent out to panelists.

FIELDS

Title – Description of when email will be sent out

Message – The message being sent out to the panelist



SECURITY GROUPS

This site contains various groups set up with different securities on them. Since NSF has strict guideline regarding panelists viewing certain information, a group was created for the Program Director, Program Assistant, Administrative Officer, pre-selection panelists, and post panel assignment panelists. The groups for the PD, PA, and AO are know and EEC Panels Program Director, EEC Panels Program Assistant, and EEC Panels Administrative Officer respectively. The PD has full control of every list on the site as he is the one running the panel set up. The PA and AO have access to everything but the Email Settings and Task Timing Settings lists.

The panelists are all initially put into the EEC Pre-Selection Panelist groups and moved to Panel 1 Panelists, Panel 2 Panelists, or Panel 3 Panelists based on which panel they are assigned to. The EEC Pre-Selection Panelist group has a very restricted view of the site. They are only allowed contribute access to EEC Panels Forms and Read access to the Administrators and Calendars list. They are also only allowed in the Pre-Selection Documents folder of the Program Director's Documents list.

Panel 1 Panelists, Panel 2 Panelists, and Panel 3 Panelists have greater access to this site. In addition to having all the EEC Panels Pre-Selection Panelist's permission, they have read permissions on the Proposals list and all folders in the Program Director's Documents list.

In order to make sure that panelists cannot see restricted information, web parts with target audiences are used. Since panelists need to see information within every list, they must have access to them. However they cannot access the list directly from links on the site. The only way they can see a list is by viewing its web part. The Personal Information web part filters panelists' forms based on the Created By field. The panelists can only see the form that they have created. Web parts are also created for Proposals. There is a web part for each panel and each consists of the proposals in that panel. This web part has the target audience of the group of panelists serving on the panel. There is also a web part called My Assignments that filters the



Lead, Scribe, Reviewer 1, and Reviewer 2 fields based on the logged in user. This way, panelists can only see the assignments on the proposals that they are assigned to.



E. INFOPATH FORM DOCUMENTATION

The InfoPath form will be used to gather important data and information regarding the reviewers. The form will consist of three different parts, which the reviewers will fill throughout the proposal review process. In the following manual, all of the different parts (Panelist Information and Availability, Panelist Conflict Selection, Assignments Review and Approval Section) and fields that compose the form will be discussed in a technical way, in order to provide accurate information for any developer that wishes to learn how to use and modify the form for its intended goals.



Flowcharts

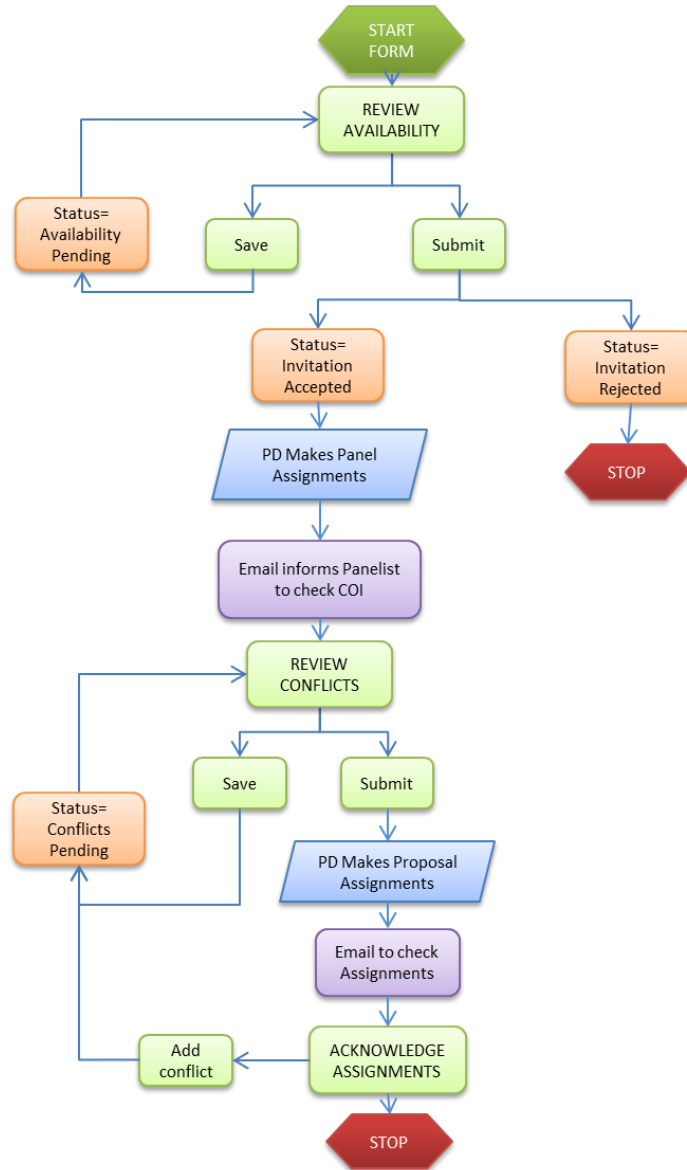


FIGURE 11 - INFOPATH FORM PROCESS FLOW



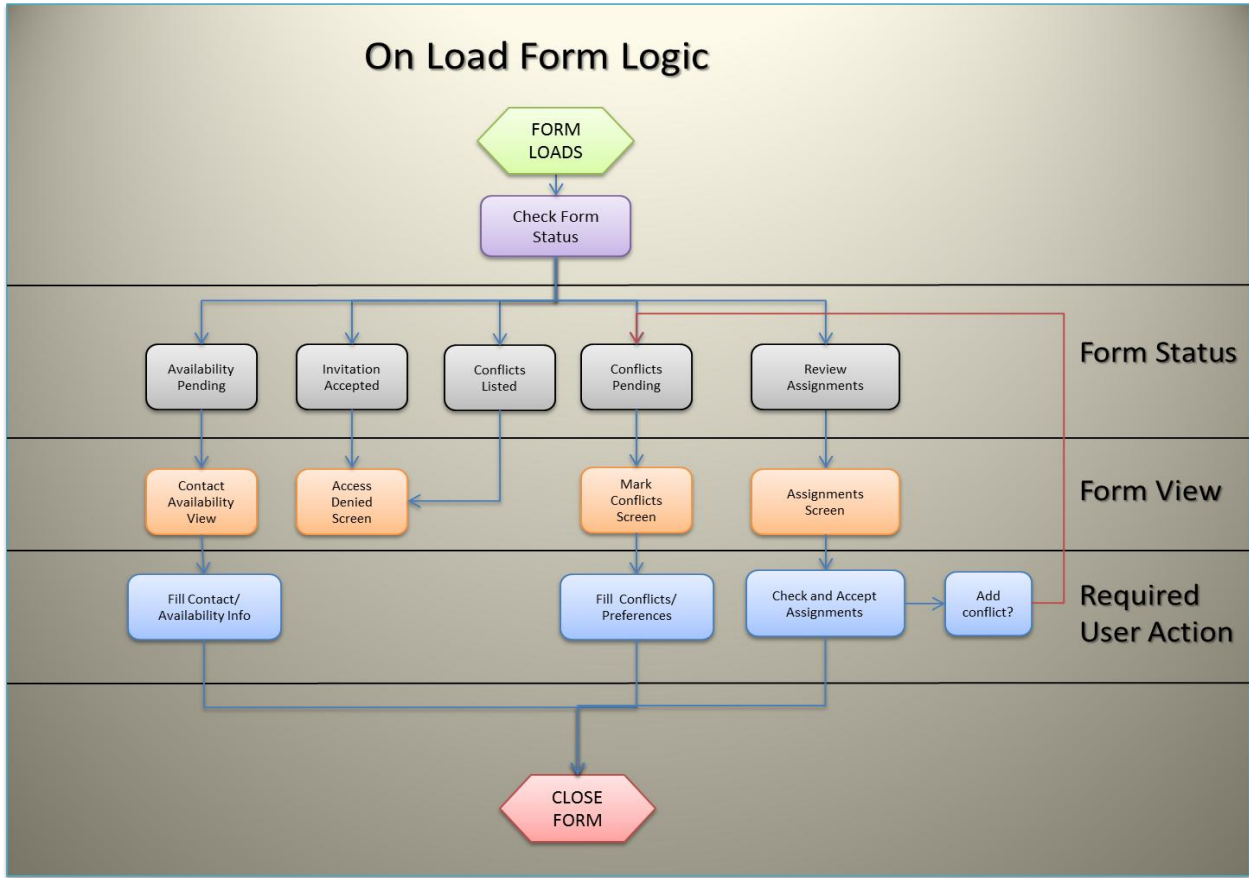


FIGURE 12 - ON LOAD FORM LOGIC



Panelist Information and Availability

Whenever a panelist is invited to serve as a panelist, this form will need to be filled by the panelist. The main purpose of this form is to collect personal and contact information, and panel date availability.

The “Personal Information” part of the form is composed of the following fields:

- First Name: prospective panelist writes his first name
- Last Name: prospective panelist writes his last name
- Phone Number: prospective panelist writes the phone number where he can be easily reached
- Email: prospective panelist writes the email address where he can be easily reached
- Institution: prospective panelist writes the Institution where he is currently working
- Expertise: prospective panelist writes his field of expertise

The “Confirm Availability” part of the form is composed of the following fields.

- Start Date: date when the panels start appears
- End Date: date when the panels end appears
- Available: If available for any of the three proposed panels, the “Yes” button is marked, otherwise, the “No” button is marked. When filling out this part of the form, it is important to take into account that by clicking “No” in all of the availability fields, a message will appear. This message will signal that by clicking “Submit” with these settings the invitation will be forfeited (Note: this message will only appear if all of the availability checkboxes are marked “No”.)
- Save and Close: this button gives the panelist the opportunity to save its current work, close the form, and finish it at a later time.



- Submit: after completing all the required fields, this button must be clicked, in order to pass to the next part of the form.

Technical highlights:

For this section of the form, there are very simple rules used. It's worth noting that:

The radio buttons `rbtnPanel1_YesNo`, `rbtnPanel2_YesNo`, `rbtnPanel3_YesNo` determine whether or not the Submit button is visible.

The text boxes for each Panel's start and end date will be hidden if they are blank.

Review Conflicts of Interest

After being assigned to a panel, the panelist must review each of the proposals information and verify if they have or not a conflict of interests (COI's). In case of a COI, the COI checkbox for that proposal must be checked. Optionally, panelists may check proposals they would like to/ rather not review.

The "Review Conflicts of Interests" form is composed of the following fields:

- Proposal Number: the identification number for each proposal appears here
- Proposal Title: The title of each proposal appears here
- Institution: The Institution that submitted the proposal appears here
- Principal Investigator Name: The person that submitted the proposal's name appears here
- Co-PI's:

As you go through the form reviewing the proposals, the following buttons are clicked:

- Previous: Click to see previous proposal
- Next: Click to see next proposal



- Conflict of Interest? : In case of a conflict, mark “Yes”, otherwise, mark “No”. (Note: when “Yes” is marked, the “Reviewing Preference” buttons are disabled)
- Reviewing Preference: If “No is marked in the “Conflict of Interest” field, then the panelist has the option to express his reviewing preference by marking “I’d Like To”, “No Preference”, or “I’d rather not”

The “Collaborative Proposal” part of the form shows a proposal that has been submitted by several institutions. The main proposal to be reviewed will be the lead proposal. As a result, the form offers the following fields are offered:

- Proposal Number: the identification number of the proposal
- Secondary Institution: the secondary institution which submitted the proposal.
- Secondary Co-PI’s:
- Save and Close: this button gives the panelist the opportunity to save its current work, close the form, and finish it at a later time.
- Submit: after completing all the required fields, this button must be clicked, in order to pass to the next part of the form.

Assignments Review and Approval Section

After all assignments and panels have been assigned, the prospective panelist must revise the following form, to ensure he understands what will be his roles for the assign proposal (i.e. he could serve as lead reviewer for one proposal, and scribe for another one). This part of the form, offers the following fields:

- Panel Number: shows the number of the panel the panelist will be serving.
- Panel Start Date: date the panel starts
- Panel End Date: date the panel ends
- Lead: lead for the selected proposal



- Scribe: scribe for the selected proposal
- Reviewer: reviewer for the proposal
- Close form: use this button to close the form.

When done, click the “Submit” button. **Note:** between the time this form has been submitted and the moment the panel starts, in case the panelist finds an assigned proposal with a conflict of interest, the panelist can click the “**Click Here to List Additional Conflicts of Interest**” button to mark the conflict.

