6.4 Human Resources

NSF expects the ERC to rest on a culture of inclusion where faculty, students, and staff from all backgrounds have an opportunity to succeed in research, education, innovation, and administration. Thus, the leadership team, faculty, students, and staff involved in an ERC will be diverse in their experiences as well as diverse in gender, race, and ethnicity—i.e., women, African Americans, Native Americans, Pacific Islanders, Alaskan Natives, Hispanic Americans, or persons with disabilities who are U.S. citizens or permanent residents. The ERC also will be multicultural through the involvement of faculty and students from other countries by virtue of their role as faculty or students in the center's domestic institutions. The ERC may also include veterans as faculty, students, and staff, as well as members of the ERC's RET teacher corps. The goal is to have broad participation of groups underrepresented in engineering that exceeds the academic engineering-wide national averages and continues through time on an upward slope in relationship to those national averages. See the discussion under Infrastructure in the Gen-3 ERC solicitation: http://www.nsf.gov/pubs/2013/nsf13560/nsf13560.htm.

This diversity is expected of the participants from the lead and each of the partner academic institutions. While one of the partner institutions must serve large numbers of students majoring in STEM fields who are from groups underrepresented in engineering, that institution cannot be the only contributor to the diversity of the ERC. Collaborating foreign faculty are expected to respect the diversity of the ERC's faculty and students and provide inclusive research and education environments. Because of the multicultural nature of the ERC, the participants have to be mindful that the language of discourse in the ERC's laboratories will be English to maintain an inclusive environment for all. The lead and domestic partner universities are likely to have programs—some of them NSF-funded (e.g., ADVANCE, etc.)—and offices that are established to impact a culture of inclusiveness at the respective campuses. These programs and offices must be leveraged by the ERC. Annual reports will include quantitative information on the demographics of the ERC personnel, benchmarked against engineering-wide averages. Reports also will include information on progress and impacts in developing a culture of inclusivity and success for all of the ERC's faculty and students.

6.4.1 ERC Functions/Staffing Plan

To cover the required functions of an ERC, each center will need to develop a staffing plan based on existing talents, available resources, and priorities; and this plan will change over time. An informal study of 17 ERCs during the 1990s indicated that center support staff ranged in number from 3 to 19. The average number of administrative support staff was 7 FTE (full-time equivalents). The center's position in the ERC life cycle from startup to maturity will affect staff size and demand for support may be especially high during start-up and key transition periods. Effective staffing is essential to the success of the ERC; yet the pressures of starting a new center may lead to hurried hiring. Take the time to perform an analysis of the necessary functions, budget, and space available. Consider the use of temporary vs. permanent employees, student assistants, and outsourcing to university and external services or consultants. Remember the need for flexibility in managing ERC resources. Review the ERC's master planning calendar and evaluate peak periods and functional conflicts. In drafting employment agreements, be prepared to balance the pressures of ERC growth and new program development against a simultaneous need for downsizing and reorganizing due to program shifts and funding changes over time. Understand that orientation and training for all personnel is an ongoing task and facilitates the development of a cohesive team. Below is a general outline of ERC functions to help guide the process.

General Management/Administration – The Director, Deputy Director, and Administrative Director work together with the research leadership team to manage center operations and execute the mission of the center. Responsibilities include:

Program Grant/Contract Administration and Compliance – Work with central university offices to comply with institutional regulations and to establish supplemental center policies to ensure compliance with NSF Cooperative Agreement terms and conditions.

Finances/Accounting – A dedicated staff position will be needed to provide sound financial management of the ERC. Development of budgets and management of the sources of support and expenditures are critical functions and are immediately necessary. Establish a financial reporting system that reduces risk and enables proactive management. Include staffing to handle high-volume, routine tasks such as daily accounting, purchase orders, invoice processing, data base upkeep, and payroll operations. Determine how financial reports and projections will be produced; internally, at the department level, or by central staff.

Human Resources – There are frequent organizational and personnel changes during the life span of the center, and it is an ongoing task to manage hiring, employee supervision, and delegation of responsibilities.

Information Systems – Staffing this function adequately is pivotal to a smooth-running center. As an ERC matures, computer systems save valuable time and enable a small, coordinated ERC team to handle growing demands and constant change. Some centers have added system administrators to their staff. Others rely on faculty, students, or existing staff to introduce new technology and train others. Find the expertise to design databases, develop management systems, collect data for reporting, and maintain a website. The lead or partner institutions may provide resources, or the center may need to hire external vendors.

Communication – There is a great deal of variability among existing centers in staffing this area. All centers must write, edit, and produce general and technical materials. Some centers have dedicated positions devoted to graphics, editorial, and/or multimedia/computer systems support, while others outsource the production of publications. Often, there are many professionals within the ERC able to make creative contributions to center publications.

Conference/Event Planning and Management – Site Visit, Research Retreats, planning and Advisory Board meetings all require extensive advance planning and attention to detail.

Infrastructure/ Facilities – Procuring and managing the physical space for the center is an intense startup activity but also an ongoing responsibility.

Administrative Assistance – Whether in a one-person office or a large staff, the individual who answers the phone and greets guests is the face and voice of the center. This first point of contact is tremendously important and the position demands professional judgment. Administrative assistance is required for all center functions and there are a multitude of routine tasks. Many centers have experienced problems in trying to find and keep good people in these posts; one solution is to supplement regular staff with student help.

Tip: When university students are employed, the center must determine what constitutes appropriate student involvement that does not interfere with their educational objectives. Duties vary from routine office tasks to dissemination of information on the web; technical assistance; coordination of REU and other educational outreach activities; and computer support.

Research Thrust Leaders – The leadership team includes faculty members from across the domestic partner universities responsible for leading and managing major research thrusts and testbeds of the ERC.

Industrial Collaboration and Innovation Ecosystem – The director for this function should be a staff member at the lead university who is responsible for developing the ERC's innovation ecosystem, marketing the ERC to industry/practitioners, gaining their financial support, developing and coordinating industrial/practitioner involvement with faculty and students, and managing the other partnerships for innovation and the translational research program.

University Education Program – The director of this function is a faculty member who is responsible for the development and execution of the ERC's university education program and is supported by other faculty, students, and staff in the execution of the program.

Student Leadership Council (SLC) – A student President and a student co-President lead the SLC, which is comprised of undergraduate and graduate students from all the partner universities. The SLC is responsible for coordinating activities in support of the ERC research, education, and technology transfer agenda.

Pre-College Education Program – The director of this function is a faculty or staff member who is experienced in pre-college education and is responsible for development and execution of the pre-college education program. The position is supported by faculty, students, and staff.

Diversity – The director of this function is a staff or faculty member who leads the development, implementation,

and assessment of the center's diversity strategic plan. This person will have proven success in recruitment and retention of underrepresented groups in engineering or STEM fields. This may be the sole role of this person within the ERC's Leadership Team or he/she may hold another role in the ERC as well.

CASE STUDY: How we staffed our administrative office

The ERC was in its first year when the AD began work nearly four months in. At that time, she was the only person doing all the administrative tasks associated with running the center. This situation was untenable. She worked with the Center Director to develop a strategy for effective staffing to manage the tasks. They reviewed the functions required to separate and identify the various categories and tasks. One of the most important and time-intensive functions was managing the expenditures. It was decided that the second admin person would maintain shadow budgets, manage expenditures, make and monitor purchases and invoices, provide financial reporting to the AD, university officials, and NSF, and provide database management and support. The AD would continue to work on all other administrative functions of the center. At that time, the University was going through a hiring freeze. Therefore, they were able to upgrade an existing position for someone already working with the Director on another grant as admin assistant. They worked with the university's Human Resources office to work this out and after some time, were able make this arrangement official. This position was supported by the College of Engineering and served as part of the institutional commitment.

(Submitted by Lois Dalton Deve, AD, NSF Engineering Research Center for Revolutionizing Metallic Biomaterials, at North Carolina Agricultural and Technical State University)

6.4.2 Position Descriptions

Many centers have found that existing university personnel titles and pay scales are outdated and do not fit their needs. It is smart to take the time to explore alternative titles and options, rather than accepting the most commonly used classifications. Review overall center functions and tasks before finalizing position descriptions. Institutional personnel experts should be able to offer guidance on employment categories/titles and they will ensure that the university complies with laws and regulations regarding recruiting, hiring, conditions of employment, and termination. The university's personnel policies should also address regulatory issues such as equal employment opportunity, nondiscrimination, conflict of interest, sexual harassment, and drug and alcohol abuse. Determine essential qualifications before you begin to recruit and screen individuals.

Tip: If you are having difficulty with your university's Human Resources or Compensation offices in classifying positions or allowing appropriate salaries because there are few, if any, similar positions on your campus, check with the ADs at existing ERCs. They may be able to provide you with comparable job descriptions or salary ranges in order to help you convince your university of the appropriate levels of compensation to match ERC needs.

Tip: Include allocations for both staff development and computer upgrades in the management budget. Be sure to stay within university guidelines in rewarding or paying center staff; don't develop your own pay scales outside these guidelines.

6.4.3 Departmental Interaction and Coexistence

Establishing the center's identity as a unique entity on campus is important. Problems can arise when both the home department and the center vie for individual loyalties, resources, or recognition. The ERC must build a separate identity, without competing with participating departments. Initial decisions regarding financial management and accounting, paperwork flow, and the levels of responsibility and interaction with departmental administrative staff will set the tone for the establishment of the center on campus.Alternative appointment strategies may need to be considered, since most of the ERC funding is considered "soft" (not backed by continuing state allocations or private endowments). Decisions regarding new hires of tenure track faculty will require cooperation and management of cost share. The department, the center, and the university should understand that NSF will ask each center to examine the progress of young faculty towards tenure. The center may have the option to appoint non-faculty staff directly within the ERC or through participating academic departments. Consider which approach will better enhance cross-disciplinary cooperation within the institution and evaluate the operational and resource issues. Also keep in mind that the ERC can be a powerful mechanism for fostering

interdisciplinary research at the lead and partner academic institutions.

6.4.4 Personnel Records and Reports

A system to collect demographic and other personnel data over the life of the center is essential. A database is the easiest way to maintain the information, create historical reports and upload yearly statistics to the ERCWeb database. Affiliations and classifications change over time, so the system should be flexible and indicate start and end dates for each person. Remember that all demographic data must be submitted voluntarily by the individual and treated as confidential. Each institution will have policies in place regarding compliance matters such as Effort Reporting, Conflict of Interest, and Responsible Conduct of Research and it's important to understand those requirements.

Tip: Keep updated lists of personnel you interact with at each institution. These lists should include financial, sponsored programs, departmental staff, and higher-level administrators such as Department Heads, Deans, Chancellors, and Provosts.

Key Definition

ERC Personnel – individuals who are directly involved in executing activities funded by the center. They may be paid or unpaid and there are no minimum time requirements, but the type of involvement must be documented.

Take the time to make sure all participants understand the definition of ERC Personnel and provide them with an easy way to keep the information up to date. Below is the minimum required information needed for each individual:

Table 1. ERC Personnel Data Requirements

First Name
Last Name
Email address
Citizenship/Country
Institution/Organization
Role – Thrust and Project Association, NSF Classification and Personnel Type
Department
Discipline
Title within Institution

Gender
Disability status
Ethnicity
Race

See Attachment 6.5 – ERC Classification/Personnel Types

Tip: Respect the confidentiality of personnel data and indicate that the information you collect will be used only in the aggregate for NSF reporting purposes. Explain that statistical reports do not include data about any particular individual, and that the information is available only to administrative staff.

Be sure to track the employment history of ERC students when they graduate. Maintain a database or spreadsheet with the following additional fields for students:

Table 2. Additional ERC Student Data Requirements

Student Faculty Advisor
Student Graduation Date – Year
Student Graduation Date – Month
Degree Type-BS
Degree Type-MS
Degree Type-PhD
Name of Hiring Organization
Type of Hiring Organization
ERC Member Firm
Other US Industry

Other Foreign Industry
Government
Academic Institution
Other
Undecided or Still Job Hunting

Tip: Record the home institution for REU students, rather than the institution where they are conducting research.

Tip: When initially collecting demographic data, include a statement requesting permission to contact participants in the future for program evaluation and study. This is referred to as "future use consent."

6.4.5 Advisory Boards

Each ERC is supported by advice or guidance from external and internal boards and councils and the leadership team works to create and maintain relationships with the following boards:

Scientific Advisory Board: The Scientific Advisory Board (SAB) is comprised of outside experts who are selected by the ERC Leadership Team and meet collectively as a board at least once a year with the center.

Industrial/Practitioner Advisory Board: The Industrial/Practitioner Advisory Board (IPAB) will be comprised of 10 representatives of member companies/agencies/hospitals who meet collectively as a board twice a year to advise the ERC's leadership team and meet with the NSF site visit team. The IPAB will have a chair who organizes the board's activities in coordination with the Industrial Collaboration and Innovation Ecosystem Director and the Center Director.

Internal Academic Policy Board: Administrators from the lead university, including the Dean of Engineering, who meet collectively as a board with the ERC Director to coordinate ERC plans and policies with departmental and university leaders.

Council of Deans: Led by the Dean of Engineering from the lead university, the Council of Deans from the lead and partner academic institutions meets collectively as a board to provide administrative support of the ERC and to help facilitate the ERC's research, education, and innovation efforts across the lead and partner campuses.

Source URL: https://legacy.erc-assoc.org/best_practices/64-financial-management