Reducing Risky E-mail: There Is No Such Thing as E-Mail Privacy  
By Lawrie G. Robertson and Robert Unger  
Contrary to widespread assumptions, traditional privacy protections do not apply to electronic mail communications produced in a corporate setting. E-mail content can subject employers to legal exposure. Therefore, the law allows employers' access rights to supersede employees' privacy.

Proposal Development in a Self-Funded Research Organization: The Research Administrator's Role  
By Charles Whitaker, CPA  
The goal of any self-funded research organization is to win grants and contracts. At the Energy and Environmental Engineering Center (EEEC) at the Desert Research Institute (DRI), research administrators play an important role in working with researchers to develop competitive proposals.

Improving the Quality of Grant Proposals—A Grantmaker’s Perspective  
By Armanda Famiglietti  
What can grantmakers do to improve a funded project’s chances for success? Two years ago, the Carnegie Corporation of New York asked itself that question. We concluded the best method to improve a project’s chance of success was to improve the quality of its proposal.
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Research Administration and the Culture (and Subcultures) of Higher Education ........................................... 25
By John Lankford, PhD
The culture within contemporary higher education—including its behaviors, attitudes, values, institutions, language, and ideology—can help us understand some of the complexities involved in electronic research administration (ERA). Our professional affiliations and relationships with sponsors also can affect how ERA is implemented at our institutions.

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The winter 1997 issue of the SRA Journal is being published in electronic form in response to cost-saving measures adopted in October by the SRA Board of Directors. Although the Journal will be published as a print publication only twice this year, each issue will be a double issue. This strategy will allow the Journal to provide a consistent level of service to SRA members and maintain its identity as a quarterly publication.

Any challenge to an established methodology can be unsettling, but change also can create an opportunity for improvement and growth. I believe the SRA Journal’s unavoidable foray into the world of electronic publishing will, in retrospect, turn out to be serendipitous.

Each new issue will be posted as a PDF file on SRA’s public page. Previous issues will be stored as a feature on the “Member's-only” page as new issues become available. At the end of the year, SRA members will be able to go to SRA’s award-winning Web site to read and download all four issues of the Journal. Eventually, SRA members will be able to search past issues of the Journal electronically.

Our first electronic issue also reflects some changes in the visual appearance of the Journal. The format of the inside pages has been redesigned to bring the Journal in line with state-of-the-art publications of peer organizations. The cover also will be redesigned when the Winter 1997/Spring 1998 issue is published in printed form.

As SRA explores the benefits and uncertainties of a new “ERA,” the SRA Journal will continue its commitment to scholarly discourse and the exchange of ideas and best practices among research administrators. I invite you to comment on our first electronic issue and the new format of the Journal. As always, I welcome your ideas and suggestions on how the Journal can better meet the needs of SRA members.
Contributors

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INTRODUCTION

Today's professionals are required to process, analyze, and use ever escalating amounts of electronic communications. They are challenged to determine how to handle and sort this information. They must determine its value, move needed information quickly to others, and decide which information will be stored locally for future use. They are challenged to perform these tasks in a manner that supports effective working relationships and their employer's interests. Meanwhile, in the current environment of lawsuits focusing on corporate liability, some lawyers' sole practice is to search corporate files for evidence of careless and damaging electronic communications.

FEATURES

REDUCING RISKY E-MAIL: THERE IS NO SUCH THING AS E-MAIL PRIVACY

Lawrie G. Robertson and Robert Unger

ABSTRACT

Contrary to widespread assumptions, traditional privacy protections do not apply to electronic mail communications produced in a corporate setting. E-mail content can subject employers to legal exposure. Therefore, the law allows employers' access rights to supersede employees' privacy. This article identifies communications privacy issues. It concludes with considerations and recommendations for more effective and secure electronic mail communications that can help minimize potential misunderstandings and legal exposure.

Robertson, LG, Unger R, “Reducing risky e-mail: There's no such thing as privacy.” Reprinted with permission from Journal of Registry Management, August 1996, Volume 23, Number 3, pp. 102-106. Copyright 1996, National Cancer Registrars Association. This article was re-edited with permission according to SRA Journal style guidelines.

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Acknowledgment: In addition to securing information from several sources and World Wide Web sites, many of the ideas for this article were offered by John Jessen (attorney at law, Electronic Evidence Discovery, Inc., Seattle, WA). Additionally, thanks to Brent Blumenstein, PhD, and Robert J. Robbins, PhD, who provided a technical computing review; and William R. Hickman, JD, who provided the legal review.
Most of us view electronic mail (e-mail) as a quick, cheap, and efficient method of moving information from our desktop to others worldwide. Typically, we give little thought to the potential effect of these communications on recipients, employers, or ourselves. Most employees assume these electronic communications are private, benign, and protected from snooping.

In truth, electronic communication is a cold medium capable of doing damage. It lacks the nonverbal effect of face-to-face discussions or the inflection cues of telecommunications. As such, it carries the potential for unintended consequences (erroneous addressing, embarrassing forwarding of confidential information, content that is misinterpreted or perceived as harassment, unanticipated recipients). When used carelessly, e-mail can result in misunderstandings, or expose the employer to legal action. Therefore, as a professional in research administration, you must understand: (a) the potential effect of your electronic communications, (b) your obligations to protect your employer from legal exposure, (c) the limits on your legal rights to privacy in your corporate communications, and (d) steps you and your employer can take to minimize risk while using this new communications tool.

**Privacy—Assumptions Versus the Law**

Knowing e-mail's potential harm and your limited privacy rights starts with understanding the medium's privacy laws.

Our culture values and expects privacy in written communications. This has led many Americans to believe that, like a sealed letter, e-mail communications are private. Accessed by password, users often mistakenly view e-mail as a closed communication between a sender and a receiver. In reality, e-mail is more analogous to a postcard—the author has little control over who reads or receives it. Because it is produced with corporate resources, transmitted e-mail content is considered a corporate communication for which the corporation can be held liable. Thus, the law permits employers to safeguard their interests through permitting full access to employee e-mail.

Historically, the right to privacy has been as central to the American culture and spirit as that of self-determination and rugged individualism. Earlier this century, Judge Louis Brandeis described privacy as the “right to be left alone” (Reagan, 1986).

While the privacy assumption may exist within the nation's spirit, the Constitution does not specifically refer to a right to privacy. Instead, the Supreme Court has accepted arguments that the right to privacy is
implied. This was first noted in 1966 when the Court held that “the First Amendment has a penumbra where privacy is protected from certain governmental intrusion” (Cushman, 1966). Since then, the Court has focused on the Fourth and Ninth Amendments to assert privacy rights. The Ninth Amendment affirms that the “enumeration in the Constitution, of certain rights, shall not be construed to deny or disparage others retained by the people” (Emanuel, 1986). The implied right to privacy of one’s person was promoted in the Supreme Court’s interpretation of the Fourth Amendment, which stipulates that the people have “the right to be secure in their persons ... against unreasonable search and seizure ...” (Alderman & Kennedy, 1995).

Without a precise Constitutional definition, the right to privacy has evolved as a melange of legislative and judicial actions in reaction to issues. Rather than defining privacy as a fundamental right, the government has defined the right to privacy through selective laws and judicial decisions. The lack of any consistent omnibus approach to privacy law means that every new challenge to privacy prompts individualized initiatives, with separate policies and decisions being drafted for banking, medicine, research, credit, criminal records, personal communications, etc.

Each new technological development—telephone, cellular phone, e-mail, Internet, and each new use of personal information—spawns a new challenge to our assumptions of privacy. Privacy rights, rather than being defined, are characterized by the legislature and courts relative to the use of a specific technology, a precise use of personal information, a particular decision, or other narrow activity. As such, privacy protections within current law consistently fail to keep pace with new technological developments and uses of personal information. The legislature and courts are constantly challenged to define which competing rights—sender, recipient, employer, or damaged party—are preeminent within electronic communications.

As new technologies have evolved, the courts and Congress have not clearly and consistently defined the balance between individual privacy rights, the rights of the harmed recipient, and the corporation’s right to protect itself from legal exposure. Despite the codification of privacy in statutory and case law, few privacy protections exist with respect to electronic communications, particularly in the corporate setting. Once thought to be beyond the reach of the state, personal privacy rights have been challenged by the advent of rapidly evolving technology.

In 1986, Congress passed the Electronic Communications Privacy Act (ECPA). This Act expanded the protection of electronic communications beyond the narrow provisions outlined for the telephone under wiretapping laws. ECPA covers a range of topics and media for protecting electronic communications. With ECPA, Congress intended to update existing laws and to extend privacy protections to cover any electronic communications (Patrick & Sachs, 1993). Previously, the laws were limited to specific technologies, such as the telephone.

Court decisions, at times contrary to ECPA’s legislative intent, have determined that employers and the government may access stored elec-
ronic communications with impunity. According to a Macworld report in 1993, 22% of companies surveyed claimed to have searched employee computer files, voice mail, e-mail, and other electronic communications. The figure rose to 30% for companies with 1,000 or more employees (Alderman & Kennedy, 1995).

Two recent court decisions significantly limited the Act’s intended effect. In Shoars v. Epson of America (1994), the trial court’s ruling noted that ECPA exempts monitoring e-mail for employers who provide e-mail systems (Alderman & Kennedy, 1995). The exception under ECPA originally pertained to internal corporate systems, but outside e-mail eventually enters the internal system, so companies are free to review e-mail messages no matter their source.

Another blow to privacy expectations under ECPA came with Steve Jackson Games v. US Secret Service (1994). In this case, the court narrowly defined “protected electronic communications” as messages in transport. The court found no violation of ECPA for accessing stored communications, as happened when the Secret Service seized Steve Jackson’s hard drive containing unread e-mail messages from a bulletin board service he operated (Johnson, 1995).

As the courts continue to approve of communications surveillance, recent legislation may result in increased monitoring of e-mail. The recently overturned Communications Decency Act, part of the 1996 Telecommunications Bill, threatened to force on-line content and service providers to censor “indecent” material (Electronic Frontier Foundation, 1996). This Act potentially increased the liability of employers and others who provide information or access to the Internet.

In effect, federal law continues to provide protections for wire communications, such as the telephone, where many monitoring restrictions apply. However, despite electronic communications being protected while in transport, no prohibitions seem to apply to employers, or the government, to monitor e-mail systems or stored communications (Eckenwiler, 1995). This exemplifies the continued struggle between the selective versus omnibus approach to defining the right to privacy, and using personal information.

**CORPORATE COMMUNICATIONS—LIABILITIES, DISCOVERY, AND EFFECTS**

Today’s computer-centered environment places a premium on speedy communications and getting on with the next task. Yet, when communications are careless, rushed, insensitive, or transmitted with minimal consideration as to how the recipient might react, misunderstandings or legal exposure can result. In some cases this result is bruised feelings or a damaged relationship; in others, careless content provides the smoking gun for a successful lawsuit.

According to computer sleuth John Jessen, “Once you hit enter all electronic data is out of your control. You don’t know where it’s going. You don’t know how it’s been stored or backed up. The only thing you control is what you type in.” Attorney Jessen, who directs the Seattle-based Electronic Evidence Discovery, Inc., has searched corporate computer files in more than 1,000 cases with poten-
ially incriminating discoveries leading to settlements in all but four cases (Levine, 1995).

Most computer users erroneously assume that deleting a record or file removes it from the disk. In fact, it only removes the file name and protection from overwrite, leaving the data residing on the disk. Even using disk erasing utilities, fragments of the file can remain. These fragments can be discovered and pieced together to document wrong-doing. Corporate backups often provide investigators’ most useful evidence. If a careless e-mail is sent at 5:00 p.m. one day, read with horror and deleted at 7:30 a.m. the next, the midnight automatic system backup has already saved and archived the damaging communication—ready and available for the cybersleuth’s discovery.

Forensic software analyst Andy Johnson-Laird notes, “It’s impossible to kill a document these days....Data is like an inkblot. It leaves stains all over the place” (Peyser & Rhodes, 1995). Once it is stored on a backup tape, forwarded, or posted on a computer bulletin board, that communication can be read by anyone, including a member of a jury. Several components of normal corporate computing provide rich sources for electronic evidence discovery. Some network operating systems, such as Novell Netware, store deleted directories to aid in data recovery. Often, this stored date-stamped information becomes part of the corporate off-site three-year backup archive. Some less-sophisticated e-mail software does not identify modifications (via highlighting) in a forwarded message, or attach comments forwarded with the original message, which can give a different impression than the author intended.

Once electronic evidence discovery is underway, the effect on the organization can be devastating. Upon issuing a subpoena, corporate computing can grind to a halt while the cybersleuths review the contents of backup tapes, network drives, and individual employee PC hard drives. Because the courts want to ensure evidence is not tampered with or destroyed, these searches can lock up corporate systems for days. Generally, the courts burden the defendant with the search costs. Courts also generally assume that data stored on home computers used for work are corporate property liable to subpoena and search. Because of the potential for liability action, the courts have found that employers have a right to retrieve employee files without their consent, and this content is not protected under the provisions of the Electronic Communications Privacy Act (18 USCS Section 2511 (3) a & b) (Labeledz, 1995).
RECOMMENDED STEPS FOR PROTECTION AND EFFECTIVE COMMUNICATIONS

Since anything produced employing corporate resources is viewed as corporate property, many organizations protect their interests by spot-checking mail or doing key-word hypertext searches for potentially damaging messages, or to identify harassing behaviors. This text tracing can be quite pervasive, as one employee discovered. He innocently, but carelessly, wrote a co-worker about having to euthanize his female dog. Due to the terms used, the next thing he knew, police were hauling him out of the office in handcuffs under suspicion of plotting to kill a female co-worker.

Dynamic technology and unclear privacy protections can leave the normal e-mail user confused over how to best use this medium with a minimum of liability. What steps can you and your organization take to reduce your exposure? Corporate and individual exposure reduction steps include:

1. Assessing points of potential exposure.
2. Increasing security of communications.
3. Establishing specific e-mail etiquette guidelines and procedures to reduce misunderstanding and exposure.
4. Educating users to sound e-mail principles.
5. Solving problems face-to-face.

Possible steps to reduce exposure and careless communications can involve the following:

1. A Corporate Communications Assessment
   Encourage your computing and legal professionals to examine your institution’s data management and retention policies and procedures in response to the following questions:

   • What are your institution’s major points of legal exposure vulnerability? (Preparing policies and procedures helps to identify these points.)
   • Do you have any data management and retention policies and procedures? If so, how well have they been communicated throughout the organization and understood by employees?
   • What information is backed up, how frequently, and why? Does your company exclude e-mail post-office servers its data back-ups?

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   • Do you have any data management and retention policies and procedures? If so, how well have they been communicated throughout the organization and understood by employees?
   • What information is backed up, how frequently, and why? Does your company exclude e-mail post-office servers its data back-ups?
• How are back-ups archived and how long are back-up data retained? Is this done in a systematic manner?
• How do you separate data that must be kept for prolonged periods from data that can and should be destroyed every 90 days or less?
• Are these issues discussed within your institution? Did you secure a legal expert in this field to help draft or review your institution’s computer data management and retention policies and procedures?
• If your institution received an ex parte court order or subpoena relating to an e-mail content search, how long would it take to produce the required information? What would the per-day cost be if your entire corporate computing system were unavailable to users?
• Before a person is given e-mail access, do you require any training or distribute any information on the institution’s policies, procedures, and e-mail etiquette?
• How secure is your computer data? Do you have effective security policies in place?
• Does your institution’s key opinion leaders and decision-makers strongly endorse and financially support your training and procedures for data security, data management, data retention, and data handling?

2. Corporate Security Procedures

Work with your computing professionals to develop and implement effective security procedures:

- Provide a plan for regularly purging older e-mail directories at the source and backup levels.
- Use separate backup tapes for general work files versus the post-office server backup, or don’t back up post-office server content.
- Require passwords that automatically expire every 90-120 days. Encourage the use of mixed alphanumeric passwords that are not easily identified with the user (e.g., *653$BELL).
- Limit access to works in progress by engaging automatically a password-protected screen saver when the computer keyboard is inactive for 15 minutes or more.
- Discourage saving e-mail messages to personal hard drives; rather, encourage copying and pasting only those sections of the text absolutely required for future use.
- Promote the regular defragmenting and compressing of personal and network hard drives and include wiping the endspace via a utility program. This rewrites the hard drive, overwrites deleted files, and wipes clean the remaining residue beyond the compressed files.

3. Etiquette Standards

Develop, promote, and educate users to employ the following e-mail etiquette standards (Reid, 1995):

- Keep e-mail paragraphs and messages short and concise, but write with care.
- Avoid abbreviations and acronyms and emphasizing brevity over clarity.
• Focus on one subject per message and always include a clear subject title for the message; that way, the user can locate the message quickly and decide when it needs to be read.
• Cite all quotes, references, and sources and respect copyright and license agreements.
• Clarify who sent what narrative by placing your name at the end of your note—a standard signature footer.
• Your signature footer should include your name, position, affiliation, and Internet address(es), and should not exceed 4 lines. Optional information could include your address and phone number.
• Capitalize words only to highlight an important point or to distinguish a title or heading. *Asterisks* surrounding a word can be used to make a stronger point. Capitalizing whole words that are not titles is generally termed SHOUTING!
• Limit line length and avoid control characters that result in choppy messages. Margins should not exceed 70 characters in width.
• Do not assume that text highlighted in a different color (to indicate revisions) will be highlighted or multicolored on the recipient’s screen.
• Do not use hard-to-read colors. Stick with white on black or white on blue (studies have indicated that white or yellow characters on a blue background are the easiest to read).
• Be considerate of protocol and process; don’t skip over those above you in communicating to the top of the organization chart.
• Do not use the institution’s network resources for your private commercial or political concerns. Treat e-mail as if it were on your organization’s letterhead. Your e-mail is associated with your institution and can affect its reputation.

4. *Individual Care and Judgment*

E-mail is easily forwarded—it is like a postcard, not a sealed letter. Assume every message will be copied and forwarded to someone else. Adopt the following steps to avoid unintended consequences (Reid, 1995):

• Be professional and careful about what you say about others—try replacing the other’s name with yours and see how it feels. Consider how you would react if you received the same content.
• Be careful when using sarcasm and humor—remember, e-mail is a cold medium—what is funny to one person may be offensive to the recipient.
• Use common sense and provide explicit instructions when you want to limit distribution of an e-mail message.
• Ensure that your e-mail is prepared to the same professional standards as other corporate communications. Be clear and objective.
• Assume your next e-mail will appear on the front page of tomorrow’s newspaper and edit it accordingly.
• Never write a message when you are angry about something or with someone. Have the courage to talk personally when you have calmed down.
• Sleep on a message, write it carefully, and write difficult messages early in the day.
• When sending confidential information, take extra care in addressing the message.
• Consult with the author before forwarding a potentially sensitive message.
• If you have sent something you regret, call the recipient to apologize, and request that they delete the message; do not use e-mail to correct your error or apologize.

5. **Face to Face Is Best**

Discuss complex, emotionally charged or confidential issues face-to-face.

6. **Other Safeguards**

Given the unsettled swirl of privacy guidance from federal and state laws, judicial decisions, and corporate policies, definitive resources are available to e-mail users to safeguard communications:

• Anonymous remailers can be used to strip the sender's name and address from e-mail messages, allowing notes to be passed anonymously to other users or newsgroups. One of the most popular remailer sites is in Finland. Users may send a message to help@anon.pen.etifie for more information (Anthes, 1996).
• Another site, the Anonymizer Home Page (http://anonymizer.cs.cmu.edu:8080/), facilitates anonymous surfing on the Internet. Despite contrary perceptions, every move a user makes on the World Wide Web can be tracked and recorded. Many sites compile user statistics.
• The best method for securing electronic communications is encryption. Users may consider several freeware and shareware tools for encryption and digital signatures. Pretty Good Privacy (PGP), which received an award from the Electronic Frontier Foundation, is one freeware program available on the Internet. However, these tools are not interoperable, so sender and receiver must use the same programs.

**CONCLUSION**

Privacy in electronic communications is extremely limited and favors corporate interests over the individual, especially when the individual has not exercised reasonable judgment. As in any form of communication, clarity and care are paramount. When used appropriately, e-mail is a valuable tool for efficient and economical communications. When used carelessly, it can lead to embarrassment, or needless misunderstandings. It can even bring an organization to its knees.

(References appear on page 12)
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**Case Studies**

**Proposal Development in a Self-Funded Research Organization:**

**The Research Administrator’s Role**

Charles E. Whitaker, CPA

**Abstract**

The goal of any self-funded research organization is to win grants and contracts. At the Desert Research Institute (DRI), research administrators play an important role in proposal development. This article discusses how research administrators affiliated with the DRI’s Energy and Environmental Engineering Center (EEEC) work with researchers to develop competitive proposals. The research administrator’s role involves eight tasks: (a) understanding the nature of the principal investigator’s (PI’s) research, (b) informing the PI of pending funding opportunities, (c) promoting positive relationships between the PI and research sponsors, (d) helping the PI decide to apply for a grant or contract, (e) assisting the PI with the financial aspects of the proposal, (f) recording the outcomes of the PI’s proposals, (g) ensuring that the PI’s proposal is complete and complies with both internal policies and sponsor requirements, and (h) helping the PI meet proposal deadlines.

**Introduction**

Successful proposals are the lifeblood of any self-funded research organization. The Desert Research Institute (DRI), a self-funded research organization associated with the University and Community College System of Nevada, receives only 10% of its funding from the state. The remainder of the DRI’s support is obtained from grants and contracts.

The DRI has five research centers. The focus of the Energy and Environmental Engineering Center (EEEC) is “current and future human impacts on the environment, especially air...
quality, and the technology that can be applied to mitigate these impacts.”

Each year, the EEEC prepares approximately 100 proposals. These proposals generate more than $5 million in grants and contracts from federal, state, and local governments; private firms; and international organizations. For a center with only 25 principal investigators (PIs), this is a relatively large number of proposals. Given the importance of funds generated from these proposals, the EEEC’s proposal efforts must be efficient and effective.

Research administrators and PIs associated with the EEEC have learned that mutual cooperation often is the key to funding success.

Research administrators and PIs associated with the EEEC have learned that mutual cooperation often is the key to funding success. The following eight tasks define the research administrator’s role in the proposal development process.

**Task One: Learn About the PI’s Research**

To help a PI develop a successful proposal, the research administrator must understand the PI’s research. This is especially important for PIs involved in highly technical research. Research administrators can learn about the research being conducted by PIs by: (a) reading the PI’s research publications, (b) attending the PI’s presentations and workshops, and (c) interviewing the PIs about their specific research interests.

At the EEEC, research administrators work with PIs to prepare a written description of the organization’s major research activities. This description enables EEEC research administrators to identify potential sponsors, prepare cost proposals, recommend pricing decisions, and defend or explain the PI’s needs to others. It also is useful for forecasting future funding opportunities and equipment and personnel requirements. By taking this additional step, research administrators at the EEEC enhance their credibility with the PIs and clarify the research administrator’s role within the center.

**Task Two: Notify PIs of Funding Opportunities**

Increasingly, government agencies are relying on the Internet to inform bidders of requests for proposals (RFPs). Consequently, the task of searching the World Wide Web for funding opportunities has become an important part of the research administrator’s role at the EEEC.

The EEEC currently uses e-mail to notify PIs that an RFP has been
received. The EEEC plans to expand this service. By using Sponsored Project Information Network (SPIN) and reviewing specific Web sites, the EEEC can send out a weekly announcement of all new RFPs. PIs with matching research interests can be sent a complete copy of the RFP.

In addition, research administrators at the EEEC are developing a directory of sponsors. The directory will contain the following information for each sponsor: (a) the type of research funded, (b) addresses used to announce funding, (c) the names of personnel who make funding decisions, and (d) the PIs who have been funded by these sponsors in the past.

**Task Three: Help PIs Develop Positive Relationships with Sponsors**

Research administrators should make an effort to encourage positive relationships between PIs and sponsors for several reasons. One of the main goals of the awarding organization is to minimize the risk of failure when awarding research funds. From the perspective of the awarding agency, failure occurs when:

1. Research outcomes are late and of little use.
2. The research is of such poor quality that it is useless or of limited value.
3. Even though the research may be excellent, the research findings are not accepted widely because the credibility of the PI is questioned.

If one or more of the above occur, the sponsor will consider the research funds wasted. Such an outcome will do little to enhance the career of the staff who were responsible for making the award, or the future funding prospects of the agency that failed to deliver. For this reason, funding agency personnel will tend to give awards to a known PI with a good performance record, rather than someone unknown to the funding agency.

Funding agency personnel also are more likely to ask a PI to comment on a draft RFP if the PI has developed a solid working relationship with the agency. According to federal acquisition regulations (FAR), “prior to issuing the RFP, the agency will encourage participation by using draft solicitations, pre-solicitations conference, and other means of stimulating the PI’s involvement during the design and development in recommending the most appropriate application and tailoring of contract requirements” (FAR 7.105(a)(8)(i)).

Typically, the time between the date the RFP is issued and the date proposals are due to the funding agency is brief. Once an RFP has been issued, the awarding agency must cease all informal discussions with the outside world. Any inquiries regarding the RFP usually must be in writing, and the awarding agency’s responses must be shared with all parties who have expressed an interest in submitting a proposal. Therefore, once the RFP is issued it is usually too late to engage the awarding agency in an in-depth dialog regarding the proposed work. Instead, the PI must rely on the RFP for information on the funding agency’s requirements.

PIs who help plan the RFP and receive drafts of the RFP before it is issued have an edge over others competing for the same award. They will know exactly what the awarding
agency wants, and will prepare a proposal accordingly. Given the benefit PIs can derive from being involved in a sponsor’s acquisition planning, research administrators should ensure funds are available to support this type of work.

**Task Four: Help PIs Decide If They Should Respond to the RFP**

At a time when most research organizations are facing tighter budgets and greater competition for external funding, it is critical that research administrators have some way of deciding whether their agency should commit funds to preparing a proposal. This can be one of the most important contributions a research administrator makes to an organizational unit (department, center, or division). It is interesting that, in many organizations, it takes more time to obtain approval to spend $25 than it does to prepare a proposal—a much more expensive activity.

Before funds are spent to prepare a proposal at the EEEC, research administrators ask the following questions:

1. Is this RFP related to the mission of the department or institute?
2. Will winning the grant or contract be beneficial to the organization?
3. What will it cost to prepare this proposal, and is this cost reasonable given the chances of winning the grant or contract?

Research administrators affiliated with the EEEC assess a proposal’s chances of funding first by asking the PI how they learned about the RFP. A personal call from a program officer may be more promising than an announcement mailed to many agencies. It also is important to know if other agencies will be competing for the grant or contract, and if a prior relationship exists between any one of these agencies and the sponsor. Finally, research administrators at the EEEC determine what it will take, from a scientific and financial viewpoint, to prepare a winning proposal. For example, research administrators at the EEEC might ask a PI how the technical superiority of the EEEC will be demonstrated in their proposal.

To determine the preparation cost of a proposal, research administrators at the EEEC ask:

1. Who will be working on this proposal?
2. How many hours, days, or weeks will they need to spend on this proposal, and what will it cost the institute if a proposal is prepared?
3. Are the required staff members working on other projects, and will working on this proposal interfere with these assignments?
4. How much funding is anticipated from this proposal, including direct labor, equipment, and indirect cost? Is cost-share mandatory? (The research administrator has to take into account the type of revenue that will be derived from this effort, especially if there are competing requests to fund proposals and not all will be approved.)
5. Must additional equipment be purchased to perform the tasks described in the proposal?
6. Does the institute possess the facilities and personnel (scientists, technicians, etc.) needed to do the tasks specified in the RFP?
(Before committing funds to prepare a proposal, it is critical to know if the agency can do the research called for in the RFP.)

PIs at the EEEC are sometimes reluctant to spend time justifying their interest in preparing a proposal. However, the EEEC’s approval process helps the PI decide whether to pursue an RFP. This ensures that the institute’s funds for proposal development are well spent.

**Task Five: Help the PI With the Financial Aspects of the Proposal**

Each proposal has a cost and price. The cost of the proposal is the estimated expenditures (including indirect cost) that will be incurred by performing the work in the proposal specified. The price is the amount charged to the sponsor. For nonprofit organizations, the price offered should equal the estimated cost. Unfortunately, this is not always the case.

As the competition for research dollars becomes more intense, research sponsors become more sensitive to the price they must pay for the proposed effort. Consequently, research organizations find that they must price a proposal lower than the actual cost of performing the research to win a grant or contract.

This situation is relatively new to many research organizations. In the past, when funding for research was not as competitive, proposals were priced according to estimated costs. Now, with budgetary limits specified in many RFPs, research organizations must decide if they are prepared to do the work required for less than the estimated cost of completing the research.

The EEEC has specific rules when any proposal is to be priced below cost. The first rule is that the pricing of any proposal requires approval from the institute’s chief financial officer. The PI should help determine the cost of a proposed research project and assist the research administrator to justify the price of the proposal if it is less than the cost estimated. However, the final approval of any pricing decisions must reside with the institute’s top financial management personnel.

The second rule calls for a sound reason for pricing the proposal below cost. At the EEEC, acceptable reasons fall into the following three categories:

1. **Strategic.** The EEEC wants to enter a new area of research or maintain its dominance in a particular research area.
2. Competitive. Multiple parties will be submitting proposals, and price will be a significant consideration in awarding the grant or contract.

3. Financial. It is important to win this award to maintain the salaries of support personnel needed to carry out critical research.

Research administrators at the EEEC assist greatly in this area. By working closely with a PI, research administrators can determine if there is a legitimate strategic, competitive, or financial reason for pricing the proposal below costs.

If price reductions must be made, the sponsor should be made aware of these costs. First, it is a good marketing tool, as every agency wants to maximize the amount of research from its funded outlays. Second, it is a good way of communicating to the sponsor that this research is sufficiently important to the PI and his or her institution that they are willing to contribute financially to the research effort.

PIs are in the best position to estimate the costs of performing the tasks described in the RFP. They have the technical knowledge and experience to know what is involved in conducting the research and the cost of each task. However, research administrators at the EEEC are actively involved in assessing the reasonableness and completeness of project costs, and ensuring that any rates used are current and accurate.

At the EEEC, the research administrator makes it possible for the PI to spend more time on the technical portion of the proposal.

At the EEEC, research administrators who become familiar with a PI’s work can assume more responsibility for costing the PI’s proposal. By preparing the financial spreadsheets, the research administrator makes it possible for the PI to spend more time on the technical portion of the proposal.

**Task Six: Keep Record of the PI’s Proposal Efforts**

The research administrator is in a unique position to monitor a PI’s proposal success. To do this, however, the research administrator needs to understand the type of research services offered by the organization.

Research conducted at the EEEC falls into seven major categories: (a) energy, (b) ambient air and source sampling, (c) chemical and physical analysis, (d) emission inventory, (e) field study design and management, (f) modeling and impact assessment, and (g) quality assurance. Proposals submitted in these areas are recorded.

Each proposal record at the EEEC contains information on (a) the type of research (one or more of the above categories), (b) the cost of performing the tasks described in the RFP, (c) the PI’s estimate of the number of labor hours required to perform the tasks, and (d) the actual labor hours expended.

The research administrator is responsible for maintaining these records, and for ensuring that all costs are accurately recorded. This information is used to evaluate the PI’s proposal efforts, and to determine the cost efficiency of the research effort.
major research areas); (b) the name and type of funding agency (federal, state, local government, private); (c) the probability of the proposal’s success; (d) the cost of preparing the proposal; (e) information on how the PI learned about the RFP (SPIN, CBD, mail, call from sponsor); (f) the history of the PI’s work with the sponsor; and (g) whether the proposal was in response to a competitive solicitation or was a sole source request.

This information helps research administrators at the EEEC objectively assess: (a) the organization’s funding history (type and level of funding) in each research area; (b) the ratio of proposed research dollars to funded research dollars by area; (c) the proposal preparation costs of successful proposals in relationship to the costs of rejected proposals (sorted by research area and by sponsor); and (d) the ratio of proposal costs to the funding received by each PI.

For a complete proposal analysis, it is necessary to find out why a proposal was rejected. This information can help the PI and the organization succeed in the future. At the EEEC, research administrators seek to answer these questions:

1. Was the proposal poorly written or hard to follow?
2. Did the proposal fail to address the RFP’s statement of work?
3. Was the budget too high?
4. Why was another organization selected to perform this research?

No one likes to dwell on setbacks, and some PIs take it personally when a proposal is rejected. Nevertheless, you must learn from disappointments so mistakes are not repeated with the same unfortunate results.

**Task Seven: Ensure the Proposal is Complete**

Research administrators at the EEEC are responsible for completing the administrative and financial sections of a proposal. This task begins with reading the RFP. The RFP gives the research administrator a general understanding of the tasks required to do the research and basic information critical to the success of any proposal. This information includes: (a) the proposal due date, (b) the
required forms and data, and (c) the number of proposal copies required by the funding agency.

For large RFPs, research administrators at the EEEC prepare a schedule or timeline that works backward from the due date to the current date for working on the proposal. This schedule identifies all of the tasks that must be performed to complete the proposal and the time required to perform these tasks. This includes time for reviewing and revising the proposal, obtaining approvals, copying, mailing, etc.

A schedule helps research administrators at the EEEC determine if they have enough time to complete each task. If the RFP calls for the institute to provide a number of certifications, the research administrator can make certain these forms are prepared and signed off early in the process. If proposals must be approved before they are released, then time to accomplish this task can be scheduled.

By tracking progress in completing the proposal, research administrators at the EEEC can determine if the PI is on schedule. If the PI is not on schedule, the research administrator can adjust the timeline so the PI has enough time to complete the remaining tasks.

**Task Eight: Help the PI Meet the Sponsor’s Proposal Deadline**

The research administrator’s attitude is key to meeting the proposal deadline. For instance, if the PI is having difficulty getting information or assistance from others, the research administrator can intervene on the PI’s behalf. If additional clerical support is needed, the research administrator can assist by providing adequate support. For a research administrator who genuinely wants to help the PI meet the proposal deadline, these tasks can be rewarding.

However, to be of assistance, the research administrator must be willing to assist the PI with last-minute proposal problems. At the EEEC, this sometimes involves working late, hand-carrying proposal approval forms, chasing after the Fed Ex truck with proposal in hand, etc. However, research administrators at the EEEC have found that when a proposal goes out on time, and is done well, the PI appreciates their efforts. This paves the way for future collaboration.

**Conclusion**

Self-funded research organizations need grants and contracts to survive. By studying the described tasks, research administrators can help PIs develop competitive proposals. These tasks are more work for the research administrator. However, by becoming part of the team, the research administrator can experience “the thrill of victory and the agony of defeat.” Moreover, the research administrator will know that he or she has played an important role in the proposal development process.
INSIGHT
Linda Schwarz, Associate Editor

IMPROVING THE QUALITY OF GRANT PROPOSALS—A GRANTMAKER’S PERSPECTIVE

Armanda Famiglietti

ABSTRACT

What can grantmakers do to improve a funded project’s chances for success? Two years ago the Carnegie Corporation of New York asked itself that question. We concluded the best method to improve a project’s chance of success was to improve the quality of its proposal. Staff members agreed that collaboration among program, administrative, and financial staff at grantseeking institutions early in the proposal’s development was essential for efficiently managed, effective projects. Projects based on proposal narratives and budgets prepared solely by the principal investigator, without the benefit of collaboration—or communication with administrative colleagues—often resulted in budget monitoring problems, inaccurate financial reports, delayed grant payments, missed opportunities, and increased labor and stress for everyone concerned.

We decided to develop detailed proposal-preparation guidelines that emphasized the importance of internal collaboration. A small committee of staff members reviewed the proposal-preparation guidelines of several foundations, government agencies, technical assistance organizations, and the New York/New Jersey Common Application Form. For nearly 2 years, foundation staff members reviewed a series of drafts the committee produced. Preliminary drafts also were shared with program and financial staff at a few grantee organizations. We incorporated into the final draft the most significant points identified by grantmakers and grantees.

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1 In fiscal year 1996, the Carnegie Corporation made 343 grants and appropriations totaling approximately $59 million. The foundation makes grants primarily to academic institutions and regional, national, and international nonprofits that have the potential for affecting national or international work with children and youth, preventing international conflicts, and strengthening developing countries in English-speaking sub-Saharan Africa.

2 The form was developed by the New York Regional Association of Grantmakers to save time and reduce paperwork for grantseekers and grantmakers.
The Carnegie Corporation of New York emphasizes internal collaboration at the beginning of its proposal-preparation guidelines:

We strongly encourage the program, financial, and administrative personnel at your organization to work together from the beginning of the planning and budgeting process, and to continue the collaboration as the project is implemented.

The guidelines suggest four basic proposal elements: (a) Summary; (b) Workplan; (c) Itemized Budgets for the amount requested, including all revenue sources; and (d) Budget Justification, which states how each budget item relates to the project, and how the amount was calculated.

We include a table that lists natural budget categories, describes the expenses usually covered by the categories, and identifies the information that would be helpful to include in the budget justification (see Table 1). For example, we suggest the salaries and fees budget category include all staff salaries allocated to the project and that each position, salary, and percentage of time devoted to the project be identified. The budget justification includes a description of each position and its connection to the project.

We decided not to include a form or template for the budget because we did not want to constrict applicants to a format that was incompatible with their internal systems for budgeting and financial reporting.

The guidelines explain that the budget will be reviewed in detail and additional information or revisions may be requested. If the proposal is recommended for funding, the final budget must be compatible with the applicant’s financial reporting format and signed by an authorized financial officer at the applicant’s organization. We know that universities and large nonprofit organizations often have internal communication problems. We expect that requiring a financial officer’s signature necessitates some collaboration between program and financial staff members at the grant-seeking organization.

One applicant remarked that the guidelines provided structure and established a common language understandable to principal investigators and administrators.

Reactions

Grantseekers’ and grantmakers’ initial reactions to the guidelines have been positive. One applicant remarked that the guidelines provided structure and established a common
Table 1
Sample Budget Format Excerpted From Detailed Guidelines

Table 1 lists standard budget categories, descriptions of expenses usually covered by the categories, and descriptions of the information that should be included in the budget justification. The Corporation will accept any budget format as long as it is compatible with (applicant) organization's financial reporting format, expenses are itemized in standard budget categories, and sufficient detail is provided in the budget justification.

<table>
<thead>
<tr>
<th>Budget Items</th>
<th>Item Descriptions</th>
<th>Budget Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue/Income</td>
<td>Includes each source and amount of expected revenue. Include grants, contracts, individual donations, fees for services, and publications.</td>
<td>Note whether funds are committed or anticipated. Provide information about cashflow considerations in relation to the proposal's workplan and timetable.</td>
</tr>
<tr>
<td>Expenditures (direct and indirect)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salaries and Fees</td>
<td>Includes all staff salaries that are allocated to the project. Identify each position, salary, and percentage of time devoted to the project.</td>
<td>Describe each position as it relates to the project.</td>
</tr>
<tr>
<td>Fringe</td>
<td>Includes benefits and taxes allocable to the salaries listed above and percentage of salary expenses.</td>
<td>Note what benefits will be provided and how the amounts were calculated.</td>
</tr>
<tr>
<td>Consultants</td>
<td>Includes all fees, honoraria, and expenses paid for consulting and professional services of individuals or organizations that are not paid staff of the organization.</td>
<td>Identify consultants and anticipated costs individually. Describe each consultant's contribution to the project.</td>
</tr>
<tr>
<td>Printing/Publications/Dissemination</td>
<td>Includes expenses for production and dissemination.</td>
<td>Identify specific publications and number of copies planned.</td>
</tr>
<tr>
<td>Telephone/Fax/Online Service</td>
<td>Includes all telecommunication expenses.</td>
<td>Identify how anticipated usage was determined and how amounts were calculated.</td>
</tr>
<tr>
<td>Supplies</td>
<td>Includes office supplies, subscriptions, books, and other materials.</td>
<td>Identify how estimates were calculated.</td>
</tr>
<tr>
<td>Postage</td>
<td>Includes all postage and delivery expenses.</td>
<td>Indicate how estimates were calculated.</td>
</tr>
<tr>
<td>Equipment Purchase</td>
<td></td>
<td>Identify each item, cost, and relevance to the project.</td>
</tr>
<tr>
<td>Equipment Maintenance</td>
<td></td>
<td>List each major item being maintained, its relevance to the project, and how estimates were calculated.</td>
</tr>
<tr>
<td>Travel</td>
<td>Includes all transportation and accommodation expenses.</td>
<td>Identify travelers, dates of trips, destinations, forms of transportation, and accommodations. Indicate how travel relates to project and how estimates were calculated.</td>
</tr>
<tr>
<td>Other</td>
<td>Includes items not listed above.</td>
<td>Identify how expense relates to project and how estimates were calculated.</td>
</tr>
<tr>
<td>Indirect Costs</td>
<td>Costs incurred for common or shared administrative/management activities that are not directly related to your project.</td>
<td>Identify which expenses were included and how costs were calculated. Note amount and percentage of direct costs.</td>
</tr>
</tbody>
</table>
language understandable to principal investigators and administrators. Grantmakers comment on the improved organization and readability of proposals submitted by applicants who have received the guidelines. Encouraged by preliminary results, we will continue our work to increase our applicants' and grantees' awareness of how important their internal communication and collaboration are to the success of our shared endeavors.
Electronic Research Administration and the Culture (and Subcultures) of Higher Education

John Lankford, PhD

ABSTRACT
At recent workshops on electronic research administration (ERA) conducted by the National Council for University Research Administrators (NCURA) (August 1996 and March 1997) and the Society of Research Administrators (SRA) (January 1997), the author participated in many conversations on the cultural aspects of implementing electronic commerce. While these discussions were on target, the target itself was not always clear. This article examines how several aspects of the culture of contemporary higher education relate to ERA. Discussion draws on the author’s 30 years of experience as a faculty member and administrator at three land-grant universities.

INTRODUCTION
ERA can be viewed as a cultural problem, and analyzed according to what anthropologists and social historians call “material culture”: the tools, implements, and various material products of a culture. ERA can be examined from the perspective of a narrow segment of the university, the Office of Sponsored Projects (OSP) or the Post-Awards Office (PAO), which can help us understand some of the complexities involved in implementing ERA. Other dimensions of academic culture also should be explored. A detailed picture of the complex culture of public higher education will provide an understanding of cultural impedi-
ments and inducements affecting the implementation of ERA.

Culture includes behavior, attitudes, values, and institutions as well as language and ideology. The more complex a culture, the greater its diversity. Complex cultures are not homogeneous; the balance between conflict and consensus is always precarious. Cultures include stratification systems, often based on the distribution of wealth. Diversity, exacerbated by an unequal distribution of wealth, means that on careful examination, cultures that appear unitary are really a collection of subcultures. This is the case with American higher education, where such parameters as public or private status and level of wealth tend to define subcultures.

Institutions pioneering the implementation of ERA often are drawn from the ranks of leading private universities, endowed with financial and technical resources (including personnel), and led by people with vision and political skill. Institutions that have spent vast sums developing in-house systems for ERA are role models only for institutions with the same level of resources. Informal conversations with participants at ERA workshops reveal that many research administrators are impressed by the achievements of elite institutions, but depressed because they cannot imagine how these lessons could be applied at their institutions.

At the March NCURA workshop, a panelist from a major West Coast university was asked how much had been spent on reengineering research administration. The answer brought laughter from the audience: between $1 million and $2 million, exclusive of the medical school and college of engineering.

Perhaps the most striking example of cultural diversity occurred at the San Diego workshop, when an administrator from a well-funded Midwestern university was asked how he secured the support of his superiors to implement ERA. The question had no meaning. Support was not problematic at that university; it was a given. But for those closer to the mean, or several standard deviations away, it is very much an issue. Listen carefully to informal conversations at workshops. Repeatedly, they center on the lack of support from top administrators, and a feeling of helplessness because of the difficulty communicating with senior leadership.

Knowing the culture of state universities and state colleges is invaluable in effectively marketing ERA. While painted in broad strokes, the following may help ERA champions understand cultural factors that prevent implementation of ERA, as well as the factors that can be turned to its advantage.

Higher education in the United States is diverse. Material, administrative, and technical resources are not uniformly distributed. While elite institutions are blessed with adequate, if not superior, technological support, other institutions make do with less. A show of hands at a session at the March NCURA workshop suggested that many participants still used 386 microprocessors. The recommendation from the panelists—get new high-end machines—was not really helpful. One audience member responded, “Will you pay for them?”

Higher Education Cultures

Let us begin by looking at an important segment of the academic
population. Administrators preside over a diverse and remarkably independent faculty. In part, this aspect of academic culture can be explained historically. The 3 decades following World War II marked a golden age in American higher education. Universities grew in size, wealth, and power. Responding to Cold War pressures, research in science and engineering was funded at levels undreamed of before 1940. Many faculty members viewed themselves as independent entrepreneurs who owed little to their institutions. Externally funded research became a professor’s highest goal, and administrators encouraged and rewarded research.

In the 1990s these values have come under fire from students, taxpayers, and legislators. A national groundswell favors returning public higher education to its pre-World War II commitment to teaching. Consequently, faculty reward systems are being restructured to reward activities other than research. Wise administrators understand that the relationship between teaching and research is not mutually exclusive, but this concept is sometimes difficult for legislators and members of governing boards to comprehend.

Other controversies punctuate contemporary academic life. A debate rages over the future of tenure. The complex discussions range from the need for administrative flexibility to secure expertise in emerging areas to the tired old war horse of academic freedom. Both senior administrators and state legislators are pressing for post-tenure review. The tenure debate will continue to command administrative and political resources, and to distract institutional leaders from other matters.

But the list does not stop with policy debates. Information technology (IT) is not only transforming the way business is done in the OSP or the PAO; IT also is transforming the activities of registrars; directors of admissions; and even the humble, but politically sensitive, area of classroom scheduling. However, it is in teaching that the application of IT is most controversial.

Wise administrators understand that the relationship between teaching and research is not mutually exclusive, but this concept is sometimes difficult for legislators and members of governing boards to comprehend.

As professors and publishers roll out interactive, multimedia courses, the nature of teaching and the shape of the curriculum are changing. Institutions are investing in high-tech
classrooms and instructional design laboratories to help faculty create multimedia courses. For some in the academy, this is the long-desired move from the lecture method of instruction; for others, it appears to be the end of civilization. Fiery discussions over mediated courses, curriculum reform, the use of IT for distance learning, and new roles for professors are more intense than those over tenure.

Perhaps now we can see why research administrators have difficulty getting an appointment with the provost or vice president—there is a long line outside the door!

These structural changes are altering the culture of public higher education in the United States. However, changes in the larger culture (at the state and national levels) also affect colleges and universities.

The best that most state university systems can hope for are flat budgets and no rescissions. The public demands accountability and wants higher education to join industry and the federal government in reengineering. These demands are stoutly resisted by many professors and administrators. Opponents of reengineering claim that higher education occupies a unique status in American culture. It is not subject to demands for accountability and, while often dependent on tax dollars, has virtually no responsibility to taxpayers. In short, public confidence in higher education has eroded.

In a time of reduced state resources and increasing enrollments (some states projected a 50% increase in high school graduates in less than a decade), funding from federal and private sector sources takes on new significance (Chronicle of Higher Education, 1996). An increase in federal research support and cooperative agreements with the private sector would benefit higher education greatly. But here too, there is no consensus in the academy. Humanists and social scientists often complain that increased activity in technology transfer and university and industry cooperation subverts a university’s true mission.

**The Argument for ERA**

As we sit in the outer office, waiting for our appointment, it is important to marshal our arguments for ERA and tie them closely to cultural conditions in the academy. This will place ERA in a familiar context for senior administrators, and help justify ERA start-up costs.

But first, let us ask why we are waiting for an appointment with a senior administrator. At the SRA and NCURA workshops, several speakers emphasized the following point: Develop a comprehensive ERA implementation plan and then seek support from senior administrators. This approach assumes that lower echelon administrators command resources (time, technical knowledge, and funds) needed to prepare a viable plan. For many public institutions, this is a dubious assumption. The OSP and PAO are low on the administrative food chain. Staff and managers can seldom access informal channels of communication, and are constrained by budgets that seldom contain discretionary funds for paying outside consultants or sending staff to NCURA and SRA meetings.

For many public universities, securing the support (political and financial) of senior administrators is crucial for, and antecedent to, plan-
ning for ERA. This is why we are waiting outside a senior administrator’s door, and why we must develop persuasive arguments that relate ERA to contemporary university culture.

Analysis of public higher education suggests several cultural issues that should help as we prepare to discuss ERA with senior administrators. Let’s review these issues and see how they help or hinder the cause of ERA.

**Faculty Activities**

As higher education moves to reclaim traditions of excellence in undergraduate teaching, faculty assignments may be redefined to encourage professors to focus on the activities at which they excel. In this scenario, ERA would enhance the efficiency of research faculty in science and engineering. They would spend less time on paperwork and more time doing science. ERA also might improve an institution’s ability to receive federal funding.

A few institutions are considering a more draconian scheme. All faculty research must be funded externally rather than by salaries (as is often the case in the arts, social sciences, and humanities). Supporters argue that since salaries are the largest line in the institutional budget, eliminating unfunded research can refocus faculty efforts. Implementing this plan probably would lead to increased applications for external funding, and ERA would help the OSP cope with the increase.

**Tenure**

In considering the tenure debate, matters are less promising. If your institution is embroiled in an acrimonious dispute over tenure and post-tenure review, this may not be the time to knock on the door of the chief academic officer or the chief executive officer. In academia (as elsewhere), timing is everything. ERA cannot compete with tenure for the attention of institutional leaders. Bide your time until a more auspicious moment.

**Information Technology**

As IT transforms the way other areas of the university do business, you have ammunition to justify ERA. Indeed, ERA may be seen as part of a concerted institutional effort to improve efficiency, control costs, and provide better service.
Technology Transfer

ERA should help institutions compete in attracting federal dollars. It also may become a potent weapon for selling the services of the university to the business community. Improved efficiency and productivity will make a positive impression on potential industrial partners. If all parties at the table speak the language of reengineering, they share a common bond.

PROFESSIONAL ORGANIZATIONS AND ERA

Beyond the culture of the academy, facets of the culture of our professional organizations should be considered.

At the annual SRA meeting in Toronto (October 1996) and at the ERA workshop in San Diego, attendees had interesting discussions concerning best practices. It is important that Websites be developed by SRA and NCURA to report best practices, and that these sites have e-mail links, so participants can query each other. However, elite institutions should not dominate these discussions.

Best practices developed by elite institutions must be translated into the cultural context of the average university. By the same token, any attempt to disseminate success stories (again dominated by the top institutions) must be matched by reports of failures and false starts. Only by telling it like it really is, can we stimulate change.

My experience is that organizers of workshops and conference sessions continue to overestimate the technical knowledge of the average participant. Technical discussions start on page 3 or 4, omitting what is obvious to insiders—the nature of the project and its goals. The tendency is to assume listeners have the necessary background to jump into a complex “bits and bytes” discussion. Sometimes, a technical glossary is appended to the slides, but it is seldom discussed. It is time to admit a lot of people out there need ERA 101 rather than ERA 410.

Workshop and conference sessions organizers might consider the following experiment. Many learned societies use commentators who raise questions and engage panelists in a dialogue. What if commentators from non-elite institutions engaged in a dialogue with speakers from elite institutions or technical experts? This would open the discussion of ERA to a wider range of institutions. The March 1997 NCURA workshop did include a session on implementing ERA at smaller schools.

Other rewards can be gained. Meetings that become more interactive and involve forms of collaborative learning move away from the passive lecture mode. Members of the audience become active learners. Current research suggests that in the active, collaborative mode, more is learned, and learning is certainly more fun (Slavin, 1991).

It is time to admit a lot of people out there need ERA 101 rather than ERA 410.
In addition, there are options for different kinds of panels and presentations. For example, “Obstacles to Implementing ERA at . . . .” (let the program committee fill in the blank), or “Minimum Technical Requirements for ERA.” Also, the various solutions offered by vendors to help smaller institutions implement ERA should receive greater attention.

These suggestions entail some obvious ideas for restructuring conference planning committees, which should include a significant number of representatives from smaller institutions that have not yet implemented ERA. This ensures that the problems of smaller institutions are acknowledged publicly and discussed.

Agency/university cooperation is one of the most important characteristics of both SRA and NCURA. So, the following comments are directed to representatives from the federal side.

Focusing on the success of elite institutions will result in standards and best practices that many universities can never meet. In the spirit of diversity that marks American academic institutions, it is time to think about best practices that can be adapted across the economic and cultural spectrum. The one-size-fits-all approach does not reflect the cultural realities of higher education.

**Small Institutions**

The concluding section is addressed to smaller academic institutions—those which generate external research funding up to $50 million a year. This group includes both public and private colleges and universities, and comprises an important component of the academic research effort.

While we can ask that large affluent institutions, federal agencies, and our professional organizations work closely with smaller and less endowed colleges and universities, smaller schools must become proactive. You simply cannot adopt a wait-and-see attitude. The timetable is set; ERA is not some fly-by-night idea that will soon fade. For example, in February 1997, the Department of Defense (DOD) announced it was requiring all of its contractors (including colleges and universities) to register by Sept. 30, preferably using electronic registration. ERA marches forward! Watchful waiting is no longer an option.

What are the basic steps that smaller institutions should take now? While no sessions at NCURA or SRA workshops have yet been dedicated to this question, the following provide preliminary guidelines for purposeful action.

Get Up and Running on FastLane

FastLane, the poor man’s solution to the challenge of ERA, provides experience with a Web-based system. The Web can be accessed with a modest outlay for hardware and software. Despite Cassandra-like predictions that the World Wide Web is doomed (Metcalfe, 1996), the Web is here to stay. Higher education will soon have access to Internet2, with such benefits as increased bandwidth.

The sooner the OSP staff can start experimenting with a FastLane system, the sooner they can begin thinking about how to reengineer research administration. Make no mistake: a system like FastLane or the NIH ESNAP is not an end, but a beginning. Reorganization is the inevitable next step.
However Modestly, Start Planning to Reengineer Now

One of the important themes in the history of technology is that hardware is not a stand-alone object, but part of a system. If this point is not understood and acted upon, the best technology has few lasting benefits. Technology may make the operation more efficient, but the ultimate goal is an effective system, in which both quantitative and qualitative improvements enhance customer services.

Reengineering Must Be Institution-Specific

One shoe does not fit all. Reengineering must respect an institution’s culture. If you opt for the help of an outside consultant, select one whose background and experience are in the academy, rather than in business and commerce.

Reengineering Must Be Phased In

Small institutions cannot write big checks. Thus, reengineering must be phased in across a clearly defined timeline. Begin with the technological infrastructure, then move to implement other aspects of reorganization.

Reengineering Must Be Based on Institution-Wide Consensus

Without consensus, you will not have the resources or the will to reengineer research administration. Often, outside consultants have a better chance than staff members of focusing senior administrators’ attention and helping them see the significance of reengineering.

Reengineering Goals

The goal of reengineering research administration is to achieve greater efficiency and effectiveness to increase institutional productivity, improve product quality, and enhance customer satisfaction.

CONCLUSION

Research administration serves various populations—PIs, federal agencies, the higher university administration. The challenge is how to meet the needs of these diverse groups. We will have succeeded when we can point to increased satisfaction for both research administrators and the populations they serve.

The activities of our professional organizations and government agencies should be geared to making the benefits of ERA available to all institutions (large and small) engaged in federally sponsored research in the sciences and engineering. Let us work together to explore different levels and configurations of hardware and software, as well as methods of reengineering business practices that fit the diverse culture and subcultures of higher education in America.

REFERENCES


Metcalfe, B. (1996, November 18). The Internet is collapsing; the question is who’s going to be caught in the fall. InfoWorld.

This review came about as the result of a question I asked at the 1997 SRA Annual Meeting in Atlanta. I was attending a session on technology transfer and asked whether there were any references a person might use to become more familiar with the process. The panelists could not refer me to a specific work, but suggested I review past issues of the *SRA Journal* for articles on technology transfer then check the bibliographies of those articles.

As I left the session, Lisa den Hamer, the associate editor for Reviews for the *SRA Journal*, showed me the book that is the subject of this review. She asked if I would be willing to review it for the *Journal*. I quickly pointed out that I was new not only to technology transfer but to the field of research administration (having just begun in July 1997). She thought that might be a valid perspective for a review of this particular book. So here, fellow members, is a newcomer’s view of *The Technology Transfer System*, by Albert E. Muir.

The book is divided into three parts: Part I, *Setting*, begins with an interesting historical view of efforts to protect intellectual property (IP), technology, and inventions. Muir traces the flow of these ideas from China, India, and the Arab world to Greece and the rest of Europe. He then discusses the evolution of IP protection in the United States through trade secret and patent laws. Muir concludes this evolutionary view by looking at the participants in technology transfer in today’s settings, including governments, universities and colleges, and industry.

Part II, *Practice*, discusses the nuts and bolts of bringing a product to market. While this section is of value to all readers, it is especially important to the individual inventor. Here is where Muir gets into methods of
financing (e.g., venture capitalists or existing companies), licensing, company formation, contracts, and patent concerns.

Part III, Oversight, is geared toward the technology transfer organization and is of particular interest to a manager of a tech. transfer department. Muir gives an overview of management and evaluation of the technology transfer office. He also delves into different aspects of governmental policy and the use of government-sponsored or -owned material.

The appendix includes several agreements that are helpful in fashioning standard forms for the technology transfer office. Also included are detailed royalty rate spreadsheet templates that can be constructed to allow the office to formulate rates based on different criteria.

In my view as a neophyte in the technology transfer business, this book does exactly what it intends to do and exactly what I wanted when I asked the question about references. It does not go into great depth on any one topic, but gives the reader an excellent overview of the whole subject. The bibliography is extensive enough to give those who are interested in pursuing a particular aspect of technology transfer a point at which to begin further research. It is easily read and will remain on my bookshelf as a quick reference to the world of technology transfer and commercialization.
The Rod Rose Award is named after the founder and first managing editor of the SRA Journal.

In honor of Mr. Rose, each year the SRA Journal Editorial Review Board and editorial staff select the best original paper in the most recent volume in terms of subject relevance, usefulness, innovative concept, integration, style, and interest. This year, a winner was chosen from several double issues encompassing volumes 27 and 28 of the Journal. The 1995-1997 awardees, who received a $200 prize at the Society’s 31st Annual Meeting in Atlanta, are:

Ira Goodman (lead author), Kammy Cabral, Gwynne Nemcek, and Therese Powers for Enhancing Communication in a Multicampus Research Center

PREVIOUS WINNERS

1994-95 Irene Johnston Petrick
The Potential for Public Relations Techniques to Increase the Growth and Financial Stability of Research Activities at U.S. Universities

1993-94 John B. Richey
Crafting Contracts for International Projects; and Budgeting for International Projects: In-Country Operations and Long-Term Residential Assignments (two-part article)

1992-93 William S. Kirby
Improving Productivity in Sponsored Research Administration: New Approaches and Structures

1991-92 Peggy S. Lowry and Celia S. Walker
The Need to Evaluate Research Support Offices in Institutions of Higher Education

1990-91 James Fairweather
The University’s Role in Economic Development: Lessons for Academic Leaders

1989-90 Charmaine Judy Streharsky
Research Administrators and Development Officers: Orchestrating from Organizational Discord to Harmony
1988-89  Barbara C. Hansen and Kenneth D. Hansen  
*Challenges to the Integrity of Science: The Federal Mandate and Issues for Institutions*

1987-88  L. B. Cebik  
*Organizing Research Compliances for the 1990s*

1986-87  Clifford L. Shisler, Michael R. Dingerson, and Sonja E. Eveslage  
*Research Administration Organization, Practitioner Characteristics and Tasks*

1985-86  Mark R. Edwards and J. Ruth Sproull  
*Performance Appraisal for Matrix Management*

1984-85  Richard L. Mooney  
*Administration in the Research Environment—The Provider’s Perspective*

1983-84  Bonnie Jean McKenzie  
*Towards a More Effective Style of Research Administration: A Comparison of the Bureaucratic and Adaptive Style*

1982-83  Roger G. Ditzel  
*Patent Rights at the University/Industry Interface*

1981-82  Howard L. Smith and Waneta C. Tuttle  
*Managing Research Scientists: Problems, Solutions and an Agenda for Research*

1980-81  Robert Z. Gussin  
*Sustaining the Vitality of Research*

1979-80  Wilfred S. Martin  
*Research and Development in the 1980s: The Need for Industry-University Cooperation*

1978-79  Richard Sessions and Tom Collins  

1977-78  Bruce Darling and Leonard Redecke  
*The Indirect Cost Predicament*

1976-77  E. J. Shoben Jr. and J. William Smith  
*Research Administration and Graduate Education in American Universities*
1975-76  William J. Kretlow and Winford E. Holland
Implementing Management by Objectives in Research Management

1974-75  Jack M. Nilles
Interdisciplinary Research Management in the University Environment

1973-74  Robert A. Collins and John L. Yeager
Staff Evaluation and Incentive Practices Utilized by Behavioral Science Research Organizations

1972-73  Robin J. Pardini
A Problem for Every Solution—Perspectives on the Study of University Administration
I. Topics of Interest

The SRA Journal publishes a variety of articles intended to expand the knowledge and tools of research administration. Manuscripts are solicited on topics such as the role of the administrator (e.g., aspects of professional training, responsibilities, and career advancement); methods to improve administrative management; issues of compliance; higher education-industry partnerships; use of new technology; techniques to enhance the management of research; procedures which stimulate faculty interest in research; and other timely subjects that will be of interest to research administrators employed in the public or private sectors. Contributors need not be a member of SRA to submit an article to the Journal.

The SRA Journal offers contributors several methods for presenting their subject matter:

- **Research papers** allow research administrators to report the results of original research. Articles should reflect the stages of the research process and be organized into distinct sections (i.e., introduction, materials and method, results, conclusions, cited references, acknowledgments, tables and figures—see “Style” below).

- **Theoretical articles** draw upon the existing research literature to advance a theory in any area related to research development and/or administration.

- **Scholarly critiques** organize, integrate, and evaluate previously published information on research development and administration. Authors should identify contradictions, gaps, and inconsistencies in this body of knowledge and recommend the next step or steps needed to resolve the identified problem(s).

- **Commentary articles** present an author’s point of view on a topic related to the development and/or administration of the research enterprise. The author’s position is supported by literature citations, data and/or examples from personal experience.

- **Case studies** provide background information on a problem or issue related to research development and/or administration and describe how this problem or issue has been resolved within a particular organization.

- **Reaction papers** are articles in which the author responds to an article previously published in the Journal. Such articles may be initiated from the field or invited by the editor. The author of the original manuscript will always be given an opportunity to reply.

- **Brief reports** are concise descriptions of innovative techniques, procedures, or policies that would be of interest to other research administrators. Brief reports are limited to no more than 410 lines of 60-space text.
• Review articles evaluate books, films, and other media relevant to the field of research administration.
• Other articles may include edited transcripts of roundtable discussions that focus on topics of interest to research administrators; articles based on interviews with key policy-makers; or other forms of written expression deemed appropriate to the mission of the Journal by the editor in consultation with the Editorial Review Board.

Except under unusual circumstances, the SRA Journal does not accept manuscripts that have been published elsewhere, or that will be published prior to appearing in the SRA Journal. Authors are reminded to inform the editor of such matters at the time a manuscript is submitted.

II. STYLE

The SRA Journal has adopted the publication style manual of the American Psychological Association as the guide to follow when submitting manuscripts.* When appropriate, articles should be organized according to the following format:

• Title Page. Please include the title of the manuscript, name of author(s) with current title(s) and institutional affiliation(s) and complete mailing address for correspondence, including telephone, fax and e-mail (if applicable). Articles based on presentations should be identified as such on the title page.
• Abstract. Each manuscript should be prefaced with an abstract of 100-200 words summarizing the topic and principal conclusions.
• Introduction. This portion should thoroughly chronicle the past history of the subject under discussion with appropriate use of references from the literature. Use of reference materials is very often an integral part of an accepted manuscript.
• Materials and Methods. This section should identify the procedures and techniques used to conduct the study (e.g., type of survey employed).
• Results. This part should summarize the results achieved as a direct consequence of the techniques/methods used in the study.
• Conclusions. This section should provide a concise summary of the study and any future or practical implications for the use of the results achieved.
• Cited References. References should be cited alphabetically and listed together in a uniform manner at the end of the manuscript. Footnotes should be avoided. Articles and books should be cited as follows:

Journal Article (single author):

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Journal Article (multiple authors):

Book (single author):

Book (multiple authors):

III. TEXT FORMAT
All manuscripts should be submitted in duplicate (including all tables and figures) and in double-spaced, typewritten copy without page numbers (although all tables and figures should be numbered consecutively—see “Graphics” below).

Length
While the Journal realizes that different subjects will require treatments of different lengths, authors should attempt to keep manuscripts to fewer than 2,000 words (approximately ten 8-1/2 x 11 manuscript pages, double-spaced).

Computer Diskette
When possible, all manuscripts should also be submitted to the editor on a computer diskette. MS Word (version 6.0 or higher) and WordPerfect (version 5.0 or higher) are optimal, but the publisher can translate text from other softwares as well. Submissions through electronic mail will not be considered. Please inform the editor when submitting a manuscript if you are unable to submit a diskette as well.

Typeface
Twelve-point Times and Times-Bold typefaces are most easily translated, though the publisher can translate other fonts. Please refrain from customizing manuscript text with stylized fonts or formats, such as small caps, larger or smaller point sizes, unusual tab settings or altered margins.

IV. GRAPHICS
Tables should be numbered consecutively in the order in which they are introduced in the text, using Arabic numerals preceded by the word “Table.” Identify each figure, drawing, illustration, chart or graph consecutively by number (using Arabic numerals) preceded by the word “Figure.” Include reference copies of each graphic with duplicate manuscript. The typeface of text in any table or figure should match that of the manuscript text (see “Typeface” above).

Standard Graphics
When possible, simple text-based tables and figures (see Table 1) should be submitted both in duplicate and on computer diskette in a standard word processing language. Each table or figure should be assigned a separate filename from that of the manuscript. Alternatively, submit graphics in a camera-ready format as an original black-and-white negative or glossy print only (print-outs on standard
Complex Graphics

Complex figures, such as those using overlapping screens, patterns or shading (see Figure 2), should be submitted on computer diskette in a Mac or IBM TIF format. Alternatively, submit the graphic in a camera-ready format as an original black-and-white negative or glossy print. Complex graphics printed or photocopied on standard paper are usually not accepted. Lettering should be uniform and large enough to be legible after reduction of up to 50%.

V. EDITORIAL REVIEW PROCESS

Each manuscript submitted to the SRA Journal will be reviewed by the members of the Editorial Review Board. Authors will be notified of the status of their manuscripts as soon as a decision has been reached. Prior to publication, authors of original manuscripts will be required to sign a copyright registration form. Original manuscripts cannot be published unless this copyright form is signed by the author(s).

Table 1
Function Descriptions

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACAD</td>
<td>Academic support, faculty and student affairs, teaching. Not research.</td>
</tr>
<tr>
<td>ACCT</td>
<td>Financial accounting functions, especially bookkeeping and reporting.</td>
</tr>
<tr>
<td>FAC</td>
<td>Facilities maintenance of common physical plant. Not specific-use areas like classrooms or research laboratories.</td>
</tr>
<tr>
<td>FIN</td>
<td>Financial management. Includes departmental level and individual management of assigned budgets.</td>
</tr>
<tr>
<td>GEN</td>
<td>General. Functions any employee might perform, simply by being an employee.</td>
</tr>
<tr>
<td>OSS</td>
<td>Office support and supervision. Administrative office functions.</td>
</tr>
<tr>
<td>PAMS</td>
<td>Purchasing and Material Support. Buying, contracting, and associated activities, including gasses and stockroom operations.</td>
</tr>
<tr>
<td>PAY</td>
<td>Payroll. Setting up payroll, managing payroll records. Distribution of pay.</td>
</tr>
<tr>
<td>RA</td>
<td>Research Administration. Pre-award and post-award procedures other than bookkeeping.</td>
</tr>
<tr>
<td>RSF</td>
<td>Research Support Functions. Direct technical support of research, e.g., electronics, repairs, and manufacturing.</td>
</tr>
<tr>
<td>TVL</td>
<td>Travel. Administration of travel program (not travel expenses themselves).</td>
</tr>
<tr>
<td>INT</td>
<td>Internal Controls, e.g., cash controls, auditing, and back-up activities.</td>
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</tbody>
</table>

Note: The publisher reserves the right to deny publication of graphics that do not reproduce clearly in the SRA Journal.
Manuscripts and letters-to-the-editor should be sent to Pamela Miller, Ph.D., Office of Research Development and Administration, Southern Illinois University, Carbondale, IL 62901.

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