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In January, I received the call informing me that I was selected to be the next Editor of the Journal of Research Administration. Thought and emotion collided. How in the world did this happen? Had I taken leave of any form of sanity when I had agreed to be interviewed? After all, there is position and personal life. Like everyone else I know, I have that inner longing to rid myself of the burden of each day’s labors. Why in the world take on yet another activity? Strangely and almost as soon as I hung up having given a very, very reluctant “yes,” my initial hesitation gave way to a deeper series of shadow questions. “Am I competent? What made someone think that I could really meet the expectations and responsibilities? What if I fail? What if I make a mistake?”

Normal questions. Nothing out of the ordinary.

But after agreeing to my selection, I discovered something else came up from the shadow side of things --- something unexpected. I realized in this moment that for once in my life the really central issue was not about my fears or personal insecurities. For once in my career it was not about the changes that this new call to leadership would make in my schedule. Rather it was something different. A different phrase came looming up out of the shadows and arrested my attention:

“Tradition and Legacy”

Over the past weeks since assuming leadership of the Journal, I have become more and more appreciative of the Tradition that is the Journal. Tradition is a curious word. It comes from the root term meaning “to be handed over.” It shares the same linguistic origins with the word “betray.” My first moments of saying “yes” to being the Editor made me wonder if I had been “handed over” to something for which I was completely unqualified. I wondered if I had been “betrayed” into my inner fear of being a sham, overqualified, an overachiever. However over these last weeks I have come to realize that what I have been handed over to has absolutely nothing to do with my less-than-adult preoccupations and fears. Nothing at all. This new challenge of being Editor of the Journal is about something much bigger. The Legacy of the Journal is its Tradition. The Journal-Tradition is something that predates me. It will last assuredly long after my tenure and my career are over. However at this moment of history, the flame of the Journal-Tradition is briefly mine to tend and stoke. And that flame has much to do with keeping alive and stoking the academic and professional groundwork of who we are and what we do in research administration and management.

This legacy of the Journal-Tradition is hardly new. The flame has been tended exceedingly well by previous Editors in Chief, Associate Editors, and members of the Journal Editorial Board. Beginning with this issue, I am delighted to call your attention to a vastly expanded series of professional review boards made of Society and related research executives who serve us as Associate Editors, members of the Manuscript Editorial Board, and peer reviewers on our Journal Review Board. However, as we enter into unfolding new times, I want to spend a moment to celebrate and give the highest gratitude and praise for my predecessor.
Dr. Peggy Harrel has served the Journal of Research Administration with immense distinction over the last three years. Dr. Harrel brought to the Journal a level of literary scholarship and professional leadership that has been unparalleled. With a doctorate in English language and literature and serving presently as an Assistant Professor of English, Dr. Harrel provided our readership with an outstanding sense of editorial excellence. As Director of Graduate Studies and Research at the University of Southern Indiana, she admirably integrated literary and editorial excellence with a dedication to advancing the ever evolving nature of our profession and the body of knowledge of research administration. In the past three years, the Journal of Research Administration has experienced a renewed sense of professional, scholarly, and literary excellence directly due to the stalwart and insightful leadership provided by Dr. Harrel. Without such leadership, where the Journal might grow in the next three years simply would not be possible. And this is the awkward posture that I have been asked to assume as the next Editor of the Journal. I have been “handed over” to a new Society servant-leadership so that the Journal-Tradition may continue to be handed over as a wellspring of excellence to every member of our profession and its allied disciplines whether as members of the Society or not. It is a daunting task and one that should make anyone wonder if they can take over from anyone so qualified as Dr. Peggy Harrel to serve the needs of those eager to deepen who we are and what we do in research administration.

As the new Editor, I am incredibly heartened. This, my inaugural issue, gives me a personal sense of anticipation. I am delighted by the articles and essays that I hope will enrich you and spur you on to horizons unforeseen. In this issue, we welcome extraordinary articles from colleagues the world over. In this issue, you will be delighted to see how diverse aspects of our profession are critically reflected upon from the widest global perspectives. Our world-wide authors in this issue “hand us over” so that our sense of the profession is stretched in new and challenging ways. In this issue, we obtain a deepened sense of how research administration is coming of age as we celebrate with delight the publication of the first major textbook in research administration and management edited by Lynne Chronister and Elliott Kulakowski and reviewed in the pages to follow.

You see, despite every stereotype, traditions and legacies never stand still. They are living things. They proceed with untamed energy and fill spaces in our lives that we never even knew existed. The Journal, I would suggest, is just one resource among many in which the Energy-Tradition of our profession is harnessed so that we can assist genius to come to birth in the experience that is “research.” And it is to this mission that each of us is handed over for the service of those who come to us in all the vast ways that we summarize in that one term, “research administration.”

But enough for now. Let me hand you over to the pages to follow. And in that handing over, may you be caught up in an energy and a spark that each of us on the Journal Staff hope will be fanned into something like fire!
Contributors

David Perlman, Ph.D. currently works at the New Jersey Department of Health & Senior Services as Director of the Human Research Ethics Program. David’s experience and training in research ethics spans work in government, academia, and industry. In addition to work as a research ethics consultant and IRB administrator, David is a seasoned educator, with an academic appointment at the University of Pennsylvania’s School of Nursing, where he teaches clinical and research ethics. David completed his doctorate in philosophy, specializing in bioethics, from the University of Tennessee. David also holds a master’s degree in philosophy from Georgia State University, and a Bachelor of Science degree in biology and classics from Emory University.

Ed Mason, MA is an Assistant Director of Development and Government Relations, Research and Sponsored Programs Office at Illinois State University, where he has been employed for five years. His responsibilities include developing faculty and staff teams for projects, developing multi-disciplinary partnerships, establishing partnership programs with external constituencies and procuring funding from state and federal sources from contracts or congressionally authorized grants. Other relevant career experience has been as a consultant to nonprofit organizations in which he provided services in grant writing, training sessions for board of directors and strategic planning. He has taught government and history classes at South Plains College at Levelland, Texas and Eastern New Mexico University. He holds a B.S. in Political Science from Eastern New Mexico University and a M.A. in Political Science from Texas Tech University.

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Formerly Contracts Manager and budget negotiator in the Grants Administration Office (1999), Theresa internally and externally liaised with coordinators, principal investigators, research assistants, pharmaceutical and device company representatives as well as CROs and SMOs. She graduated with honors from Texas A&M University-Corpus Christi (2004) earning a BS in Health Science. Incorporating degree program practicum requirements with a need to streamline processes and infrastructure was instrumental in the development of this manuscript. Co-authored with a colleague, this article was submitted to SRA for the “Best Paper 2005” competition and was one of eight finalists. Theresa holds certification as a Certified Clinical Research Professional through the Society of Clinical Research Associates (2002) and certification as a Clinical Research Contract Professional (Academic) through the Model Agreement Group Initiative (2004).

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is a senior financial analyst at Scott & White Memorial Hospital. Currently, she is pursuing her DBA (doctorate of business administration) from the University of Phoenix. Her responsibilities over the past nine plus years have included pre-award and post-award functions associated with grants, pharmaceutical, and internal funded studies. Her main focus is budget development. This co-author’s article discusses the hot topic of a centralized infrastructure such as a circle of support. She is certified by the Model Agreement Initiative Group (MAGI) as a certified research contracts professional academia.

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Jennifer Morgan Shambrook has worked in the field of research administration and management since
1986. She began her career in research administration at the University of Alabama at Birmingham (UAB) in 1986 and held various positions of increasing responsibility until 1996. She was recruited to Pittsburgh, PA, in 1996, where she served as the Director of Personnel, Pre- and Post-Award Administration at Western Psychiatric Research Institute. She joined our faculty in August 2000 as Associate Chair for Research Administration. She has also served in an additional role since 2001, as the Co-Director of the Division of Public Psychiatry with Dr. Chris Frueh.

Ms. Shambrook has held a number of appointments in the Society of Research Administrators International. She is the only member of the Society to serve as President of two of the five regional sections. She was also the Founding President of the Allegheny Chapter of SRA Int’l, which formed a coalition for local professional development of research administrators for a 150 mile radius of Pittsburgh, PA. Participating institutions included the University of Pittsburgh, Carnegie Mellon University and Penn State University. The chapter continues to thrive and accomplish the original mission of education and professional development. She currently serves as Chair of the Education and Professional Development Committee of SRA Int’l.

In 2004, Ms. Shambrook received the designation of Distinguished Faculty Member of SRA International in recognition of her contributions to teaching members of her profession. She has presented locally, nationally and internationally to professional groups, colleges and universities on various topics in research administration. She has received grants from the Carnegie Corporation of New York to support capacity building efforts for research management in several countries in Africa where she has conducted week-long university workshops for research faculty and university leadership. She has also received a grant from the Civilian Defense Research Fund to teach a research management workshop in Moscow, Russia, to faculty from 16 participating universities.

She received her Bachelor of Arts in British Literature from the University of Alabama at Birmingham in 1990. She received her Master of Science in Health Administration as a Summa Cum Laude graduate from Columbia Southern University in Orange Beach, Alabama in 1999. She is currently pursuing her Ph.D. in Community Health Promotion and Education from the School of Public Health at Walden University in Baltimore, Maryland. She is a member of the Cherokee Tribe of Northeast Alabama and the first in her family to obtain a university degree.

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Sister Marie Cooper is a professor at Immaculata University, teaching mathematics and physics and overseeing the Office of Sponsored Research.

In addition, during the last nine years, Sister has been part of and/or conducted a series of government- Sister’s own background includes teaching mathematics and science at the middle school, high school, and university levels. Her research and writing have centered on teaching and learning mathematics and science as well as the development and delivery of courses and workshop programs in mathematics and science for in-service teachers at the middle school and secondary school levels. Past associations have been as research
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Voice of Experience
VOE advances the tradition and service of the Journal of Research Administration by fostering consideration of and reflection upon contemporary issues and concerns in research administration as they arise from professionals in the field of service. VOE is a celebrated feature column in each edition of the Journal. It is under the corporate authorship of some of the most distinguished and seasoned members of SRA International who lead research administration efforts around the globe. Our 2006 VOE Authors are: Ms. Lynne Chronister, Associate Vice Chancellor for Research, University of California, Davis, Dr. Cliff Studman, Director, Pie Squared Consultants, Mr. Herb “Chuck” Chermside, Executive Director of Research Administrators Certification Council, (RACC), Mr. Paul Waugaman, Principal and co-founder of the Technology Commercialization Group (TGG), and Dr. Elliott Kulakowski, President, Research Administration and Management Strategy Group (RAM). Ms. Chronister serves as the 2006 Senior Writer and Column Coordinator. The success of VOE for the profession depends directly on issues and emerging topics of interest as they are articulated from our colleagues. If you wish to contribute, please contact the Journal Editor at journal@srainternational.org.
Putting the “Ethics” Back into Research Ethics:
A Process for Ethical Reflection
for Human Research Protection

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This manuscript does not represent the views or policies of the NJ Department of Health & Senior Services or the State of New Jersey. All views expressed in the manuscript are the author’s own. This manuscript received First Place for Best Paper in the Society of Research Administration International’s 2004 Symposium. The author wishes to thank the anonymous reviewers for the 2004 Symposium. The author wishes to thank Mary Faith Marshall, Ph.D., who first introduced the author to the work of Henry David Aiken in 1998, and Joseph Fins, M.D., who suggested the similarities between John Dewey’s pragmatism and the work of Aiken. The author also wishes to thank several reviewers for their comments on the manuscript: Lisa Hovey and Erica Rose, J.D.

Abstract
Regulations for protecting human subjects contain practical applications of ethical principles such as respect for persons, beneficence, and justice. Nevertheless, I contend that research ethics—from the perspective of Institutional Review Boards (IRBs), sponsors of research, and others involved in protecting human subjects—focuses more on “compliance with the regulations” and less on the ethical principles themselves. Compliance is important, but it can be too narrowly focused on “checking off boxes” and the bureaucracy of documentation. Without training in how to enliven the ethical principles governing research, it is little wonder that those involved in human subject protections spend the majority of their efforts on ensuring that protocols and informed consent documents contain regulatory required elements. The goal of this paper is to supply IRB members and others involved in human subject protections a framework for engaging in ethical reflection using their own ethical intuitions and in ethical dialogue with others who must protect human subjects.
Introduction

“When persons prevent their emotions from overtaking their rationality, it is called reason. When persons prevent their rationality from overtaking their emotions, it is called compassion. When persons can do both, it is called wisdom.”

—Ancient Chinese Saying

Research involving human subjects should be a partnership between the subjects who volunteer for the research, the public who hope to benefit from future drugs, devices, and biological products, investigators who design and conduct research, sponsors (institutions and companies that design, conduct, and sponsor or fund research), and IRBs who review research. I argue that “compliance with the regulations” governing research with human subjects has taken a front seat to broader ethical considerations of such research. While regulations contain practical applications of the ethical principles respect for persons, beneficence, and justice from such documents as the Belmont Report and Declaration of Helsinki, regulations do not explicitly reference these principles or provide procedures for ensuring that those who design, conduct, or review research have properly considered such matters.

Compliance is important, but it can become too focused on “checking off boxes” and the bureaucracy of documentation. As Dr. Gregory Koski (2003), former Director of the Office for Human Research Protections (OHRP), articulated, human research protection programs (HRPPs) need to move from a “culture of compliance” to a “culture of conscience” (p. S5). I argue that part of this shift in institutional culture involves re-discovering the ethical underpinnings of regulations for the protection of human subjects in such documents as the Belmont Report, the Nuremberg Code, and the Declaration of Helsinki. It is not enough to merely mention these documents in multi-center clinical trial protocols or IRB policy and procedure documents. Rather, the ethical principles in these documents need to be brought to life or enlivened during discussions of how to properly design, conduct, or review research.

Unfortunately, the number of findings from regulatory inspections from the Food and Drug Administration (FDA) and OHRP seems to indicate that there is a fundamental lack of training on the ethical principles themselves. The findings from such inspections consistently point to lapses in informed consent procedures and lack of investigator knowledge of human subject protection requirements. In addition, regulations provide little procedural guidance as to what the ethical substance of an IRB meeting should be like. However, regulations do provide checklists against which to document the presence or absence of certain required elements in protocols, informed consent documents, and recruitment materials.

Without training or experience in how to bring ethical principles to life, those who design, conduct, or review human subjects research will likely focus on ensuring compliance with regulatory requirements. In this way, they can at least be sure that the bare minimum of requirements has been met. This paper represents an attempt to supply those involved in designing, conducting, or reviewing human subjects research with a process of enlivening ethical principles by relying on a pragmatic framework for fostering moral discourse both within our own consciences and with others involved in these three research activities.

Origins of the Ethical Principles of Human Subjects Research

In 1979, the National Commission for the Protection of Human Subjects in Biomedical and Behavioral Research (the National
Commission) produced, arguably, its most influential report. The Belmont Report, so named because the members of the Commission met at the Smithsonian Institute’s Belmont Conference Center, articulated the ethical principles and philosophical basis for conducting research involving human subjects. The Report espouses three distinct ethical principles—respect for persons, beneficence, and justice—then provides practical measures for how these principles should be implemented in the design, conduct, and review of research (National Commission, 1979). The Report discusses the philosophical foundations of each of these principles and why each principle should be used in the research context. Discussion of these finer philosophical points is beyond the scope of this particular paper, but a multitude of philosophical sources, ranging from Aristotle, Immanuel Kant, John Stuart Mill, and David Hume, among others, find their thinking contained in the Belmont Report. The writers of the Belmont Report specifically intended and hoped that the Report and the three ethical principles would serve both as guideposts and reminders for those involved in designing, conducting, or reviewing human subjects research.

An “Ethics Gap” Between the Belmont Report and its Regulatory Offspring

It is not known, beyond mere anecdote, whether the Belmont Report enjoys wide dissemination to investigators (either in academic or medical settings or those in industry) nor to what extent the three ethical principles are part of education and training given to such groups. Moreover, it is not known whether those involved in reviewing research have read the Belmont Report, despite its free availability via the Internet on the FDA and OHRP websites.

What the Belmont Report provides in terms of philosophical justification and ethical analysis, it lacks in specific procedures for how its readers might employ the principles in designing, conducting, or reviewing research from an ethical perspective. Of course, that was and is not the purpose of the Belmont Report or the intent of its writers. Much of the practical import of the Belmont Report focuses on the translation of the ethical principles into their respective applications (respect for persons into the requirement to obtain informed consent, beneficence into the requirement to balance risks and benefits, and justice into the requirement of equitable subject selection). Current FDA, Department of Health and Human Services (DHHS), and international regulations governing human subjects research include each of the practical translations of the three ethical principles from the Belmont Report, yet no explicit mention of the ethical principles themselves appear in any of these regulations. Thus, there is a gap between the philosophical and the regulatory. Regulations mandate minimum requirements, but lack the specificity of procedural guidelines for how those who design, conduct, or review research should apply the ethical principles in their work. That is, and should not be, the purpose of regulations, for how would a government agency, institution, or company measure compliance with such an abstract notion as “ethical awareness.”

To summarize, there is a paucity of evidence that those involved in human subjects research are aware of and utilize the ethical principles from the Belmont Report in their daily work. Moreover, the regulations do not directly address or mention the ethical principles themselves. Given these two pieces of information, it is not clear that reliance on regulations alone to carry out the ethical work required for appropriately designing, reviewing, or conducting research with human involvement is sufficient to ensure that the intent behind the Belmont Report can be met.
This “ethics gap” between the Belmont Report and the regulations might result in any of the following deficiencies in those who design, conduct, or review human subjects research:

1. Lack of awareness of particular ethical problems in the research;
2. Lack of ability or knowledge of how to apply ethical principles (and thus lack of acceptable resolutions to ethical problems in research); and
3. Focus on regulatory compliance rather than the broader ethical context and issues raised by the design or conduct of the research itself.

**Bridging the “Ethics Gap:” Accreditation and Beyond**

A series of research tragedies and scandals in the past decade have resulted in increased governmental scrutiny and focus on human subject protection. Regulatory compliance in the United States, both from OHRP and FDA. As a result, companies and institutions have become more focused on regulatory compliance as well. This focus might even be responsible for widening the “ethics gap” between regulations and ethics.

Fortunately, recent efforts to accredit human research protection programs (HRPPs) and thus the move away from exclusive focus on regulatory compliance to broader considerations in human research protections should help narrow this widening gap. At the time of the writing of this manuscript, two groups were offering accreditation of HRPPs—the Association for the Accreditation of HRPPs (AAHRPP) and the Partnership for Human Research Protection (PHRP). Both groups produced standards by which they will assess HRPPs, and both sets of standards explicitly address the ethical training not only of investigators but also IRB members and staff. However, much like the Belmont Report, which articulates the ethical ideals to which those involved in research should aspire, the accreditation standards do not supply specifics on the mechanisms that institutions and companies should use to meet the standards. Thus, the purpose behind this paper.

I have suggested that without a process or framework for how those involved in designing, conducting, or reviewing research can enliven the ethical principles in their daily work, compliance concerns will rule the day and the “ethics gap” will widen. The process or framework that will help bridge this “ethics gap” must by necessity reference both regulations and ethical principles, but what else ought it to include?

A very interesting literature is emerging in bioethics that suggests the process of ethical inquiry and evaluation begins with our initial reaction to whatever is proposed for our ethical consideration. Authors have given different names or labels to this process or elements in it—the “Yuck” factor, intuition (Fins, Bachetta, & Miller, 1997), conscience (Callahan, 1988 and 1991), or listening to one’s “gut” feeling (Hayes, 1986; Wocial, 1996; Fletcher, Miller, & Spencer, 1998; Purtillo, 1999). Most authors agree, however, that this initial reaction requires careful consideration using facts, principles, rules, regulations, and other contextual aspects to the problem in order to reach the pinnacle of ethical inquiry and evaluation. While the work of these authors is primarily concerned with the resolution of moral dilemmas in clinical care settings, the frameworks used to supply clinicians and ethics consultants a process for assisting in the resolution of clinical issues might also serve to bridge the “ethics gap” in the protection of human subjects.
One of these approaches relies on the pragmatic philosophy of John Dewey. Termed clinical pragmatism, the goal of ethical inquiry is to tutor one’s intuitions or feelings about a particular situation, and using communication skills, facts, and ethical principles or rules as hypotheses to be explored and validated during the conversation, reach consensus regarding the alternatives identified (Fins, Bachetta, & Miller, 1997).

The goal of clinical pragmatism certainly matches the hoped-for outcome when an IRB considers a protocol or when a company seeks ethics advice for a proposed protocol or research design. Nevertheless, consensus is not the hoped-for outcome when an individual investigator believes an ethical problem exists in the design or conduct of the actual research. Perhaps an analogous process, drawn from others in the pragmatist tradition, would better suit all three human subject protection contexts discussed in this paper.

Like Dewey, fellow pragmatist Henry David Aiken was concerned with the process of moral inquiry and discourse. Unlike Dewey, the end point of Aiken’s levels of moral discourse, which I would argue are analogous to Dewey’s process of inquiry, is not consensus. It does pertain to reaching a decision, but it does not posit a specific outcome. Rather, the goal of Aiken’s fourth level of discourse involves asking and answering, for oneself and with others who share a particular moral problem, one question: “Why should I (we) be moral?” I maintain that asking and attempting to supply an answer to that question, in the context of working to protect human subjects and uphold their dignity, ultimately brings to life the question of ethics and reinforces the whole reason that research exists—to gain scientific knowledge while at the same time protecting those people who voluntarily assume the risks for such knowledge. The remainder of this paper will supply a summary of Aiken’s work and how this work can be adapted as one remedy to the gap between ethics and regulations and inform the ethical work required of those who design, conduct, or review research involving human subjects.

Aiken’s Four Levels of Moral Discourse and The Integrative Nature of Morality

Much of the history of philosophy has tended to either minimize the value of emotion in moral decision-making or suggest it negatively impacts the ability to make rational moral decisions. This received view has been intensely criticized lately, largely in part because of a renewed interest in the role of emotion in morality, and increased scientific understanding of the neurobiological bases of emotion. The combined evidence from these diverse areas of thought refutes the so-called “negativity” traditionally associated with emotions and their role in morality and posits emotion as an essential component of competent moral decision-making. In fact, much of the current thinking is that emotion is a necessary, key component of moral life—often its starting place. Several sources in philosophy and bioethics have suggested that the ability to feel conflicting emotions and obligations help us recognize the presence of a moral dilemma (Hayes, 1986; Sherman, 1990; Wocial, 1996; Fletcher, Miller, & Spencer, 1998; Purtillo, 1999). These conclusions are precisely the ones that philosopher Henry David Aiken drew decades before, when the “negativity” theory of emotion held philosophical sway among so-called cognitivists who attempted to reduce all moral judgments to our ability to rationally evaluate competing alternatives. Aiken believed that morality consisted in more than mere rationality.
To remedy the tendency of moral theory to be monistic and reduce all moral judgments to one governing principle or process of reasoning and exclude feeling and emotion from the moral realm, Aiken posits four distinct, procedural levels of moral discourse. The result of ignoring the integrative nature of morality, Aiken argued, is to misunderstand the role of several features of the moral life and put ethical discourse into interminable, irreconcilable, and profitless debate. Aiken’s framework incorporates the features of moral life that he finds lacking in other theories.

First, Aiken argues that a moral framework must acknowledge both the cognitive and emotive elements in moral decision-making and avoid the tendency to focus merely on one aspect or the other as determinative of morality. The same holds for subjectivity and objectivity; moral discourse has elements of both, and our theories should recognize this fact. Moreover, moral discourse must acknowledge the importance of reason, but also recognize its limits.

Aiken equates the first level of moral discourse with our unreflective, gut reaction to situations. He terms this the expressive-evocative level. Expressions of pleasure and displeasure vent our emotional reactions to events or situations. Shock at receiving a serious medical diagnosis, fear and uncertainty when confronted with one’s own mortality in battling a terminal illness, and a mother’s joy after delivering a healthy child are examples of expressive-evocative responses.

Aiken argues that normally there is no need to evaluate or reflect on such expressions of emotion; they are just personal, emotional manifestations of our pleasure or displeasure, “the venting of contrary—or perhaps merely different—emotions” (Aiken, 1962, p. 69).

Thus, to seek justification or to ethically evaluate the inherent wrongness or rightness of an emotive reaction is either senseless or it immediately shifts moral discourse to an altogether different level. This shift in moral discourse shows Aiken understood that to morally evaluate an emotive reaction requires more cognitively sophisticated tools of moral discourse.

The shift from the expressive-evocative level to more cognitive levels of processing suggests that, for Aiken, emotion and cognition are connected in moral discourse. The second level of discourse, the moral level, involves seeking justification for the “goodness” or “badness” of our expressive-evocative statements in light of two factors. The first factor combines an appraisal of the facts of the matter, the means of achieving the various moral outcomes, and the consequences that result from each. The second factor, the search for the rules or procedures that establish the relevancy of our appraisals, provides initial justification for particular moral actions.

Thus, our emotive reactions at the first level require factual appraisals and consideration of consequences and rules of thumb or guidelines that might fit the facts.

Given this view, it is nonsensical to base judgments about one’s conduct or actions solely on the basis of our emotive reactions. Our emotions are often strong, producing equally strong outward expressions, and, if we allow them, such expressions can control our decisions. The result can often be harmful, especially if we are trying to make decisions with others such as those made by an IRB or other bodies charged with protecting research subjects. Fortunately, the fourth level in Aiken’s model can counteract this tendency (whereas the third level, which will be discussed afterwards, concerns more cognitive processes).
Fletcher and colleagues describe moral ambiguity as the uniquely human ability to feel conflicting emotions and obligations (Fletcher, Miller, & Spencer, 1998). While moral ambiguity is normal, in morality “decision is king”: moral questions require answers and action (Aiken, 1962, p. 87). Aiken frames the solution to moral ambiguity by asking the paradoxical question “Why should I be moral?” He terms this fourth level “the human level,” because the ability to answer this question depends on the human capacity to be moved. Since the question concerns finding motivation for the human heart, Aiken argues:

I am “satisfied” and the question is “answered” not when some objective conditions have been met but when my practical indecision or doubt has been removed…. Here the only sort of justification possible is of the subjective sort which provides an “exciting occasion” capable of motivating the will (Aiken, 1962, p. 86).

Asking “Why be moral?” prompts examination of the motivations that human beings feel: to act morally, to express moral feelings, to define the terms of their moral rules, to seek justification for such rules, and finally to avoid lapsing into ambivalence or indifference regarding the essential practical character of moral life. In this sense, the question “Why should I be moral?” provides the human heart reasons for continued moral discourse and action when reason and emotion fail to motivate the will (Fletcher, 1998, personal communication). Thus, the ability to reach an ethically justifiable resolution requires more than the ability to bring rational tools of ethical analysis or rules and regulations alone to bear on the essentially practical nature of moral questions. If the decision to be reached involves others, as decisions in IRB meetings or other bodies for protecting research subjects often do, then maintaining respect and concern for others—seeing them as persons worthy of respect either as fellow participants in the moral dialogue or the object of such dialogue (the human subjects on whose behalf moral judgments are made regarding research)—becomes all the more important for remaining engaged in moral dialogue.

The first and last levels of Aiken’s framework provide the subjective, emotive elements of moral discourse. To counterbalance these, Aiken’s second and third levels include cognitive, reasoning elements. The second, moral level of discourse concerns the rational evaluation and search for the rules (and regulations) that justify our emotive reactions at the first level. Although normally most moral discourse need not proceed beyond the moral level, Aiken recognized that sometimes the rules can be in direct conflict or the options for action reached might be unethical. When such situations confront us, Aiken suggests their effect is “to throw doubt upon the validity of the rules themselves. And in that case, there is usually no alternative to a fundamental reconsideration of the whole moral code” (Aiken, 1962, p. 75).

Justification of an entire moral code occurs at the third, ethical level of moral discourse. Aiken terms this process ethical criticism. Even here, at the pinnacle of metaethical analysis, the concern remains practical—the resolution of contradictory reasons for implementing a particular moral decision, the removal of moral ambiguity. But, as Aiken has argued, removing our practical doubts requires not only the rational tools of ethical deliberation, analysis, and criticism, but also the uniquely human impulse that motivates the will into action and facilitates our intuitive grasp that events require our moral attention.
The diverse sources surveyed thus far suggest that emotion plays several important roles in morality: early detection system, facilitator of our morally perceptive abilities, and moral motivation and perseverance during the sequence of moral discourse and investigation. The question to be answered, however, is how to resolve such moral dilemmas, especially those involving the protection of human subjects, and to what extent does the framework that Aiken espouses relate to the process of ethical reflection in which those involved in the protection of human subjects engage.

Applying Aiken’s Levels of Moral Discourse to Work in Protecting Human Subjects

According to the framework Aiken presents, when designing, reviewing, or conducting research, we begin with our initial, emotive reaction to the protocol. Perhaps the design will involve a placebo-control arm for an anti-infective trial to be conducted at a variety of sites, several of which are located in developing nations. The person designing such a trial may feel an initial gut reaction against such a design. So might the person who is called on to review and approve such a protocol on an IRB or the person selected in the developing nation to actually supervise the conduct of the trial. But why? And, do these initial moral objections from three different persons have the same basis?

To reject, out of hand, such a trial design at this stage of moral consideration would, according to Aiken, be inappropriately hasty. In order to answer the questions posed, we need more information, and we must appraise that information in light of existing rules, moral standards, and regulations. We must escalate our initial emotive reaction to the second level of moral discourse. Perhaps the protocol author consults the International Conference on Harmonisation (ICH) Good Clinical Practice (GCP) guidelines, the set of regulations that usually govern international clinical trials. These guidelines do not explicitly prevent a placebo-controlled arm, but a full reading and understanding of them does suggest to the trial designer several items of moral consideration, namely:

1. Protections for vulnerable subjects (ICH E6, 1996, regulation 1.61)
2. The rights, safety, and welfare of subjects takes priority over the interests of the science (ICH E6, 1996, regulation 2.3)
3. Only qualified individuals should be involved in trial design (ICH E6, 1996, regulation 5.4.1)

Since the trial will likely involve impoverished persons in developing nations, the designer should ensure that additional protections are in place to safeguard these vulnerable persons. Perhaps an independent data monitoring committee should be used to monitor the safety of all subjects, for example. For the sake of argument, let us say that the addition of this safeguard assuages the protocol designer’s initial objections to the trial design, and he submits the protocol for approval at the local sites. This situation is analogous to Aiken’s claim that rarely do we need to move beyond the second level of moral discourse in order to reach a resolution to our moral ambiguity. In this case, consulting relevant rules and regulations helped guide the protocol designer’s inner moral dialogue.

Perhaps one of the protocol reviewers questions why the trial needs a placebo-controlled arm at all. Perhaps he or she believes that despite all of the safeguards the trial designers have added, it is unjust to subject particular volunteers to a placebo when there are other, beneficial alternatives available to participation in the trial. In order to receive
Research

approval to conduct the research, perhaps the reviewer mandates that the company provide the most efficacious anti-infective currently licensed to the local population not participating in the study. Such a suggestion would represent Aiken’s third level of moral discourse, because the options generated at the second level of discourse still meet with unacceptable consequences and further dialogue is required. With this suggestion, the reviewer is engaging in a creative reconceptualization of the ethical principle of justice. It is not merely enough to ensure a proper balance of benefits and burdens on the population to be selected; benefits to those in society at large should be provided to counterbalance the potential burdens to volunteers who might receive a placebo.

Perhaps, as a matter of science policy, the reviewer strongly believes that such considerations of respect for persons, beneficence, and justice should be built into any protocol that seeks to use human volunteers in developing nations. Changing the Declaration of Helsinki, the Council for International Organizations of Medical Sciences (CIOMS) Ethical Guidelines, or other international codes of research ethics would represent an attempt at achieving Aiken’s fourth level of moral discourse. Surely, championing such changes would require additional debate and consideration at many levels, but having the moral courage, stamina, and perseverance to attempt such systematic change on a global level would foster the sort of moral discourse that strives to improve human flourishing, which should be ultimate goal for ethical discourse.

Conclusion

Utilization of Aiken’s four levels of moral discourse can assist those called on to review research from an ethical standpoint gain clarity around their own ethical intuitions and work better as a group to reach decisions about ethical issues during IRB meetings. In addition, use of the framework can help instruct those who design and conduct such research in considering the ethical principles of respect for persons, beneficence, and justice from the perspective of the human subjects who will volunteer for such research. Table 1 illustrates the progression through Aiken’s four levels of moral discourse as a tool that can add ethical substance to human subject protection considerations that begin with the initial feeling of “Uh, oh,” “Hmm,” “Ugh,” “Yuck,” or other indications of moral ambiguity. The second level would feature infusion of relevant rules, regulations, guidelines, and consideration of ethical principles. The third level would include interpretation and analysis of the ethical principles from the Belmont Report and other sources in relation to the research under design, review, or implementation, and perhaps reconceptualization of these principles in a new light to yield resolutions that might, at the fourth level, increase human flourishing and health, which is, after all, the ultimate goal of all research.
Table 1. The Four Levels of Moral Discourse

<table>
<thead>
<tr>
<th>Level 4 (Emotion)</th>
<th>Level 1 (Emotion)</th>
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<tr>
<td>Level 3 (Reason)</td>
<td>Level 2 (Reason)</td>
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References


The Role of “Development” in a Research Administration Office

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Authors Notes
The development and ideas for this paper derived from a presentation to the Midwest Regional SRA /NCURA Conference in May 2005 and a concept paper presented at the 2005 SRA International Symposium. In the original presentation, we discussed how Illinois State University has developed some unique strategies through the Research and Sponsored Programs Office in assisting faculty and staff procuring external funding for their programs and projects. The concept paper presented at the 2005 SRA International Symposium examines other universities and the field of higher education response to the ever changing environment of decreasing state appropriations, increasing and diversified student populations (traditional and nontraditional), and demands by state, federal and private funding agencies to develop collaborative relationships with other organizations in order to promote the transfer of services and technology to the general public.

Abstract
Institutions of higher education are facing the challenges of decreasing state and federal funding, increasing numbers of traditional and non-traditional students, and imposed limits on tuition charges. At the same time, federal and state governments are directing institutions of higher education to collaborate not only with one another, but also local community agencies, under represented populations, K-12 school districts, and nonprofit organizations. Institutions of higher education consequently need to develop innovative programs to meet these needs generated by government agencies. The purpose of this paper is to discuss how some of the challenges facing institutions of higher education today might be met through expanding the activities associated with “development” to include facilitating the expansion of programs and services, and devising strategies to procure additional externally sponsored funding for these programs and services. Specifically, sponsored programs offices are often directed by their upper administration to develop such programs and assist faculty and staff in finding the external funding to make them possible, and are probably in the best position to do so.
Introduction

This paper will essentially examine the demands for U.S. institutions of higher education to develop externally sponsored programs as an answer to the increasing challenges placed before them and the methods these institutions are using to do so. An institution of higher education will be defined in this paper as an organization that provides associates, bachelors, masters, and/or doctorate prepared degrees to qualified individuals.

State and private institutions of higher learning will be examined. Although there are some philosophical and funding differences between state and private institutions of higher education, they are still faced with many similar problems in creating innovative services and programs for society. Both state and private institutions also solicit and receive funding from common sources, including: (a) federal and state agencies, (b) private and corporate foundations, and (c) industries. Since both state and private institutions of higher education are facing these similar challenges, both will be examined and included in the definition of an “institution of higher education”.

As society has become more complex in the twentieth and twenty-first centuries, there have been increasing demands for institutions of higher education to offer new services, and become more adaptable to the world’s changing needs. With the evolution towards globalization, higher education institutions are challenged to transform their way of doing business while at the same time facing many roadblocks.

The United States (U.S.) has changed rapidly since the end of World War II, from 1945 to 2005. Institutions of higher education have played a highly significant role in not only preparing the U.S. population for the technological changes taking place, but also bringing many innovative technologies and policy changes to U.S. society in those 60 years. Consequently, state and federal legislators, who have been pivotal in funding many of the innovative research and service programs to institutions of higher education during that time demand that the education sector continue to develop and create opportunities for the ever-changing U.S. and international society—be it innovative curriculums, community service, or new technologies. The challenge of doing so is only compounded by the limitations of resources—the most limiting being lack of funding.

The downturn in the U.S. economy has effected all institutions of higher education institutions. State institution’s budgets are most directly affected through reductions in their government appropriated dollars. However, all institutions of higher education have had to respond to the limitation on dollars available from external funding sources, and the burden of increasing external funding is often placed on the sponsored programs offices. To do so, though, requires an expansion of the role of such an office. If we expand our view of Sponsored Programs Offices as facilitators to also include development, we see great possibilities in providing the needed resources to assist institutions of higher education in meeting some of the challenges they face today.

Traditionally, the role of development is defined as assisting institutions of higher education in developing strategies and creating relationships specifically tied to fundraising activities with the target audience being individuals or corporations providing gifts to such institutions. As we discuss development here, our definition differs from the traditional definition of development, above,
to include state or federal government or corporate entities providing funds through contracts or grants.

The duties and tasks of Sponsored Programs Offices are varied. Every research office is organized differently according to each organization’s structure and mission. However, the goal of all Sponsored Programs Offices should be to facilitate the procurement of funding for sponsored programs, and the administration of the programs brought to fruition. Sponsored Programs Offices are the institution’s rules enforcer and liaison with funding agencies and organizations for institutions of higher education. They play a pivotal role in interpreting and following federal and state guidelines for funding programs, and assuring compliance with institutional, state, and federal regulations, as applicable. Sponsored Programs Office personnel are also strategically positioned to advocate for faculty and institutional specializations while also identifying funding opportunities.

Society looks to institutions of higher education to resolve the academic and research needs of the world. Today’s challenges in meeting those needs include providing access to an ever-changing population and expanding upon and imparting the knowledge and technology required for a global economy. To answer these challenges while facing budget cuts further complicates the issue. Many institutions are focusing on increasing external funding, either through gifts, and/or grants and contracts. The sponsored programs office cannot increase the number and dollar of grants and contracts simply by requesting our faculty and staff increase their submissions. Instead, we must familiarize ourselves with the strengths and weaknesses of our institutions; develop collaborations and programs focused on those strengths, and strategies for procuring funding to support such programs. As we will see, through use of Illinois State University as a case study, a wide variety of activities may be introduced to achieve these objectives. A planning tool will also be offered to assist in determining the level and degree to which various institutions of higher education might be able to accommodate these activities.

Challenges for Higher Education in the Twenty-First Century

The downturn in the U.S. economy in 2000 had immediate and far reaching repercussions for higher education funding. For example, higher education competes for state resources with programs such as Medicaid, elementary and secondary education, transportation and the department of corrections, to name a few. Because institutions of higher education have the capacity to raise funds through tuition, legislators often feel that education organizations have more flexibility to survive than traditional state agencies that are solely reliant on general appropriated funding. For this reason, in many states, higher education was targeted with a disproportionate share of the budget cuts.

As an example, funding for public institutions in the State of Illinois has been declining since 2002. Hebel (2004) reports that funding for Illinois public institutions declined 1.7% in 2004 and states in the Great Lakes area continue to lag behind the rest of the nation in rebounding from the economic recession in the early 2000s. Additionally, even states whose economies have begun rebounding have not returned to pre-2000 funding levels for institutions of higher education.

While these funding cuts have certainly made it difficult to manage the daily operations of an institution of higher education, the greater challenge is in providing the new programs...
Commentary

and services our society and governments require with these limited resources.

The primary challenge to higher education institutions today is in providing access and personalized service to a larger, further diversified, population of students. In 2009, it is projected that 3.2 million students will graduate from high school, the largest class in the country’s history. The largest class to graduate previously was in 1977. In 1977, 51% of the graduates went on to pursue a postsecondary education, in 2005, 68% of high school graduates enroll in college (Selingo, 2005).

This large enrollment of high school graduates is compounded by nontraditional and adult students returning to university or community college campuses, taking college courses at off-site locations, enrolling in classes offered through their employer, or enrolling on-line to receive an additional degree or more training. By the end of 2005, 1.2 million college students will be enrolled in college fully online, up from 438,000 in 2002. By 2007, that number is expected to jump to 1.7 million (Selingo, 2005).

Tuition costs at institutions of higher education continue to rise, principally because of decreasing support from state governments. This is causing an increasing amount of college costs borne by students and families. Access and affordability of higher education is being threatened. High academic achievers among low-income students have limited opportunities to attend college. They are no more likely to attend college than the lowest performing wealthy students. It is becoming that universities are attracting principally higher and middle income students and less lower-income students.

A recent survey developed by Chicago Public Schools illuminates the problem of low income, minority students going to college (Cholo, 2005). About a third of Chicago Public Schools high school graduates who planned to attend college did not enroll in the fall semester. There were 18,144 students that graduated from Chicago Public Schools in 2004. The percentage of 8,741 Black students that attended college was 46%, Latino students numbered 6,198 with 38% attending, White students numbered 2,206 with 60.2% attending, and 999 Asian students graduated with 76% attending college.

Universities, since the passage of the Civil Rights Act in the 1960s, have become increasingly more committed to assisting first generation, low-income and underrepresented minority students attend college and earn undergraduate and graduate degrees. Reduced funding as proposed by the current 110th Congress (2006) and the Bush administration will make it more of a challenge for institutions of higher education meet their goals of assisting students from these target populations attends college, as evidenced in the statistics presented on the Chicago Public Schools, above.

The Bush Administration in 2006 is proposing to eliminate 43 programs in the U.S. Department of Education which provides $4.1 billion to schools and universities. Programs that are proposed to be eliminated for FY 07 are in elementary and secondary education, improving high school achievement, elimination of programs that traditionally assist low income, minority and first generation college students. It is also proposed that eight programs in higher education be eliminated in the Office of Postsecondary Education at the U.S. Department of Education and freezes the rest of the programs at the 2006 enacted level. Pell Grant awards
for students remain frozen at $4,050, which has remained constant since 2003, while the average tuition and fees at a four year public college have risen to $1,393 (Spratt, 2006).

A second challenge brought before institutions of higher education through state and federal governments is the emphasis on collaboration between institutions of higher education, nonprofit organizations, K-12 school districts, state agencies, faith based organizations and municipalities. This movement to encourage collaboration became institutionalized by many federal agencies in the 1990s.

For example, the United States Department of Agriculture (USDA) in the late 1990s developed the slogan of the three C’s to promote various organizations to receive funding for Economic Development Empowerment and Enterprise Zones. The three C’s are Cooperation, Collaboration, and Consensus. This program encouraged universities, rural development nonprofit organizations, municipalities, businesses and school districts to be involved in a very complicated and time consuming planning activities to compete to become one of the successful recipients.

Many more federal agencies now have made collaboration a focus, if not a requirement, for funding certain programs. Funding agencies as disparate as the National Institutes of Health (NIH), Department of Education (DOE), and Department of Housing and Urban Development, among others, all encourage collaboration in their Request for Proposals (RFPs) for competitive grant programs.

State governments are following the federal government in calling for more collaboration for institutions of higher education with other organizations. The Illinois Board of Higher Education (IBHE) administers the Higher Education Cooperation Act Grants. The purpose of this particular grant program is “to support programs of inter-institutional cooperation in higher education that promote the efficient use of educational services, the development of innovative educational concepts that effectively deliver educational programs and involvement with the local community(Illinois Board of Higher Education, 2005, p.1).” Eligible applicants are described in the RFP as including at least two public or private higher education institutions. Not-for-profit corporations organized to administer programs in inter-institutional cooperation of higher education and Illinois public schools also may participate in these programs (Illinois Board of Higher Education, 2005).

The increasing demands for institutions of higher education to develop collaborations or interact more with other organizations for competitive and non-competitive sources of funding means that there will be increased administrative costs. Many institutions of higher education are suspicious that the focus on collaborative programs is a strategy by federal, state and private funding agencies to shift the cost of administration from the government sector to that of higher education. The increasing complexity of developing partners and collaborative programs has led to institutions of higher education being forced to spend more time in planning and relationship development with other organizations. This means that institutions of higher education bear more of the cost in developing unfunded projects than in the past.

Institutions of higher education are facing the problems of (a) declining state revenues for higher education; (b) increasing student numbers, both traditional and untraditional and; (c) federal and state government and private
funding agencies demand for more collaborative programs that makes it more costly and complicated for developing projects than in the past. Higher education institutions are in need of resources to manage these problems, or challenges. Within a higher education institution, who is responsible for acquiring these resources? More and more often, upper administration is turning to Sponsored Program Offices—charging those offices with increasing externally funded grants and contracts.

**Programs Developed in Sponsored Programs Offices**

Sponsored Programs Offices have traditionally played the role of facilitator for faculty and staff during the grant application preparation and submission process, and throughout the life of a funded project. The functions of the Sponsored Programs Office are typically categorized as pre-award, post-award, and compliance. Each Sponsored Programs Office carries out these activities to a different degree, with the resources and personnel available for these functions dependent upon the institution’s level of funding, organizational reporting lines, and outlook on research. The role of facilitator requires review and interpretation of institutional, state, and federal guidelines and regulations, as applicable. It also includes acting as liaison between faculty/staff and funding agencies, or vendors and subcontractors. Often the sponsored programs offices have oversight or administrative duties associated with the Institutional Review Board and Institutional Animal Care and Use Committee, overseeing the use of human subjects and animals for research purposes. All of these traditional activities focus on facilitating the funding process for an existing, previously developed, idea or program.

However, Sponsored Programs Office personnel, or those with research administration experience, are maybe best strategically positioned to advocate innovative programs while also identifying potential funding sources. They are familiar with the strengths of the institution, the fundability quotient for certain programs, and potential funding sources. They are best situated to develop ideas and programs, and bring them to fruition.

To this end, Sponsored Programs offices across the country have been developing new ways to assist their institutions in meeting these very demands for new programs and services. The emerging trends, revealed in an informal survey, are to create satellite offices or new positions within the existing office to offer various support services required in the development process.

Research and Economic Development offices have been developed by institutions of higher learning to assist communities and regions. Some functions of these offices are (a) developing research parks for specific industries; (b) creating collaborative partnerships between communities, regions and institutions of higher education to attract industry funding; (c) developing business incubators for small businesses both on campus and in the community; (d) providing grant writing and professional expertise to attract federal and state funding for economic development projects for the community; (e) developing centers specifically that will attract industry, examples of these being in the areas of biotechnology, nanotechnology and health and; (f) providing expertise in technology transfer and intellectual property primarily for faculty and staff in transferring basic research to the marketplace.
A recent survey by Wake Forest University found that economic development programs for universities and the communities they serve is becoming increasingly important. Wake Forest University surveyed one senior research administrator from each of 250 research universities. Their survey showed that over 50% of the universities play a large role in economic development and technology transfer, with 41% playing a slight role. The survey also revealed that larger universities with more than 10,000 undergraduates and research-extensive universities are more likely to be more assertive in developing economic development programs than institutions with less than 10,000 undergraduates or research intensive universities (Wake Forest University, 2005).

Typically, all interactions between state and federal government and institutions of higher education were coordinated through an Office of Government Relations, or a governmental relations position reporting directly to the institution’s president. Some university Sponsored Programs Offices have developed within their auspices Federal Relations Offices to deal with the increasing complexity of finding funding and maintaining contact with elected officials. The rise in congressionally-authorized grants or earmarks for organizations has made it increasingly more important for institutions of higher education to remain in contact with their elected representatives. Direct funding from state and federal agencies, especially through contracts and noncompetitive grants also makes it necessary for institutions of higher learning to develop contacts and relationships with department officials and program officers.

Some functions for Federal Relations Offices are (a) selecting and advancing a short list of proposals from the university seeking congressionally authorized grants; (b) writing congressional briefings and presentations of programs; (c) identifying expert witnesses selected from faculty and staff to make presentations to congressional committees; (d) developing strong relationships with elected officials, legislative staff and agencies to advance the organization’s mission; (e) writing policy or briefing papers on federal policies and regulations and; (f) organizing events in Washington DC and on the home campus for legislators and their staff.

Institutions of higher education are developing a more aggressive strategy in pursuing earmarked projects for funding. Although a federal relations office might coordinate activities related to the pursuit of federal earmark dollars, many universities are hiring lobbyists to handle those activities. Those lobbyists, then, work through an office or position created to facilitate governmental interactions related to sponsored programs, or at least with the knowledge of, and in conjunction with, the sponsored programs office. The total number of earmarks or ‘pork barrel spending’ dollars for charities and government entities has increased six fold since 1994. (Special Report, 2005)

Another type of support offered through sponsored programs offices or through a satellite office provides research consulting services. These offices or positions generally assist in the development of proposals, search for interdisciplinary opportunities, build teams (both external to the institution and internal), and identify funding opportunities. They may also delve into the grant-writing through development of boilerplate language for use in proposals and editing proposals.

Some of the schools providing these innovative development services are the University of North Carolina, Louisiana State
University, University of Kentucky, Western Michigan University, University of Washington and Ball State University. Each offers additional services beyond the norm for those faculty and staff interested in promoting sponsored programs and ideas and each are taking a proactive role in their university’s growth.

**Illinois State University as a Case Study**

Several years ago, just prior to Illinois’ budget problems, upper administration charged our Sponsored Programs office with the task of increasing external dollars. To do so required a review of the university’s strengths and weaknesses, and development of a strategy.

Illinois State University is a predominantly undergraduate university located in Normal, Illinois. Fiscal Year (FY) 04 data indicates 18,500 undergraduate students and 2,553 graduate students were enrolled and forty-three doctoral degrees were conferred. Colleges at Illinois State University are Arts and Sciences, Applied Science and Technology, Business, Fine Arts, Nursing and Education.

The total Illinois State University budget in FY 2004 came from the following sources: (a) State of Illinois appropriations, 29.6%; (b) tuition and fees, 31.7%; (c) auxiliary enterprises, 21.9%; (d) government grants and contracts, 8.6%; (e) grants, contracts, gifts, 1.0% and; (f) other sources, 7.2%. Grants and contracts make up about 10 percent of the total funding allocations. However, these funds have been the focus over the past few years as they show more potential for growth than state appropriations, tuition and fees and auxiliaries.

Funding levels for externally sponsored projects at Illinois State University for the years 1999-2003 are shown in Figure 1.

**Figure 1. Illinois State University, External Funding Dollars, 1999-2003**

Illinois State University external funding for FY 04 was $20.5 million with 319 total grant awards. External funding has increased by 19% in the last five years. Generally, increases have been in Federal funding, while there were decreases in state and corporate sources between 2002 and 2003. Funding from these sources increased in 2004, but not to the same levels as 2001. The State of Illinois has significantly decreased funding to public institutions of higher education both in appropriated funding and competitive grant programs since 2002 because of the economic recession which began in 2001. Although there has been some...
economic resurgence since 2003 in the Illinois economy, appropriated funds for institutions of higher education have not reached the same levels as 2001. However, Illinois State University has received more federal pass-through funding distributed by the State of Illinois for primarily education programs since 2001.

Federal funding has continued to increase for Illinois State University. Primarily, this is because of a more concentrated approach by selected faculty to write competitive grants for federal programs and an organized attempt to procure more federal legislative earmarks from the Illinois Congressional Delegation. Pursuing federal funding opportunities has assisted Illinois State University to continue to grow despite shortfalls from the state and corporate sectors.

Illinois State University was awarded over three hundred grants and contracts last year. Very few of these grants or contracts exceed $100,000. Therefore, the Sponsored Programs Office expends a great deal of time administering a lot of small projects. The Research and Sponsored Programs Office for Illinois State University is organized as illustrated in Figure 2.

Figure 2. Illinois State University, Research and Sponsored Programs Office Organizational Chart

There are nine persons employed by the Research and Sponsored Programs Office at Illinois State University. The Director of Research and Sponsored Programs oversees all functions and persons in the office. The Director reports to the Associate Vice President for Research. Four persons are in the pre and post award department and they are responsible for management of data, mailing and copying of proposals, review of submissions, and negotiation of grant agreements and contracts. The compliance section, which includes Internal Review Board and Internal Animal Care and Use Committee, employs three full-time persons and one part-time veterinarian.

One of the assistant directors is filling a position created a few years ago as the Sponsored Programs Office was charged with increasing external funding. Our Associate Vice President of Research realized the only way to do that was to have a staff person devoted to team-building, increasing multi-disciplinary partnerships, and making contacts at the state level for contract work, and the federal level for earmarked dollars. This assistant
director position is really a hybrid position providing some of the services traditionally housed within a Sponsored Programs Office, but adding components you might ordinarily find within governmental relations and development units. The first few months in this position were spent interviewing faculty and staff, analyzing the institution’s strengths, and beginning to set up teams.

At about that same time, Illinois State University also hired a lobbying firm and the new assistant director began developing a notebook of brief proposals that Illinois State University would present to the congressional delegation. The work has progressed now to their assisting Illinois State University in setting up meetings with program officers in Chicago, Springfield or Washington DC, developing partnerships with outside organizations, writing support letters and proposals or planning documents as needed, and assisting teams in planning. One time-consuming aspect of this job has been in developing relationships with other organizations. Illinois State University has worked on developing partnerships with associations, school districts, community colleges, businesses and other universities as a means of qualifying for some of those federal programs specifically requiring collaborative activity.

In adding services to the Sponsored Programs office, we found a necessity to refocus or change the duties of the other staff. Some of the new activities, programs, and services we have instituted in the last couple of years are collaborations among the several functions of the office; others are solely the responsibility of the pre-and post-award areas, others the new assistant director manages. All, though, promote externally funded programs, motivating faculty and bringing a “development” focus to the office.

We offer various trainings at both the department and college levels—arranging a special meeting time or joining a regularly scheduled departmental meeting. These trainings include a combined “finding funding/submission process” presentation, hands-on funding searches within a computer lab using various searchable databases, and special sessions presented by visiting program officers. Illinois State University hosted a regional NEH meeting on campus last year and brought several program officers from the State of Illinois on campus. This fall, we will be hosting an NSF day with program officers. This will be open to any institution in the state of Illinois.

The Sponsored Programs Office has devised several incentives programs in our attempts to encourage grant-writing efforts. Several universities are offering similar incentives. A travel award program was instituted to provide funds for travel to meet with program officers, and/or cooperating institutions if directly related to grant-writing. The grant-writing initiative award is a new competitive program designed to provide dollars as an incentive to write grants as well. A recognition reception is held each spring to acknowledge all faculty/staff who submitted grants in the previous year—funded or not.

Some of the development activities aimed at the pre-submission stage are meetings with external funding agencies with the goal being to build relationships for future projects, and further into the lifecycle of a project, facilitating the application process. There have been appointments with agency and program officers in Chicago, Springfield, and Washington, DC, about specific grant opportunities and research interests.

Another activity we engage in is to arrange “brown bag” lunches with faculty to discuss common research interests and potential
funding sources. These are promoted as multi-disciplinary efforts. Topics covered in the past include bioterrorism, geriatrics, teacher recruitment, and nursing. We also will “shop” projects to various funding agencies—researching hot topics, and then promoting those programs within the university that meet each funding agency’s priorities. And lastly, our assistant director in the development area will act as an ad hoc team member—writing abstract proposals, taking minutes at meetings and disseminating, and setting goals for the team. If external partners are identified, he arranges meetings with those individuals and coordinates the effort.

The objective for all of these activities is to develop: (a) new ideas, (b) programs from existing ideas, and (c) relationships with collaborators and funding agencies to promote the programs. The ultimate aim is to increase external funding providing resources that will allow the university to meet the needs of the student population and promote the transfer of services and technology to the general public.

Conclusion
The rapid changes in society both in U.S. and internationally will cause institutions of higher education to have to become adaptable and flexible for change. Sponsored Programs Offices will become the drivers for change and will need to assist administration at institutions of higher education to assist in meeting with the community and developing strategies for finding the funding to provide services for projects, programs or centers.

Strategic or long-term planning is a complicated process that needs the input of many participants. The questionnaire developed does not intend to take the place of these needed planning tools. Instead, the purpose of this suggested planning tool is to assist Research and Sponsored Programs by providing an abbreviated approach to begin assessing their ability to develop ways to respond to opportunities and demands either internally (institution of higher education) or externally (state, region or community) in providing additional services or demands.

Questions that can be discussed in the planning session are:

1. What development activities are currently in place by Research and Sponsored Programs Offices?
2. Can your office expand these services using current personnel?
3. What new projects do you anticipate the administration of your institution will ask Research and Sponsored Programs to create or develop in the next five years?
4. Are there demands by state government, regional entities or the community for your institution to meet needs for employment, training or creating centers in the next five years? If so, what will be the demands on Research and Sponsored Programs to provide services for the creation and administration of these collaborative efforts?
5. Will Research and Sponsored Programs need to have additional funding or personnel to create or administer these new programs?
6. Will administration in your organization be supportive of providing the additional resources for development?

The planning session that discusses these issues may come up with ideas on how to provide more outreach to faculty and staff in writing competitive grant proposals without having to add more personnel for the office. External demands may be identified as the need to work more closely with the community to develop business incubators, creation
of jobs and research parks. These activities will mean that there will be a need for more additional personnel and perhaps the creation of new departments in the Research and Sponsored Programs Office. Challenges for higher education will continue to grow in the twenty-first century and it will be essential for Sponsored Programs Offices to work with their internal and external clients for developing innovative programs and strategies.

References


International Commentary

Research Management in Southern African Higher Learning Institutions

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Author’s Note

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Abstract

Contemporary Southern Africa is characterized by a lack of innovation system at the national level and a corresponding lack of research management in the national university. A consequence of this is that the region is not as yet positioned to harness science and technology for its economic development. This deficiency is the major factor contributing to the continuous lack of economic growth in the region despite the prevalence of natural resources such as minerals and other natural advantages like extensive coastlines. By contrast, the developed world has moved beyond science and technology development to innovation. The result is that these countries are increasing their national wealth through expanding their share of the global market for goods and services which derive from science and technology-based innovation. Using the innovation success achieved in the western world, especially by universities as a model, I attempt to point out where gaps exist in some countries of Southern Africa and how the sub-continent can arrange itself through research management to meet development challenges of the time. I have adopted a national perspective for argument in view of the fact that research management brings together the entire national system of innovation.
International Commentary

Introduction

Contemporary Southern Africa is characterized by a lack of innovation system at the national level and a corresponding lack of research management in the national university. A consequence of this is that the region is not as yet positioned to harness science and technology for its economic development. This deficiency is the major factor contributing to the continuous lack of economic growth in the region despite the prevalence of natural resources such as minerals and other natural advantages like extensive coastlines. By contrast, the developed world has moved beyond science and technology development to innovation. The result of this is that these countries are increasing their national wealth through expanding their share of the global market for goods and services which derive from science and technology based innovation.

The developed countries have come a long way with technology-based development. They have satisfied the first pre-condition for technology transfer, which is to establish a strong science system. Next, technology development and technology transfer systems which are based on national economic needs and the global market are firmly in place. For technology development to occur, at least two things must come together: (1) social and physical infrastructure or human resources and (2) the machines. The developed world has all of that. However, a major requirement is the presence of a political will that should manifest itself through an overarching framework of a national research and an innovation strategy that largely works to implement the national science and technology (S&T) policy. Again, this exists in the developed world. The technology transfer system does have underlying dynamics which need to be understood if expectations from investment must be realistic. These underlying dynamics include the likely size of returns, time taken to generate a positive return, and the variability of outcome. Through successful harnessing of these, the developed world continues to increase its economic strength.

Using the innovation success achieved in the western world, especially by universities, I attempt to point out where gaps exist in some countries of Southern Africa and how the sub-continent can arrange itself through research management to meet development challenges of the time. I have adopted a national perspective for argument in view of the fact that research management brings together the science system, the technological set up and the government, especially for funding innovation. Political will is necessary in order for the nation to mobilize adequate funding that is required to set up and implement a functional innovation system which would be the engine of economic growth. I go to some length to explain the need for research and innovation management, which I argue is necessary to minimize risk, simply because technology development and technology transfer are both risky and expensive activities, especially within the context of developing countries generally, but more so over Southern Africa. I posit that effective research and innovation management are needed to enhance the value of science and technology in the Southern African culture. I further posit that this goal of enhancement is extremely important if science and technology are to assist Southern African communities to experience substantive growth within the global economy. However, there is currently concerted effort within some African countries to attempt entry into the global market through indigenous technology and also through efforts to lay a foundation for innovation based national development via strategic funding arrangements, as shown later. To some extent, this move has been initiated through the Southern African Develop-
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The SADC Community (SADC) when in 2000, the Community encouraged its member states to create a Ministry of Science and Technology as the first major step towards increasing the growth and management of technology-based innovation. However, the fact that the SADC secretariat does not have a desk officer for its Science and Technology portfolio, when it has an officer for every other portfolio, seems to underscore the Community’s lack of sufficient appreciation of the role of S&T in the economic development of the Community. Only in 2004 did SADC produce its first Strategic Plan for Science and Technology. Clearly, this portfolio would move very slowly due to a lack of a desk officer.

Research and Innovation Management in Southern Africa

The positive linkage between research and development (R&D) on the one hand and economic development on the other is no longer an issue for debate. What remains less appreciated is the critical role played by research management in facilitating economic growth through a nationally structured technology development, transfer and an innovation system. For example, while it is acknowledged that there exists a linkage between technology development, technology transfer, innovation and wealth creation, little do we realize that it is not merely R&D but well directed R&D that leads to new products and services. R&D must be well directed because of the high risk of failure involved in the commercialization of research. In order to minimize that loss the risk needs to be managed. That is what research and innovation management attempts to achieve through maximising value from research and innovation activities and ensuring strategic alignment at a departmental, organisational and national level. Ideally, there should be complementarity between the entire research process in the tertiary institutions such as the universities, the government and private sector operations. That brings about the innovation system at the national level. Walwyn (2004, p.5) stated, “Research and innovation management introduces processes for the identification and management of research risk, and it assists in the selection of the most attractive investment options from a multitude of possibilities.” Optimal investment in S&T for innovation is especially essential in the less developed countries where there is an acute shortage of resources necessary for expanding the national economies through innovation.

Economic development does not occur in a vacuum. The economies of developed countries such as Japan and the United States are backed by strong technological initiatives and successful innovation. The innovation as well as the technological development of these countries is based on a strong science system, which is defined by the different research councils, while the innovation is largely based on the successful linkages between the outputs of technology or R&D institutes and the market. Such economies tend to be well diversified through a well coordinated national innovation system. Knowledge management, especially through skilful use of the Information Technology and the cyberspace in general, is central to the structure and functioning of these economies. In them there is continuous gathering and processing of all types of information which is necessary for meeting economic demands across the whole world. The economies use the information to re-position themselves as necessary in order to take advantage of changes in opportunities. For example, Heher (2004, p.12) states, “In 2002, universities in the USA and Canada earned US$1.2b from the commercialization of research. In addition, universities that participated in
the survey conducted by the Association of University Technology Managers (AUTM) over a 10 year period reported 4,300 new companies formed and over 300,000 jobs created. Heher makes two more important observations. First, he notes that the indirect economic impact is estimated to be an order of magnitude higher. Secondly, he states in the same publication (Heher 2004, p.12) that “The success of university technology transfer is considered one of the key drivers of the sustained growth in the USA economy in the past 20 years.” In this case, technology transfer by these universities is able to re-direct R&D to produce new products and services that are essential to continue the innovation process. Indeed without continuous innovation, economies cannot expect to survive in a global and increasingly competitive business environment. Other countries have responded to this success by taking steps to put in place support programmes for technology transfer and commercialization, as I shall demonstrate for India later.

The success of North American universities in commercialization of research needs to be considered cautiously because innovation or commercialization of research is often very risky. For example, Majewsky (2003, p.3) notes that “The US$1.2b made by the US and the Canadian universities is mainly license fees, and it represents only 3% of the research income of these universities.” This means that the returns are minimal, hence the need for spin off companies. But forming spin off companies can also be problematic, because that requires venture capital, which is not readily available, especially in the developing countries. Majewsky (2003, p.3) states further, “In Warwick University between 2000 and 2003, researchers made 120 commercial opportunities and 20 spin off companies including 4 inventions licensed.” Majewsky (2003, p.3) continues, “The spin off companies raised 2 million pounds sterling, but it took 1 million pounds sterling to create 1 opportunity and 1 million pounds sterling to bring about 1 spin off company.” The problem is complicated by the fact that most technologies from the universities never get licensed because they are too under-developed. Developing the technologies is not straight forward; it is risky, and it requires careful Net Present Value calculations to reduce the risk because, usually, development costs can be 10 times the research cost. Above all, the support services are very strong in the developed world. CONNECT is one of the many companies used in the UK and the US to link university researchers with investors in technology development since 1985.

Non cautionary comparisons across countries might lead to wrong conclusions regarding efficiencies. For example, Heher (2004, p.12) states, “UK universities produce 5 to 6 more start-up companies for every US$100m when compared with the US universities.” From these figures, it might appear that the UK is more efficient than the US. The difference, however, is accounted for by the difference in policy. In the USA, Heher (2004, p.13) concludes, “Emphasis is on licensing while in the UK emphasis is on start up company formation.” The implication for developing countries is that they have to clearly determine what their priorities are in S&T based innovation and then make policies accordingly. This point is taken up later under the discussion on Botswana.

By contrast, the history of education in Africa indicates that before independence the continent had focused more on liberal arts neglecting science education. Through its reforms, the World Bank tried to shift the
focus towards science, but the number of students in science in a number of tertiary institutions in Southern Africa continues to be lower than the number of students in non-science subjects. Table 1 and Table 2 reflect this situation in the University of Botswana.

Table 1. Total Student Enrolment by Faculty 1997/98-2001/02

<table>
<thead>
<tr>
<th>Faculty/School/Centre</th>
<th>1997/98</th>
<th>1998/99</th>
<th>1999/00</th>
<th>2000/01</th>
<th>2001/02</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business</td>
<td>541</td>
<td>589</td>
<td>685</td>
<td>820</td>
<td>819</td>
</tr>
<tr>
<td>Continuing Education</td>
<td>1598</td>
<td>1691</td>
<td>1966</td>
<td>2203</td>
<td>2036</td>
</tr>
<tr>
<td>Education</td>
<td>1394</td>
<td>1669</td>
<td>1879</td>
<td>2095</td>
<td>2255</td>
</tr>
<tr>
<td>Engineering and Technology</td>
<td>808</td>
<td>904</td>
<td>998</td>
<td>1157</td>
<td>1272</td>
</tr>
<tr>
<td>Graduate Studies</td>
<td>283</td>
<td>347</td>
<td>419</td>
<td>501</td>
<td>571</td>
</tr>
<tr>
<td>Humanities</td>
<td>1271</td>
<td>1393</td>
<td>1629</td>
<td>2054</td>
<td>2147</td>
</tr>
<tr>
<td>Science</td>
<td>1257</td>
<td>1289</td>
<td>1353</td>
<td>1337</td>
<td>1384</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>1132</td>
<td>1083</td>
<td>1231</td>
<td>1555</td>
<td>1802</td>
</tr>
<tr>
<td>Total</td>
<td>8284</td>
<td>8965</td>
<td>10160</td>
<td>11722</td>
<td>12286</td>
</tr>
</tbody>
</table>

Table 2. Graduation Rate (%) by Faculty (Full-Time) 1997/98-2000/01

<table>
<thead>
<tr>
<th>Faculty</th>
<th>1997/98</th>
<th>1998/99</th>
<th>1999/00</th>
<th>2000/01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business</td>
<td>85</td>
<td>76</td>
<td>57</td>
<td>81</td>
</tr>
<tr>
<td>Education</td>
<td>96</td>
<td>111</td>
<td>97</td>
<td>98</td>
</tr>
<tr>
<td>Engineering and Technology</td>
<td>-</td>
<td>-</td>
<td>89</td>
<td>78</td>
</tr>
<tr>
<td>Humanities</td>
<td>97</td>
<td>90</td>
<td>95</td>
<td>94</td>
</tr>
<tr>
<td>Science</td>
<td>39</td>
<td>32</td>
<td>34</td>
<td>33</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>91</td>
<td>70</td>
<td>81</td>
<td>83</td>
</tr>
</tbody>
</table>

In this regard the region ranks lower than other parts of the developing world. In the first place, the science system as reflected in the formal education structures, including tertiary institutions, is weak. The weak science system translates into poor performance of students in science subjects when compared to their performance in other subjects. African countries, therefore, have a weak base for doing basic research in the sciences, which is necessary for the development of technology. Hence, almost all countries in the region (with the exception of South Africa) are not able to calculate their R&D index. There is variation across the subcontinent with formerly European areas of pre-1994 South Africa coming at the top while Botswana, Lesotho, Swaziland and Mozambique are at the bottom. Because the region was developed to provide a market for goods and services produced in South Africa, the R&D institutions remain very few. Failure to appreciate the value of S&T by the post colonial governments has led to low funding levels for R&D, with the result that the few R&D institutions are weak. Furthermore,
where they do exist, they usually act like silos, without any connectivity. They are usually not strategically aligned to form a functional national innovation system that is prevalent in the developed world. The weak science system perpetuates itself into a weaker innovation system. Partly because of this situation, southern African countries have so far not been able to take advantage of their natural endowment of a rich biodiversity by developing indigenous technology, as other parts of the developing world such as India and China have done. There is no sustained effort to develop indigenous knowledge, despite its availability. This is a serious omission since indigenous knowledge is what should secure for Africa a niche in the globalizing world economy, as is the case with the developing countries of the east.

Hewett (2004, p.23) states, “Because of the continent’s low level of development of S&T, 54 African countries are now poorer than they were in 1990 despite the fact that some Organisation for Economic Co-operation and Development (OECD) countries have been moving their R&D operations to the developing world, mainly India, China and Singapore.” Apart from the S&T infrastructure that these countries have, they also have the advantage of much cheaper labour. For example, Mouton (2004, p. 12) states, “South Africa pays US$2.17 per hour in manufacturing against US 60 cents in India and US 50 cents in China.” The challenge for Africa is for it to upgrade its technology intensive products. In fact, India is applying what it calls its 18th Century technology (meaning indigenous technology) as one of the means of attaining its planned economic growth of 7-8% of its Gross Domestic Product (GDP). India’s biotechnology industry is growing and is expected to compete with that of the West very soon. In view of India’s success, Kenyatta University in Kenya has set up a Faculty of Traditional Medicine. I argue that the development of indigenous technology is only possible through a well managed innovation system which is based on a strong science system, with adequate funding systems. However, that the region does not have sufficient resources to fund a sustained innovation system, given that in the US, Heher (2004) reported one invention disclosure for US$2.5m of research expenditure [or between 20 and 50 papers published]. In this paper I will use South Africa, Zimbabwe, Lesotho and Botswana as cases.

South Africa

South Africa has historically been the economic hub of the region. It is much more developed than any of the SADC countries in all respects, especially in terms of the infrastructure for technology based innovation. The country has moved from a situation in the 1980s where its S&T institutions were autonomous and unrelated to a position where the country now boasts the most elaborate S&T infrastructure and the best functional research management system in the region. In particular, South Africa has a fairly well developed and relatively well funded science system with tertiary institutions and research councils. It also has a technology and innovation system which is backed by scientific councils, R&D institutions and an S&T administrative structure that is championed by the Department (Ministry) of Science and Technology. In that country, research and innovation management is done at different levels of the S&T systems, in the public as well as the private sector. For example, there is an overarching framework within which all public S&T endeavours operate, whether in the tertiary institutions, in the public sector or in the private sector. This is the National Research and Development Strategy which was adopted in 2002 and through which the
government has re-defined the country’s S&T system as a national system of innovation. Then there is an elaborate structure for promoting and funding innovation. The major funding body for the public tertiary institutions is the government, which gives these institutions a subvention to cover the greater part of their budgets. The government specifies that 10% of the subvention it gives is for research. In addition, there are many other ways in which the government funds not just the science system (i.e. tertiary institutions and research councils) but also the technology development and transfer (or innovation) activities. Central to the government’s effort in this regard is the National Research Foundation (NRF) which, as an intermediary institution between policy and research providers, operates different funding schemes as a way of implementing the National Research and Development Strategy. NRF’s funding system is multi-pronged in that it aims to grow both the country’s science system, as well as its innovation, through different funding programmes. For example, to address innovation specifically, there are a number of funding programmes such as the Innovation Fund, the Research and Innovation Support Agency and the Poverty Alleviation Programme which are administered by the NRF on behalf of the state. They award funds competitively to any applicant. For technikons and technical stations, South Africa runs the Tshumisano Fund which finances innovation projects in these institutions. The projects covered are mainly the small, medium and micro-enterprise (SMMEs).

For the universities, the NRF administers research programmes for master’s students who do their thesis in any field of innovation within the parameters set from time to time. In this case, the NRF advances the science system and the innovation system simultaneously. Another government source of funding for research into South African tertiary institutions is through rebates on publications that have come out through the South African Publication Standard for journals.

South Africa is very much aware of the crucial need for specialised manpower training and development in the country’s innovation chain. In addition to the training efforts indicated above, the country implements the Technology for Human Resources in Industry programme, which focuses specifically on manpower development in S&T.

And the public sector does not struggle alone. The private sector funds research in tertiary institutions, in line with its needs, mainly in the form of scholarships and in consultancies. However, the Republic of South Africa Government (2000, p. 23) states, “Levels of private sector R&D have declined in the past few years.” Due to the S&T set up in South Africa, it is much easier to carry out research and innovation management in that country than it is the case in the rest of the region, as I show below. South Africa is able to calculate its R&D intensity. For instance, currently, it stands at 0.7% of GDP, after dropping from 1.1% at the onset of majority rule in 1994.

Zimbabwe

Zimbabwe set up its Ministry of Science and Technology in 2002. The Ministry is within the Office of the President in order to give it the power it needs to leverage resources necessary for a functional S&T system. With the Ministry of Science and Technology has come a national research council, Research Council of Zimbabwe (RCZ). However, there also exist other science councils, centres and trusts with specific mandates, e.g. Agricultural Research Council, Medical Research Council, Tobacco research Board, Pig Indus-
try Board, BioSafety Board, Scientific and Industrial Development Centre, Agriculture Research Trust (private sector), 13 universities (all of them offering S&T related subjects with varying strengths), and 5 polytechnics.

In spite of that infrastructure, Zimbabwe does not have a single national S&T or innovation system. The new Ministry is meant to provide an impetus for setting up a functional national innovation system. Polytechnics function as a coordinated system but universities are virtually independent as far as innovation development is concerned. One of the major functions of the RCZ is to coordinate research undertaken by sectoral research councils and institutes, but this is often handicapped by lack of research funds from RCZ. In other words, the country lacks a well coordinated funding structure.

Zimbabwe has an S&T Policy as well as the Intellectual Property legislation but only now is the Ministry of Science and Technology working on a national research strategy. The country is neither able to estimate its R&D expenditure nor is it able to relate any of its economic development directly to its R&D activities.

Lesotho

Lesotho has neither a Science and Technology policy nor a Research Council. The country’s only university has a Faculty of Science, but it does not offer technical training in medicine or engineering. There are only three technical schools which are not even affiliated with the University. Specifically, there are no institutions that deal with technology development and technology transfer. The private sector is quite small, and there is not much industrialization. It is, therefore, not meaningful to talk of the involvement of the private sector in the development of technology.

Botswana

The situation in Botswana is relatively much better than in Lesotho, although the country remains behind Zimbabwe in a number of S&T measures. The country has only in the past four years made a significant move towards establishing itself in S&T. In 1998, the S&T policy was adopted through an Act of Parliament and a National Council on Science and Technology set up, along with a National Research Council. Not much happened until the Ministry of Communication, Science and Technology was established in 2002. A Botswana Research Science and Technology Plan now exists. The country’s one university does have the critical faculties of Science and Engineering and Technology, but it does not offer medicine. The country upgraded its only polytechnic into the Faculty of Engineering and Technology in a bid to position itself for providing technological education. The country is pushing its agenda for S&T development quite fast. In 2004, it prepared tender documents for an inventory of researchers and physical faculties in Botswana, something comparable to the South African Research and Information Directory. The country has also appointed South Africa’s Council for Scientific and Industrial Research to develop the National Research Science and Technology Plan. Soon, the country will have clearly spelt out national priorities in research to guide the research process at the national level.

Botswana has three R&D institutions which are supposed to complement each other in their mandate and operation. Although all of them are companies limited by guarantee, they are funded mainly by the government (95%), and they are not financially self-sufficient as yet. While it is recognized that the three R&D institutions are a contribution to the national S&T system, the problem is that
they are not aligned in terms of their operations and functions. As such, they do not form a national innovation system through which an idea could be developed from conception to a marketable product. Because the R&D institutions do different things that are not directly related, the overall synergy from their total output is not as strong as it might have been. In other words, what we see in Botswana currently is the level that South Africa was in around 1980.

The first R&D institution is the Rural Industries Promotion Company (RIPCO), which was established in 1974, with the objective of undertaking R&D for industrial development and commercializing and disseminating research results. RIPCO operates through its technical company, known as the Rural Industries Innovation Company (RIIC), to produce technologies and equipments that are required by rural industries. These include the dehuller which is an industrial machine used for sorghum milling, threshers, grain grinders, solar cookers, incinerators, hammer mills and bread ovens.

The second is the Botswana Technology Centre (BOTEC) established in 1979. Its mandate is to promote Science and Technology through:

a) R&D,
b) technology transfer,
c) industrial support,
d) policy development, and
e) specialized informational services and systems on technology solutions for industry, business, education.

BOTEC manufactures technology products such as the mini hearing aid, the photovoltaic charge controller and the remote sensing equipment for weather stations. Consistent with its mandate of policy development, it was also instrumental in drafting the Science and Technology Policy for Botswana.

In terms of collaboration, BOTEC is the national focal point for a number of international S&T bodies including the Commonwealth, World Association of Industrial and Technological Research Organisations, and the World Energy Council.

The National Food Technology Research Centre (NFTRC) is the third R&D institute in Botswana. It developed from the Botswana Food Laboratory in 1984 to become a NFTRC in 1999. Its role is limited to producing food technology, with the following objectives:

a) to initiate, conduct, and direct scientific and technological research and development work relating to food and nutrition to enhance national food security,
b) to generate and disseminate food and nutritional data and information for use by farmers and researchers and professionals in nutrition, agriculture, public health, food safety, control and regulation, food processors, policy makers and other stakeholders, and
c) to provide information and technical expertise needed to facilitate the development and sustainability of food based SMME’s and related enterprises by contributing to economic diversification, import substitution and job creation.

Research Management: A Sine Qua Non For National Development

Innovation can be both very expensive and risky. Walwyn (2004, p.7) estimated that, “For every 100 ideas that look commercializable, only around 17 will be commercially exploitable, and that only 1 out of every 10,000 chemical entities initially screened as drug candidates will lead to a...
final product.” Thus, innovation is costly. Hence, risk management becomes critical in innovation and technology development. Risk management is made possible by commercialization strategies that apply the right techniques which are used to minimize economic loss in the process of new product development. The technologically developed countries of the West have the techniques that enable them to assess not only the chances of commercial success of innovation ideas, but also they have the techniques such as the risk adjusted net present value, which is used to manage research risk and R&D gain, which in turn is used to determine the required level of R&D expenditure. Such competence enables them to know at what stage of the commercialization process technology development must be licensed out to other companies, sold, or developed up to the final product stage for market.

The ability of an organization to license a new product at a certain level of its development (before it is commercialized) implies the participation of the private sector in the innovation process. In the developed countries; the private sector works in conjunction with the public sector and the knowledge intensive organizations such as the tertiary institutions. By contrast, it has been demonstrated above that developing countries lack the key ingredients of what would constitute an effective research management-based knowledge economy. To start with, the national science systems are underdeveloped. This means that the technology institutes where R&D is carried out lack the firm foundation that is needed for facilitating a viable commercialization strategy. The human resource base is poorly prepared to discharge the mandate the R&D institutes set for themselves. More specifically, the knowledge and skills for commercialization, as reflected in the previous paragraph, is lacking, thereby increasing the risk of failure in technology transfer because the key expertise in this area is not primarily technological or scientific, but rather commercial and business skills, a combination that most people working within technology transfer in the developing countries do not have. The absence of a linkage between the various segments of the research and innovation value chain from basic research to technology transfer and commercialization is normally referred to as an innovation chasm.

As explained in the previous paragraph, commercialization of innovation requires very sophisticated techniques, without which new product development would be too expensive to be feasible, especially in the developing countries where there are not even adequate resources to meet basic human needs. The mandates of the research and technology institutes in these countries purport to address national development. However, their efforts are often not well integrated with each other. In addition, there is no national strategy that links their efforts. The resulting lack of synergy undermines effective transfer between scientific discovery and technology development. Consequently, the transformation of knowledge into public benefit does not occur with the greatest possible rate of success.

It is at this stage that the benefits of research management would be best felt. There is need here to re-define research and innovation management as the active intervention that aims to achieve an organisation’s strategic objectives including value creation. In this context, it is necessary to consider that the value of a product increases with its movement along the innovation value chain. But in order for that value to increase, risk must be well managed. And this is because an idea on its own has no value unless there
has been some proof of concept study about it. It is only through the progression of the idea into a proven innovation that value is created. Walwyn (2004, p.8) states, “In the technologically developed economies of the West, this increase in value content through knowledge generation is frequently exploited by R&D organisations, which are able to trade intellectual assets prior to product launch”, but in the technologically undeveloped economies, this opportunity is lost because of several factors which include inappropriate science and technology climate, lack of participation of the private sector and tertiary institutions in the state-led innovation processes.

Towards Analysing the Bottlenecks of Research Management in Southern Africa

The level of S&T depicted in the cases used in this study is very low. Except for South Africa, the rest of the region is still in its infancy in terms of science and technology development. In particular, the infrastructure is very weak. The foundation for the teaching of science is yet to be strengthened in order for the countries to have a functional science system. The situation is even more desperate with respect to S&T. Dedicated S&T institutions are not in place, manpower is not trained, and the countries lack the framework necessary for implementing a well guided S&T policy. Such a framework would be provided by a National Research and Development Strategy, backed by a comprehensive funding system. Because of the lack of all these, there is no innovation chain that would lead to the growth of the economies of these countries. Hence, the foundation for an effective research and innovation management remains shaky.

For purposes of focus, the conclusion will concentrate on Botswana, which is being taken to typify the region. There are several reasons why Botswana’s economy has not received a boost from the nation’s three R&D institutes. Institutes in that country operate as silos, in vacuum or without an overarching framework that guides research and innovation in the way the National Research and Development Strategy in South Africa does. The existence of an S&T policy and a National Council on Science and Technology are necessary but not sufficient conditions for research that leads to innovation. Political leadership is a crucial factor for successful innovation. A look across the world suggests that a strong focus on S&T is associated with high level of government steering. For example, the S&T portfolio is placed within the highest office in the land in those countries that are most successful in innovation. In Finland, the National Advisory Council on Science and Technology is chaired by the Head of State; in Korea, the Deputy Prime Minister has that responsibility. In the US, the Office of Science and Technology Policy resides within the Office of the President. A national research and innovation (or development) strategy, with clearly interlinked structures that bring together the national systems of science and technology, and also backed by well spelt out funding mechanism, is the basic minimum that is required for successful innovation that would lead to creation of wealth.

Botswana is still in the process of establishing a funding mechanism known as the Botswana Research and Science and Technology Investment Agency, through an Act of Parliament. It is still early to assess its effectiveness. The country has decided to re-organise its S&T landscape by putting in place research councils which will operate in a more coordinated way, in line with the direction provided in the Research and S&T Plan. These proposed research councils
are based in part on alternative providers of research such as the Botswana Institute of Development Policy Analysis, which is being proposed to become a broadened National Council for Social Sciences Research, and BOTEC, which will become the National Council for Industrial Research after merging with RIPCO.

All of this is at the planning stage; therefore, it is too early to say how much value the restructuring will add to research, especially to innovation. Experience has shown that merely restructuring and investing in R&D may not always lead to improvements in innovation. South Korea increased its investment and is now reaping the benefits while Sweden, which spends 4% of its GDP on R&D, is not enjoying an economic growth commensurate with that investment. For Botswana, the available information does not seem to emphasize the linkages of an innovation value chain. In this regard one needs to introduce road mapping, an activity with different but related objectives. At one level, it is about raising the population’s awareness of the importance of science and technology, an aspect most important in developing countries. At another level, road mapping is about linking S&T trends to market opportunities in the form of new products or services. And, it is also an effective communication tool within and between organizations that form the research and innovation value chain. When road mapping is done correctly, it becomes possible to provide, within an economy, a clear plan for science platform development, technology acquisition, and specific new product development projects so that the path towards commercialization emerges clearly.

Because of its small population of 1.7 million people, Botswana will not have as many S&T institutes as South Africa, which has some 40 million people. As the document Research Research states, “Universities that want to spin out more successful companies don’t need bigger technology transfer offices; they need better ones.” (Research Research, 2004, p.1). The same study, done on 110 of Britain’s top research universities, found that the experience and skills of technology transfer office staff are more important than the number of staff in creating wealth. Research Research (2004, p.3) concluded, “It is not so much the number of staff that is important but their experience.” Human resource development is one area where southern African countries are weak. As indicated earlier, successful technology development and transfer is complex and requires high level skills. Otherwise R&D efforts will incur enormous loss.

**Conclusion**

I have attempted to argue the case for streamlining a country’s S&T activities and arranging them in such a way as to complement one another for purposes of creating an innovation system that is capable of expanding the national economy. For this arrangement to bring the desired result, an overarching framework of a national research and innovation strategy that largely works to implement the national science and technology policy needs to be established. The paper went further to indicate that a strong science system is a pre-condition for an effective technology transfer system. In addition, it was emphasized that adequate funding is required for the entire innovation system to function. And, since technology is both risky and expensive, the paper has demonstrated that research and innovation management is the single variable that will ensure synergy and growth of value from the various science and technology activities. Clearly, southern
Africa lacks all these, but that without them, the region does not stand a chance to experience any further growth in its economy within the globalizing world economy.

References


The Development of a Successful Pre-Award Infrastructure Within a Climate Where Clinical Trials Sponsored by Pharmaceutical Industry Have Decreased Since 2001 – A Large Multi-Specialty Academic Medical Center Case Study

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Abstract
In today’s research arena, protracted contract and budget negotiations lead pharmaceutical and device companies to seek sites and services abroad. The case study focuses on a successful pre-award infrastructure based on the Circle of Support model. A contract administration component is the central point of contact for activities relating to pharmaceutical and device studies. Implementation of this model allows for decreased timelines, increased productivity, improved customer satisfaction, and successful budget negotiation. Management without measurement is not quantitative; thus, institutional benchmarking is imperative. Utilizing a geometrically influenced pre-award model shows more dollars, more contracts, and higher indirect cost recovery establishing a decreased timeline for critical path resolution due to the centralized infrastructure. Implementation of the Circle of Support model and contracts administration component to decrease fragmentation among resources within an organization can achieve optimal results. Organizations tend to be either squares or circles. Squares limit the number and flow of resources, leading to fragmentation. Circles are all-inclusive, never-ending, and provide for unlimited flow of resources. Customers and stakeholders are thus surrounded by a fluid support system. The flexibility of this model allows for application to any organization involved in clinical research.
Introduction: The Shape of Research

The landscape of research is constantly changing, and by its very nature is characterized by changing systems, procedures, and new technology (Murray, McAdam, Burke 2004). Investigative sites and investigators must have foresight and flexibility to participate competitively. Industry-funded research is a multi-billion dollar business. Pharmaceutical and device companies are extending boundaries into peri- and post-approval activities. More companies are going abroad for clinical trial sites as financial considerations make decreasing pre-clinical costs imperative. By going abroad, pharmaceutical companies find sites that will accept lower payment for research in order to secure a study. Fewer regulations, because of the absence of regulatory oversight agencies such as the Food and Drug Administration (FDA), simplify conduct of the research. Sites abroad also have larger potential subject pools (Shah, 2003).

In a business where, according to industry estimates, a single day’s delay in bringing a drug to market can cost as much as $1.3 million, finding a ready source of trial subjects is an advantage (Rowland, 2004). This atmosphere demands that research sites develop and showcase their increased success rates in subject recruitment and retention; accurate, timely data; diverse subject population, and institutional resources, thus ensuring their identity as a niche provider among their competitors. Sites in the United States (U.S.) defend their subject costs by providing quality centered on the Iron Triangle of research.

Figure 1. The Iron Triangle of Research

The “Iron Triangle” of research is composed of three points: Good, Fast, and Cheap. When conducting research you can get any two of these, but you can never get all three.
conducting research one can achieve any two of these, but never all three. (Chasse, 2004) In the U.S., one can get data Good and Fast, but not Cheap. Abroad, one can get data that are Fast and Cheap, but not Good, or Good and Cheap, but not Fast. Data obtained in this manner jeopardize the integrity of study results, as information could be inaccurate or not provided expeditiously.

To become successful niche providers, sites must think “outside the box” of historical site management infrastructures. This case study highlights a successful model for pre-award within a large, multi-speciality academic medical center involved in multipartite research activities ranging from bench research and animal studies to human trials. The model allows for abbreviated timelines on contract and budget negotiation and execution, enabling viability within a highly competitive marketplace. A Circle of Support (Figure 2) is a strategic plan focusing on customer service and satisfaction, which provides resources necessary for expeditious pre-award processes. Beginning with an
entry portal, this dynamic schema illustrates a fluid representation of resources such as feasibility, biostatistics, information systems, budget development and negotiation, and legal review. Additional institutional resources can be pulled into the circle as necessary. Outside of pre-award, examples of institutional resources utilized are regulatory resources can be pulled into the circle as necessary. Outside of pre-award, examples of institutional resources utilized are regulatory review board (Institutional Review Board) and post-award. With increased scrutiny (Congressional and otherwise) of research ethics, financial management, and conflict of interest, the centralization of the pre-award infrastructure allows for establishment of controls to address these issues. In an industry fraught with opportunities for improvement, geometric consideration of available resource allocation is an exciting concept application (Figure 3).

According to the May 4, 2005, Kaiser Daily Health Policy Report, the number of clinical trials sponsored by the pharmaceutical industry has decreased “significantly” since

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**Figure 3.**

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2001, and the number of principal investigators for trials in the U.S. has “declined even more steeply.” These results are reflected in a study conducted by the Tufts Center for the Study of Drug Development and reported in the Washington Post (Kaiser Daily Health Policy Report, 2005). Using information collected by the FDA, researchers at Tufts found that after a major expansion during the 1990s, the number of pharmaceutical industry-sponsored clinical trials leveled off in 2000 and began to drop after 2002. The number of principal investigators for trials in the U.S. decreased by 11% between 2001 and 2003, while the number for trials abroad increased by 8%. Discontinuation of trials before they reached their final phase contributed greatly to the decrease. In addition, trials are becoming less lucrative for doctors and researchers; thus, more trials are being conducted at cheaper sites abroad. Researchers are frustrated by increased costs, poor communication, and fragmented organizational infrastructures. Available information increasingly reflects that new clinical trials are increasingly being done abroad. Statistics show that the number of U.S. sites where clinical trials were underway declined from approximately 51,000 in 2001 to 48,000 in 2003. During that same period, the number of FDA-approved investigational drug studies in all phases of research rose from approximately 3,900 to 4,500, but with less research being done at U.S. sites (Kaiser Daily Health Policy Report, 2005).

Although ongoing clinical trials in the United States are generally not being moved overseas, the lower costs abroad and the often greater professional and public interest are leading many companies to set up new trials in Eastern Europe, South America, and India (Kaiser Daily Health Policy Report, 2005).

Ongoing clinical trials are not significantly affected by the current trend of selecting sites overseas because pharmaceutical and device companies realize the cost-effectiveness of letting a study continue to completion at a site where research support is already in place. However, studies indicate that industry looks at locating Phase I studies overseas for several reasons, such as increased potential subject pool, cheaper overall costs, and less governmental regulation. Overseas, there is a larger pool of potential subjects, many of whom are medication naïve (Shah, 2003.). Populations in countries with underdeveloped economies usually cannot afford healthcare services or medications. Trials in the U.S. are highly regulated – experiments on human subjects must undergo reviews by government-regulated institutional or central review boards, and are under increased scrutiny to protect participants. Studies conducted overseas and then moved to the U.S. are only required by the FDA to conform to the World Medical Association’s Declaration of Helsinki, which is a series of recommendations that critics call rudimentary, nonbinding, and ambiguous. There is no oversight or auditing to ensure that these recommendations have indeed been followed prior to moving the trial to the U.S (Shah, 2003).

To position an institution competitively within the market and meet institutional mandates, departmental objectives should include establishing an internal infrastructure that will streamline and ensure quality processes and determine current and future productivity needs. This case study discusses the evaluation and identification of opportunities for improvement within an active infrastructure of a grants administration office, specifically, contracts administration. Changes were implemented in processes and infrastructure to facilitate flow and timelines for clinical trial agreement processing, budget development and negotiation, monitoring and oversight and timeline tracking for the duration of project administrative set-up.
Case Study

Materials and Methods
Evaluation of the pre-award process flow indicated a need for contract administration and budgeting to increase functionality via closer proximity and elimination of departmental boundaries. The Circle of Support (Figure 2) lends itself to the creation of a separate contracts and budgets office within grants administration, utilizing a contracts manager and budget manager working in tandem. The Contracts Manager from the Clinical Research Projects Office was moved to Grants Administration, and a Senior Financial Analyst was moved from Research & Education (R&E) Fiscal to Grants Administration in the capacity of Budgeting Manager (Figure 4). The previous configuration consisted of a Contracts Manager interact-

Figure 4.
ing with the R&E Fiscal Senior Financial Analyst. Differences in departments and inconvenient physical locations caused fragmentation of processes, resulting in increased processing timelines. Realignment was implemented in March 2004 (Figure 4). Restructuring allowed for abbreviated timelines on contract and budget negotiation and preparation, enabling the institution to be considered an increasingly viable site for highly competitive studies.

**Results**

The following data support the contention that restructuring successfully increased both the number of clinical trials and revenues for the institution:

Numbers increased significantly while utilizing the Contracts Administration model (Figure 4) within the Circle of Support (Figure 2). Notable were a 37.6% increase in total funding and 26.8% increase in average funding per contract (Table 1). The flexibility of this configuration facilitates effective communication among the critical path components of contracting, budgeting, and institutional regulatory approval. As illustrated in Chart 1 and Chart 2, significant increase in overall dollars and number of contracts is credited to the restructuring.

**Conclusion**

A speaker at a recent conference summed it up nicely:

“There are two farmers and one bear in the woods. Farmer One puts on tennis shoes and Farmer Two says, ‘You can’t outrun the Bear.’

Farmer One replies, ‘I only have to outrun YOU.’”

The Circle of Support (Figure 2) is the “tennis shoes” that sites need to outrun the competition.

As this case study illustrates, the pre-award model allows for more dollars, more contracts and higher indirect cost recovery, establishing a decreased timeline due to the centralized infrastructure. Organizations tend to be either squares or circles. Squares limit the number and flow of resources, leading to fragmentation and inefficient use of resources. Circles are all-inclusive, never-ending and provide for an unlimited flow of resources.

Organizations applying a geometric perspective to current infrastructure and resource allocation have the potential to exponentially increase funding and contracting.

**Table 1.**

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<td>2003-2004</td>
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<td>Number of Executed</td>
<td>47</td>
<td>51</td>
<td>4 (8.5%)</td>
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<td>Contracts</td>
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<td>Total Funding</td>
<td>$3,247,203</td>
<td>$4,468,953</td>
<td>$1,221,750 (37.6%)</td>
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<td>Average Funding Per</td>
<td>$69,089</td>
<td>$87,627</td>
<td>$18,538 (26.8%)</td>
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<td>Contract</td>
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*See charts 1 and 2 for details*
Chart 1.

Total Funding Per Month

- $3,247,203.00—Total Funding for 3/03 to 2/04
- $4,468,953.00—Total Funding for 3/04 to 2/05

Chart 2.

Total Contracts Executed Per Month

- 3/03 to 2/04—47 Studies Total
- 3/04 to 2/05—51 Studies Total
increase institutional site selection, clinical trial revenues and visibility within an ever-changing marketplace.

References


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Research Administration and Management serves as a coming-of-age milestone for the profession of research administration. This cultural icon is rolling off the press in a very timely fashion as we begin to see the emergence of formal university programs in Research Management. This comprehensive work is sure to be considered the foundational text for not only formal university programs, but also as the essential desk reference for every office engaged in research administration.

The group of 86 contributors is comprised of well-respected topical experts that enabled the editors, Kulakowski and Chronister, to cover the vast breadth of Research Administration with ample depth to be useful to both the novice and the experienced administrator. The 79 chapter volume is divided into six major sections to logically organize various components of research administration. Also included are appendices to define a selected glossary of common terms and a lexicon of the overwhelming maze of acronyms so prevalent in our profession.

The first section of the book rightly opens with a discussion of the Research Manager as a Leader in the 21st century research enterprise. The first chapter opens with an overview and introduction of the book in order to guide the reader in the philosophical and technical organization of the work. This is followed by an extremely interesting and well-documented history of the profession by the well-respected SRA historian, Dr. Ken Beasley.

The logical next chapter for this is offered as “Looking into the Crystal Ball” to divine the anticipated future of research administration. This is a thoughtful treatise on what we can expect based on past experiences, current climate and anticipated trends. The remainder of this introductory section deals with research administration in the organizational structure and leadership of model institutions engaging in research.

Part II: The Infrastructure for Research Administration

Lynn Chronister tells the reader in page 83 that the book overall “offers data, information, policies, procedures, suggestions, best practice, and strategies for developing or enhancing the research enterprise.” In response, contributors speak with a common voice throughout Part II to provide a blueprint for the establishment of a new research support structure, effective administration for an existing one, and a process of strategic planning for change in a structure ready to grow, with clear advice on assessment at all stages. They delineate policies and procedures proven by long experience as markers for the novice research administrator and as reminders and benchmarks for the experienced. They remind all that implementation must always align with the mission and vision of the individual institution.

The editors and contributors see the research administrator as an advocate and compliance officer for researchers, as an agent of change and growth, as communicator for research and the researcher with the administration, the Board, the media, and the institution in general. They call the research administrator to greater leadership and then provide the tools to achieve that leadership.

Chapters deal with a broad variety of issues that face the research administrator, from human resources to human tissue management, from marketing to working with legal counsel. The book will serve as a reference and a professional development tool for research administrators at all levels of experience.

Chapter 24, although titled “National and International” serves to describe a number of US based professional societies and associations that may be useful to Research Administrators. In future editions of the book, we would hope to see this chapter expanded to include more international organizations such as the South African Research and Innovation Management Association (SARIMA), the Canadian Association of University Research Administrators (CAURA), the European Association of Research Managers and Administrators (EARMA), the Association of Commonwealth Universities (ACU), and the International Network of Research Management Societies (INORMS). Some of these organizations are referenced in Chapter 3, and could be further described here.

Part III: Pre-Award Administration

This section, comprised of 12 comprehensive chapters, deals with all aspects of pre-award administration to include both grants
and contracts. There are chapters with broad overviews, such as “Fundamentals of Sponsored Programs,” and “Contracts: Form, Function and Issue Spotting,” as well as chapters with a more depth and narrower focus.

Some of the in-depth chapters deal with the specific topics of both federal contracts and industry contracts; successful proposals and peer review; preparing a budget and international research challenges. Each chapter is authored by a well-respected expert in the specific topical area.

Part IV: Post Award and Financial Requirements

Consisting of only six chapters, Part IV gathers into one place all major aspects of compliance and financial reporting. Here the research administrator will find information on the structure of financial reporting, the resources available, and the responsibilities of the various participants in the research enterprise. Types of payment from granting agencies, effort reporting, cost sharing, facilities and administrations costs, and internal and external audit processes are all explained succinctly and understandably. Government circulars essential to compliance and reporting are laid out and explained, and the development and management of a compliance program are set forth in clear terms.

The challenges and benefits of international collaborations are discussed. If a limitation exists in this outstanding reference, it is in the predominance of the American patterns and regulations. Although international research organizations are listed as vital resources, with all their contact information provided, it is certain that later editions will expand international compliance issues, resources, and challenges.

Part V: Responsible Conduct of Research

Part V deals with a number of thorny issues that go beyond basic compliance to fundamental ethical principles in the research enterprise and the publications that arise from it. Contributors offer guidance in the establishment of a compliance program, meticulous storage and reporting of data, mentoring and education in the responsible conduct of research, avoidance of conflict of interest, authorship principles, and health and safety issues, especially in an age of bioterrorism. They point out essential principles in the ethical treatment of human subjects and animals and the use and management of human tissue resources.

Finally, Elliott Kulakowski closes the section with a discussion of response to allegations of misconduct. He notes that policies for dealing with such allegations must be in place before they are needed and offers information and advice on fair practice, disclosure, and other matters attendant to allegations of misconduct.

In all chapters, as throughout the book, clarity and directness are hallmarks. The information provided is pertinent and succinct, and the policies and practices recommended are born of experience and refinement. Legal recommendations come from attorneys in the field. In all cases the material is offered as a sharing among professional colleagues.

Part VI: Technology Transfer

This section could prove to be the most helpful of the entire book to the senior manager and administrator. While many more seasoned administrators are quite familiar with pre- and post-award issues, responsible conduct of research, organizational theory and leadership, and some of the history and challenges of the profession, many of us are
not well versed in the technical aspects of “taking it to the streets” via tech transfer. This lengthy section goes far to educate the novice in the broad concepts and the journeyman in the more in depth issues.

With twenty-one chapters, the section gives a very comprehensive study on issues related to tech transfer policy and organizational development; patent law; materials transfer agreements; export controls; copyrights, trademarks, and trade secrets; license agreements; various agreements; STTR/SBIR grant mechanisms and other issues related to economic development coming from research. Although the entire volume is a good value, this section alone is well worth the cost of the book.

Conclusions
This is a must-have volume for every research administration office. It will be useful as a handy desk reference, as a training tool for in-house professional development programs and as a text for degree and certificate programs in Research Administration and Management.
Voice of Experience

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Voice of Experience is a contributed feature in the Journal of Research Administration provided by various senior leaders of the Society of Research Administrators International, especially those who served as Past Presidents of the Society. This featured column continues a long-standing tradition of the Society to provide discussion and direction for emerging topics of interest and concern for research administrators around the globe. The following are the areas, questions, discussions, and directions collected and collated in the last several months.

1. Stipends

Q: Exactly what is a graduate student “stipend”? How are stipends handled, for tax purposes? Should the recipient get a W-2 or a 1099? How do you pay them: through accounts payable, payroll or the Bursars office?

A: When the term is used appropriately, “stipend” is not payment for services rendered. “Fellowship” is a synonym. It is a payment to an individual undergoing a specific training experience; in this case graduate study. Essentially it is a payment to cover living needs and specifically does not provide a need for services in return. In fact some programs prohibit the recipient from having a “job” in addition. Both “stipend” and “fellow” are commonly misused to describe a payment to a student or a non-faculty, non-classified employee. A stipend is explicitly neither compensation nor a “wage” payment, as defined by the IRS. Therefore neither income tax withholding nor collection and payment of FICA taxes are required. A stipend is “income” to the recipient for income tax purposes, but certain costs may be excluded to find the total taxable income to the recipient; see the tax law for details. The payment of a stipend should be reported on form 1099 MISC, with the payment in box 3, “Other income”, NOT Box 7, “Non-employee Compensation”, because it is NOT compensation. This does put a burden on the recipient to have funds to pay the tax due, come April. I suggest you should find a way to pay a true fellowship other than through the payroll system. This minimizes errors on taxability questions caused because payroll is set up to handle compensation. The appropriate method of handling it outside of payroll is somewhat at the convenience of the institution. Some institutions use accounts payable but have a classification that is not “procurement” because it is not a common purchase. Some pay it through student aid, again treating it especially because it is not quite what student aid usually means. Incidentally, generally the recipient of a stipend has tenure in the stipend so long as he/she is making reasonable progress toward the training goal. However, the award terms need to be read carefully to determine exactly what the measure of tenure is. In addition, one
must be careful when “stipend” is applied to students, undergraduate or graduate. Most student payments are for services rendered: research assistant, teaching assistant, etc. However there are true fellowships for students; most are funded by sponsored programs.

The distinction in terms can be equally valid outside the USA, and can affect taxation status. However International members would need to check the wording for their own country.

2. T&E reports for project participants

Q: Do participants in a federal project have to fill out Time & Effort (T&E) reports? We have just begun our first REU summer research program, and I need to know if the participating undergraduates have to fill out T&E reports.

A: If you are paying for work -- personal services -- you must have some record of the time worked; see A-21. It may be, but not necessarily is, the same T&E report faculty and other salaried persons sign off on. Typically student workers are on an hourly payroll, and time sheets create the necessary record. If you are paying a stipend (not wage, see above) you need some indication of attendance/participation adequate to show that the goals of the training program are met. In this case, it can be pretty general.

3. Off Campus Space Charges

Q: Is there a tried-and-true allocation methodology for determining how much rent/lease cost to directly charge to an off-site project? We have had very few sponsored projects done “off-site” in the past, but now are faced with projects that will be performed in space we have to lease, rather than space we own. The challenge is how to reasonably apportion the lease and associated occupancy costs directly to projects.

A: Allocate costs by square footage. Count 100% of space occupied by each project, and divide common/service area total proportionately and add that share to each project. In case you need to separate a project between two different areas (off- and on-campus, or between two off-campus areas with different rental values), make the division based on S&W expended in the various areas; that’s a reliable technique used by many. Document as written policy whatever process you will use. That way, even if an auditor makes you change it (unlikely!), what you have done was done in good faith. Keep records showing that your leases/rent was appropriately competitively bid. Those records should document what space rents for in that neighborhood in a dollar/square feet basis. Another approach, if you need to lease considerable space and for a long time, is to consult with your cognizant auditor and find out if you can get this leased space included in your on-campus space. Then all the cost determination and allocation questions disappear.

4. Use of F&A Recovery

Q: How can F&A funds paid to the institution be used?

A: F&A rates are based on real costs and are meant to reimburse the university for those costs. However, universities pay the real costs (heat, lights, snow-removal, etc.) out of one “account” and Facilities and Administration (F&A) reimbursements are deposited into another “account”. It is up to the university where they ultimately distribute the money from the F&A account. They can put it back in the account used to pay utilities, etc., or they can use it for cost-sharing or as “discretionary” money for departments or Principal Investigators’ (PIs) to further their
work, or anything else. Once recovered F&A funds lose the “color” of federal funds and can be used as matching or cost sharing on federal grants and contracts.

It is especially useful to know this US practice if you are outside the US, where the whole concept may be foreign. For Primarily Undergraduate Universities (PUI’s) or relatively young universities in developing countries, people may worry about the ethical use of funds that are given for a specific project, even as overheads. There are even cases of funds lying unused for years in recovery accounts because the University administration does not really know what to do with them. I found it useful to include a clause in the Research Policy that specified the use of overhead funds (for research related activities of course!), as it releases the income stream.

5. Internally Funded Equipment
Q: We are beginning to offer internal research initiation funds for faculty to purchase materials, equipment etc. to conduct pilot research projects. A question has arisen pertaining to the owner of the material/equipment. If the purchase is not a consumable and the researcher leaves the University, whose property is it?

A: All equipment at the university belongs to the university unless a sponsored agreement specifies otherwise. If it was bought with sponsored program funds and the university owns the equipment; and the PI moves that sponsored program with him or her when they leave, most universities arrange a transfer (often in the form of indefinite loan) to the PI’s new institution. If it was bought with sponsored program funds and the PI moves after the sponsored program is over, permission to move it becomes subject to the PI’s negotiations on leaving, and often involves considering if the equipment is specialized and important to the PI’s line of research and/or if others in the department need it. If it was bought with University funds, it does not go anywhere (unless the department is feeling generous and applies the guides above). One caution is if the equipment was purchased with both federal and university funds, be sure that the university retains ownership of the equipment before co-mingling funding.

6. Small Disadvantaged Businesses
Q: I am looking for a couple of good sources that can be used for identifying small disadvantaged businesses, women owned businesses, minority owned businesses, etc. for purposes of fulfilling the requirements of one of our small business plan contracts.

A: There are several sources: Your institutional purchasing department; your state Small Business Development Center (SBDC); your city/county/region agency to support small businesses; local banks, and the US Small Business Administration (www.sba.gov). They all have the info, reported according to federal classifications (dollar and personnel thresholds to reach these classifications differ for different industries).

7. Using federal funds to subcontract to a federal agency
Q: I have always understood that one cannot issue a subcontract/subaward to a federal agency from another federal grant. I have a PI who is insisting that it is done at other universities “all the time” and that as long as the contract is not for salary support of the federal employee it is fine. Can you please give me some background info to explain to her?
A: Subawards may be made to some but not all federal agencies, even from federal funds. However, in each case the clear understanding and approval of the federal prime sponsor should be obtained. The mechanisms used may vary. Sometimes there should be a reduction of the prime award and inter-agency transfer from the prime contractor agency to the sub-contracting agency. In others, a cooperative research and development agreement CRADA may be the mechanism of choice, as it is a way a federal agency or unit can bring in funds. There may be zero, or limited indirects, or indirects may be triple your university rate; it all depends on how the work is accounted and how the agency accounts. Salary may or may not be paid. Each such subaward is unique, and takes careful coordination, but it usually can be done by one method or another. Some agencies are more amenable to this than others are.

8. Is this Activity Covered by the Scope of Work?

Q: How would you handle a request for reimbursement for an activity that appears to fall outside the scope of work outlined in the grant proposal when the PI says it is related to the research?

A: First try to have the investigator’s department head, and even backed up by the dean, to make the judgment whether or not the activity was directly related to the grant, and document the answer in writing. Second, seek approval for re-budgeting from the sponsor. In some instances they will make exceptions. If there IS a later disallowance, you can charge the academic unit the disallowed costs, because they are on record as having approved it. If the item is disallowed, be sure that it is understood up front who is responsible for reimbursing the sponsor.

9. Content of the Scope of Work Document

Q: Who is responsible for the content of the scope of work? We have an extensive routing form that is signed by both the PI and the chairperson. What is the responsibility of the department vis-à-vis the PI, and the responsibility of the office of grants and contracts who signs the documents for the institution? What happens when the routing form is marked off as NO on the need for space, alterations and the use of hospital facilities but the scope of work requires all these items?

A: Both Scope of Work (SOW) and Deliverables are important. They should be prepared by knowledgeable individuals, often reviewed by an academic manager (e.g., a department head) and reviewed by the central sponsored programs office (but only for legal sufficiency). For some awards, such as an NIH grant, the SOW is the application/proposal, including the stated aims and the description of how to achieve them, and the Deliverables are the reports specified by regulations. For others,, including government cooperative agreements, government and private contracts, and sub-awards; the SOW and deliverables need to be clear, concise, and objective. In the latter case, a proposed scope of work may be submitted as part of a proposal, and should be checked as part of the proposal review. Properly drafted scopes of work will use verb sentences (We will do X, we will make Y) and deliverables will use nouns (we will deliver a report at x time; we will deliver y product at z time). The institution will be obligated to adhere to the SOW and make deliverables, so a legal sufficiency review should make sure that the deliverables are clearly identifiable.

Further, if the SOW obviously involves goods and services and space not planned or
budgeted for, return the proposal to the academic management that approved it with the observation that these goods and services are required, but not provided for. Heads of academic units that review proposals may fail to review project documents as well as they should, or fail to understand the needs, and often do not realize that the questions are raised on the routing form to help them in understanding the allocation of resources. In addition, PI’s may merely be being careless when not appropriately marking the routing sheet. However, if you bring such “unfunded mandates” to the attention of academic management, they can make the decisions appropriate to the situation, and you will have documentation. It is a responsibility of a central sponsored program—and department administration too!--to catch this sort of error and refer it to a decision maker. That is part of the value we add! After a proposal is approved by a sponsor, the SOW and deliverables need to be reviewed again to assure all involved that they are still realistic in the light of amounts awarded and the time that has passed since the proposal was drafted. Perhaps new commitments will make it difficult for the investigator to maintain the time schedule in the proposal. Perhaps sponsor budget cuts have reduced the award, and the final project budget and SOW need to be harmonized. It is not advisable to take a budget cut without adjusting the SOW. Since these negotiations obligate the institution, the institutional office responsible for managing sponsored programs should take the lead, with input form the investigator and the academic unit.

10. Who may submit a proposal?

Q: Can adjunct faculty submit proposals or are submissions restricted to junior or tenured faculty?

A: This is a matter that should be decided by the institution, and documented as institutional policy. There are extensive legal and fiduciary issues involved in making this decision. With the change at NIH allowing co-Investigators this issue will become more pertinent. If your institution does allow non-employee investigators, I suggest you require two levels of approval, dept and dean (or equivalent). However in the eyes of most sponsors, the Principal Investigator is not only responsible for the conduct of the project, but also for fiduciary responsibility for proper use of funds. For this reason, I advise that when the institution receives an award for a non-employee -- fellowship is best example -- you assign an employee, e.g., a fellow’s mentor, responsibility for managing the account for the project. In my experience at several state institutions, only an employee may control state funds, but I recommend you apply the principle anywhere, because the employer has considerable leverage (including paycheck!) over an employee who fails in his fiduciary duty.

Internationally some Universities do not permit staff to sign contracts: only key senior persons are allowed to sign as the University is regarded as the contracted entity, and signing would be a breach of employment contract. It is important that everyone (especially research staff) knows the situation and who is allowed to sign.

11. Industry: publication & IP clauses

Q: We are trying to resume negotiations with a company on sponsored research agreements/collaborations. IP was the sticking point last time. In our discussions on where to go from here so as not to repeat the previous results of our negotiations, we talked about trying to eliminate the IP/licensing language from the research agreement.
A: It is feasible to remain silent on IP terms when there is some assurance that IP is not a real issue in the project supported. Most industries expect research agreements to consider publication and IP rights. I recommend that the PI MUST be able to publish reasonably rapidly, and that the industry may comment on, but not control, what is to be published. In collaborations, if you invent it is yours, if they invent, it is theirs, and if it is jointly invented it is jointly owned. If jointly owned you should set a royalty if they want to control your share, or alternatively you should agree between you who will take the lead in commercializing. Always retain a shop right for research and education purposes!

In a research agreement with a for-profit sponsor, it is reasonable to assume that the sponsor will expect access to any IP that may result, and will expect you to handle IP responsibly. However it is unreasonable to expect you to agree to license terms, or to agree to assign or otherwise convey IP before it has been created. Moreover accepting such agreements from for-profit sponsors may jeopardize the tax-exempt status of bonds used to finance construction projects at your institution. Therefore we recommend that you avoid such agreements. It is reasonable to allow a sponsor to have a reasonable time (not more than 90 days) to review draft publications for potentially valuable IP before submittal of public disclosure. If IP is found, it will be in your best interest to protect it prior to public disclosure. You may wish to allow a sponsor to make suggestions and comments on drafts, but not to have veto power over a paper’s final form or publication. Regarding access to IP, it is reasonable to give a sponsor an initial look at inventions or discoveries, and perhaps a right of first refusal for a license or an option to such discoveries. However license and option terms should be left until an invention is made and the sponsor shows interest, not included in a research agreement. License terms include whether the license is exclusive or non-exclusive, what expenses will be paid by the licensee, what royalties or up-front payments will be made, etc. These are best considered after an invention has been made and documented, and its value is understood.

12. Who Owns Deceased Faculty Member’s Intellectual Property?

Q: A faculty member of ours recently died. Who owns their data, files, and research that was worked on? Does this material become the property of the University or does it become a part of their estate? What happens to a thesis of a graduate student the person may be being counseling?

A: To determine this, you will have to look to your institution’s data ownership policy and OMB A-110 if federally funded. If there is no policy defining data ownership for that individual in that situation, the individual’s estate may own the data and but the institution very likely owns the physical representation of the data. State law also may play a role. This can create problems for the institution if the data resulted from work on a sponsored program, or if there are questions about scientific integrity. The deceased faculty member’s estate has no claims on the graduate student’s data, but there can be significant problems if the student recorded her work in the same notebooks as the faculty member. Each individual should have separate notebooks and records!

13. Non-Disclosure Agreements

Q: When you enter into non-disclosure agreements, particularly with industrial partners/sponsors, are graduate students covered?

A: A policy should be established by the institution and documented. You may want
to suggest taking the position that students, *per se*, are not covered, but that covered proprietary information will not be shared with them. A student needs to be free of such restrictions in order to freely discuss his work as part of getting the best education possible. The other party should be notified that students are not covered by the obligations assumed by the institution. The institution should assure that students are not given access to the other party’s confidential information. If there appears to be a real need that a student be covered, a separate confidentiality agreement may be entered into, and I strongly recommend that it be approved by an academic manager, probably at the Dean’s level, because it is contrary to the policy of openness in education. In the case of a student who is ALSO an employee on a sponsored project to which the confidentiality agreement applies, the principles of openness in education might mitigate against covering them even in that situation, but some take the position that confidentiality is a fact of life in the real world and students should learn about it. In the very special case of a student who is an employee of a company sponsoring a study, most universities refuse to allow confidentiality. The university contracts to cover the student, but few interfere with any separate confidentiality agreement between the company and the individual. Some confidentiality agreements refer to proprietary information that is background used to determine if a sponsored program should be undertaken. It may be background for some of the things to be done on the project that the PI needs to know, but a student does not need to know. In addition, it is important that each party be required to identify confidential information in writing so there is no confusion at the time of disclosure about what is confidential and must be safeguarded.

A further complication is when there is a confidentiality issue, and the student has to do a thesis that must be examined by third parties. There have been problems with getting external examiners to agree to be bound by a confidentiality agreement, which can hold up the thesis examination process. It is best to get these issues ironed out by having a standard agreement that the University uses as a starting point for contract negotiation. These boilerplate contracts are around on University websites and other web sources.

14. CFDA numbers and contracts

Q: Is there a CFDA number associated with a Federal contract? The agency conducting our A-133 audit keeps demanding one.

A: CFDA is “Catalogue of Federal Domestic Assistance”. There is generally not a CFDA number associated with federal contracts because a contract is “procurement,” not assistance. There is no CFDA number associated with some grants, e.g. from AID Department of State, because they are “foreign” rather than “domestic”. However, good luck in getting some auditors to understand that reason for not having CFDA numbers for some federal programs! Maybe appeal to the audit’s supervising partner!

15. Invention Reports to the Feds

Q: If an invention can really be attributed to multiple Federal grants, from multiple agencies—and the two PIs are at two different institutions, should each individual grant just separately report the invention to the Feds? Is there some kind of protocol?

A: First, get an arrangement in place between the two institutions as to who will be responsible for the development/commercialization of the invention. It is important to keep in close communication with the
collaborating institution and the sponsors. Then, each institution should report to its sponsors; preferably in coordinated reports. If both institutions decide not to develop the invention, the involved agencies can duke it out. If the invention is developed, be sure ALL agencies are represented on the patent, as required by 37 CFR 401.

16. COI Forms
Q: What kind of form or statement should you have faculty members sign regarding Significant Financial Conflict of Interest as part of the grant approval process? Are there any examples?

A: It varies, some have a specific separate COI form for each sponsored project and each IRB or IACUC form. State and federal law may dictate how the disclosure is handled. Here are some considerations.

1. COI that “that might, or might appear to, affect the design, conduct or reporting of this activity” satisfies the PHS and NSF regulations that apply to each such award. I suggest that, even if not requires, such a COI statement be attached to each proposal’s file.

2. There may be a need for another question to cover a state COI law that measures something slightly different, but is still a COI.

3. There are very good reasons for a similar COI disclosure to go with each IRB protocol submitted for review. It may be identical to one for a sponsored program funding the research, but really needs also to be in the IRB files.

4. At least one institution asks, “Is this research for the purpose of regulatory approval, including clinical trial?” with the definition: “Regulatory approval, including clinical trial” means a study known to be intended for use by the Federal Government in developing an agency action that has the force of law.” This is because that institution established the PHS/NSF standard of $10,000 or 5% equity as the threshold for financial conflict of interest EXCEPT for these matters, which that institution considered especially deserving of absence of the merest hint of COI and so established a threshold of $0.

5. Questions related to publication control, specified supply sources, supervisory COI influence, and privileged access to research results could also be asked in a COI questionnaire for each project. This will ensure that the University is making the strongest efforts to ensure that research is clearly objective. The question sheet is a useful educational tool as well.

17. IPA
Q: We have a subcontract with a VA Research and Education Foundation. In performing our subrecipient monitoring duties we find that the foundation does not have an A-133 audit conducted because they claim not to have sufficient federal funds to require one. Upon examination of their audited (not A-133)financial statements they did have more than $500K in federal revenue from Interagency Personnel Agreements (IPAs). When asked why they did not have an A-133 audit and they said that, per Tony Ryan at OPM, The Office of Personnel Management has determined that an IPA assignment is not a federal award or a contract and therefore, reimbursements associated with IPA assignments do not trigger the need for an A-133 audit. If these agreements were issued under CFDA 27.011 Intergovernmental Personnel Act (IPA) Mobility Program,
would not they be subject to A-133? Is there another federal IPA program that is not under a CFDA?

A: IPA’s are actually personnel agreements. The “sponsoring” organization agrees to reimburse the “sponsored” organization certain personnel costs so that the “sponsor” can “borrow” a person from the “sponsored” organization but leave that person formally on his home institution’s payroll. The concept was to get special skills, or to give special experiences, without the individual losing benefits, continuity, and seniority while on assignment. The agreement may have other things in it, too, but it is primarily for this personnel purpose. Unless they explicitly specify CFDA 27.011 in the award, the program does not meet the requirements for being Federal Assistance or Procurement, so it is simply an agreement not subject to cost principles. An IPA is usually handled in a university as a sponsored program because that is where the expertise lies in the organization for negotiating, executing, and administering an agreement that brings in federal funds. Hence it is reasonable that the total of IPA agreements not be counted in the total of transactions necessary to meet the A-133 threshold.

18. EEO and Naming Personnel In Grant

Q: I have recently met with HR and Affirmative Action at my institution about naming personnel in a grant. A PI insisted that because a person was named in a funded grant application, they had to be hired. From the HR perspective, it bypasses the approved institutional hiring procedures. From the Affirmative Action perspective, it constitutes an unofficial “waiver” of pre-hire AA review. The issue itself is very important and we wanted to come up with an institutional guideline.

A: If a person is hired as a permanent, full time employee, recruitment needs to follow EEO requirements, EXCEPT perhaps a) students, and b) post-doc employees (as opposed to fellows, who are not employees!). This is also a federal requirement. If the person is a contract employee or temporary some requirements may not apply. Naming an individual in a proposal has no effect on the requirement to meet your institution’s EEO employment requirements. This applies even if the person is a PI or Key Personnel of a grant. In that instance, you must propose alternate personnel with similar qualifications and get sponsor approval for these changes of personnel. HOWEVER, if for the individual proposed (applies whether named or TBN (to be named), there is a description of qualifications and duties written into the proposal, you can use that in the description for recruitment. It is wise to discuss each situation with HR and EEO. They should know that the job specifications for a particular position on a particular sponsored program may be more detailed, or require special skills, as opposed to an applicant for a generic “lab assistant” job. They also need to know that a sponsored program needs the position filled ASAP after project start date, so it is wise to work out a hiring process that can be started before the award is received, with only the final offer to come afterwards. In addition, much the same applies to getting consultants. Make the consult description, or consultant qualifications, specific to the needs of the project.

Internationally the law may vary from country to country. In some cases the equivalent of EEO legislation is a localization policy that prevents the appointment of a non-national if there is a suitably qualified national. Transparency requirements also mean that employment positions have to be advertised.