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In This Edition

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FROM THE EDITOR’S DESK
From the Editor’s Desk
Dr. Edward F. Gabriele

Last summer, I was on a flight back to the States from overseas and was sorting through the various video selections to try and pass away the long flight hours. I had pretty well run the course of my favorite television comedies and still had a good number of hours to expend. Looking at the feature-length films, nothing seemed to catch my interest. One title seemed to keep calling me, though. I could not determine why. Finally, I broke down, looked at the summary, noticed a few of my favorite actors, and decided to give it a try. I reasoned with myself that I could just turn it off if it could not keep alive my interest. In the end, I could not believe that two hours passed without my moving an inch. During those two hours, I laughed; I cried; I was drawn into the film as if I were one of its actors. In short, like so many other people’s experience in the past year or so, *The Best Exotic Marigold Hotel* captured my imagination and filled me with images and feelings that had been dormant perhaps for far too long.

Here was the story of seven British retirees who were at the brink of change in their lives. They sought something different. They sought something that could fill them up. Each of them in their own lives had read about this curious luxury residence overseas in India. They individually decided to take the risk. They never before had met. They then met on the journey, and when they arrived they all found something far different than anything they had expected. Their new experience posed enormously unexpected challenges in many deep levels for each of them. There were incongruities that exploded into laughter. There were serious confrontations that revealed long brewing difficulties. And still deeper, there were memories that emerged that required inner resolutions beyond what the filmgoer would have ever thought they would encounter. In the end, each of the seven retirees underwent an experience of unimagined transformation and profound change.

*The Best Exotic Marigold Hotel* is a most attractive film because its message mirrors powerfully the experience of each of us. Our lives are always on the road to change and transformation. Few of us, if any at all, pass through our years with just “the expected” happening to us. Our lives are marked by leaps and surprises that invite us to change and mutate in ways completely unexpected. Transformation is part of the human pathway. It is not always pleasant. It is what peppers our personal lives. It is likewise what seasons and energizes our professional service.

Over the years, the profession of research administration has mutated, changed, and grown. Now in the 21st century, we are in a far different professional place than were our predecessors some 70 or so years ago. Today we realize that research administration has evolved in ways totally unexpected. New needs arising from the experience of research itself have called upon our imaginations to discover, invent, and implement new forms of service so that research of every discipline can continue to benefit academic scholarship, industry, cultural advancement, and the common good of the women, men and children of this world.
The experience of such newness sometimes has felt like the discomfort and anticipatory anxiety that our seven retirees must have felt when they arrived at the hotel. Yet like them, the discomfort and fears have not diluted our resolve to reinvent ourselves and augment the services we provide into new forms of leadership, management, and future development.

Transformation is a way of life. It is the way that we humans live. It is the way that our profession advances, deepens, and adds substance to the ongoing development of inquiry in our communities, universities, agencies, and institutions all around the world. As such, it is the energy that both stokes the engines of our imagination, and sustains our daily efforts. It is important for us that, despite all challenges in the road, we remain open to the invitations that come along for change and deepening and re-invention of who we are and what we do. And it is this wonderful yet demanding sense of transformation that is at the foundation of this edition of the Journal of Research Administration.

In the course of The Best Exotic Marigold Hotel, Dame Judi Dench makes an important commentary about the retirees’ new experiences. She says, “This is a new and different land. The challenge is to cope with it; and not just cope, but thrive.” I would suggest that when we enter each new day of service in our profession, we enter a new and different land. Many days the challenges require every ounce of our strength to cope. Yet I would suggest that beneath all the challenges we encounter, there is the inevitable invitation to thrive.

Transformation.

As we read the articles to follow, I wonder how we will let their vision help us to help one another not just to cope, but more deeply to thrive in the never-ending experience of opportunity and newness!
ARTICLES
Translational Research: A Historical Overview and Contemporary Reflections on the Transformative Nature of Research

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Abstract
Translational research, the process of applying the discoveries of basic science to clinical practice, is drawing increasing attention from funding agencies and policy makers. Translational research can be thought of as an attempt to bridge the gap between our knowledge of the world and our ability to intervene in that world. Seen in this light, translational history is as old as humankind. The history of medicine is replete with successful and unsuccessful attempts to improve human health through theory-based changes in clinical practice. The race to understand the human immunodeficiency virus (HIV) and develop effective drugs based on that knowledge is just such an example. A few practitioners are able to combine focused basic science research with the clinical care of their patients. Research administrators can promote translational research by bringing basic scientists and clinicians together, demanding excellence in the conduct of clinical trials, and introducing practitioners to new developments in basic science.

Keywords: history of medicine, clinical trial, HIV, William Nyhan
Introduction

Recently, translational research has become a frequent topic of conversation in the health policy arena. As construed by the National Institutes of Health, the term translational research encompasses two distinct areas: 1) the process of applying discoveries generated during research in the laboratory, and in preclinical studies, to the development of trials and studies in humans, and 2) research aimed at enhancing the adoption of best practices in the community. (NIH 2005).

At first glance, the importance of such work seems so obvious that the layperson might be excused for asking why translational research has only now come to the attention of health policy leaders. The explanation lies in the increasing compartmentalization of research. Basic research, which seeks to discover the underlying principles of the natural world, is fundamentally different from applied research, which seeks to discover ways to influence or control that world. Basic researchers and applied researchers not only differ in their training and the tools they bring to research problems, but also in the way they think about the research process, and the mechanism by which their research is funded. There is seldom much interaction between molecular biologists studying the genome of a virus and clinicians conducting a clinical trial of therapy. They both may be studying the same disease, but they live, as it were, in different worlds and have different roles.

In recent years governmental agencies and pharmaceutical firms have invested considerable assets into basic science research, with the expectation that a greater understanding of the pathophysiological processes underlying disease will produce therapeutic applications and improved health outcomes. However, it is clear that funding agencies are dissatisfied with their return on investment. They point out, with some frustration, that although our understanding of disease at a molecular level has grown exponentially, the application of that understanding to disease prevention and treatment has lagged far behind. The expected breakthroughs in disease treatment have been slow to materialize. Hence the interest in translational research: How can we bring the new basic science insights from bench to bedside?

But exactly what is translational research? What does it comprise? How does one do it? Is the gap between theory and practice more a theoretical problem or a practical one? Is translational research merely a matter of rushing new drugs to market and funding novel but improbable research proposals? Unfortunately, most published and widely cited definitions of translational research are not helpful. Many descriptions are overly vague or cloaked in impenetrable prose. Consider the following explanatory excerpt from a government document: “…synergize multidisciplinary and inter-disciplinary clinical and translational research and researchers to catalyze the application of new knowledge and techniques to clinical practice at the front lines of patient care.” (NIH, 2009).

If translational research consists of nothing more than an attempt to turn theorems into therapies, it is of little interest to us here. However, the thesis of this article is that translational research is a topic of fundamental importance; it is a way of thinking about
and carrying out research that links insights, applications and clinical needs. We contend that the issues involved in translational research (linking our fundamental insights about how the world works with our attempts to control it) are as old as humankind. We shall trace, throughout the history of medicine, successful and unsuccessful attempts to bridge the gap between medical theory and practice using examples from the experiences of William Withering, Edward Jenner, Benjamin Rush and John Snow. Further examples will examine how basic virology research has spawned new HIV drugs, an instructive case of successful translational research. We shall give a detailed example of how one prominent physician, Dr. William Nyhan, a specialist in pediatric metabolic disease, seamlessly combines bench research and clinical practice. We shall then discuss the frontiers of translational research application, using examples from complementary and alternative medicine and the individualization of pharmacotherapy. Finally, we shall give pointers about what research administrators should know about translational research, how they can promote it and how they can manage translational research programs.

The History of Translational Research

The attempt to bridge the gap between theory and practice predates civilization itself. Our prehistoric ancestors constructed theories to explain how the world works and encoded them in myth. These myths explained such things as how the world came to be, the origin of illness and the relationship between the spiritual realm and everyday life (the sacred and the profane). Our ancestors also had practical problems. Some of these problems were straightforward, such as how to shoot an arrow or spear a fish. Other problems were more complex, such as how to ensure that there was a continuing supply of food to feed the tribe. Our ancestors dealt with the former class of problems by developing practical skills that were passed to new group members. They dealt with the latter class of problems with a primitive version of applied science, which we now call magic. (Eliade, 1957, Eliade, 2005).

An example will illustrate this. The Inuit of Alaska believed that the moon was inhabited by ferocious beings, part animal and part human, called tunghak. These tunghak controlled the passage of animal spirits between heaven and earth and, if displeased, might punish the tribe by withholding the flow of game. (Smithsonian, 2004). This was the theory. Now, how could the theory be applied to the practical problem of feeding the tribe? This job fell to a specialist, called a shaman, whose task it was to intercede with the tunghak, on the tribe’s behalf. Using the principle of sympathetic magic (Frazer, 1922), in which an effect can be produced by imitating it, the shaman carried out rituals wearing carved masks that represented the tunghak. Many of these masks have wooden hands attached to their sides; hands with holes in their palms and amputated thumbs. By giving the tunghak deformed hands the shaman ensured that they were unable to grasp the animals and withhold them from the people. (Smithsonian, 2004).

Western medicine, on the other hand, has been dominated throughout its history by empiricism. The prevailing explanation of disease during the classical age was an imbalance in the four constituent humors (blood, phlegm, yellow bile and black bile).
This theory was promoted by Hippocrates and Galen and passed by Islamic physicians to medieval healers. (Osborn, 2010). But whatever the beliefs of the classical world about the etiology of disease, whether caused by an offended deity or an imbalance of humors, healers observed that some treatments worked whereas others did not. Thus physicians tolerated a gap between their theories of disease etiology and their therapeutics.

It is now known that some of the ancient folk remedies were very efficacious and, on occasion, investigation into their mechanism of action led to genuine medical advances. In the eighteenth century William Withering, an English botanist, chemist and physician, learned of an old woman in Shropshire who was using a polyherbal formulation to treat congestive heart failure, then known as dropsy. After studying the concoction he determined that digitalis, a cardiac glycoside extracted from the foxglove, was the active ingredient and documented its effective use in 156 patients. (Lee, 2001).

The case of Edward Jenner and the development of vaccination is a particularly instructive example of reasoning from clinical observation. Although the story is well known there is widespread misunderstanding of the role Jenner played. The immunity of milkmaids who had prior cow pox (vaccinia) to smallpox infection had been observed by other investigators before Jenner, and at least five of these had attempted vaccination. Jenner’s contribution was not only to vaccinate 8-year old James Phipps with cowpox but to prove the child’s subsequent immunity by repeatedly challenging him with smallpox material and demonstrating that he remained well. This proof paved the way for the development of the standard immunizations given today. Sir Francis Darwin summed up the situation nicely, “In science credit goes to the man who convinces the world, not the man to whom the idea first occurs.” It is said that Jenner, though this experiment, probably saved the lives of more people than any other person in world history. (Riedel, 2005).

In the eighteenth century, academic physicians determined to develop a comprehensive philosophy of medicine and to base their hitherto empiric practice upon that theory. Although this seems laudable in the abstract the theory was often completely incorrect. One influential theory, proposed by an Edinburgh physician named John Brown, became known as the Brunonian System of Medicine and held that all disease was caused by either an excess or deficiency of nervous excitation. (Brown, 1780). It therefore followed that the patient should be treated with either stimulants to increase excitation or sedatives to suppress it. It is an axiom of logic that a false premise admits any conclusion, and in this case the false premise led to the conclusion that patients should be exhausted by the use of copious bloodletting, purges and emesis. This period has been referred to as the heroic age of medicine, although it is easy to see that the weight of heroism was borne by the patient. The consequences of linking practice to defective theory were not long in coming.

In 1793 a yellow fever epidemic raged in Philadelphia, the first capital of the United States. The president, George Washington, and his cabinet left the city; but Benjamin Rush, signer of the Declaration of Independence, early abolitionist, foremost physician of his age, and an early advocate of Brunonian medicine, remained in Philadelphia to care for the sick,
sometimes treating more than 120 patients a day. Unfortunately, his treatment consisted of massive bloodletting and calomel (mercuric chloride) purges. He was accused, quite rightly, by his contemporaries of killing more patients than he saved; but, lest we are tempted to be sententious, it must be remembered that Dr. Rush lived before the advent of clinical trials and, at that time, the opinion about whether a treatment worked or did not work was purely anecdotal. (Powell, 1965).

A more salubrious example of acting upon theory occurred in 1854 during the cholera epidemic in London, which began after the city dumped the overflowing Soho cesspools into the Thames. John Snow, a London anesthesiologist and skeptic of the prevailing miasma theory of disease, constructed a map showing cases clustered around the Broad Street pump. Although the cholera vibrio had not yet been discovered, he became convinced that cholera was water borne, and with the aid of his maps and solid statistics, convinced his local council to remove the pump handle thereby ending the epidemic. (Frerichs, 2009).

The routine use of clinical trials to test novel therapies did not emerge until the middle of the twentieth century. There are anecdotal reports of much earlier trials, the first of which is described in the Book of Daniel. Daniel, a hostage in the court of Nebuchadnezzar II, convinced the steward of the chief eunuch to allow him and his companions to continue their diet of pulses and water instead of the meat and wine served to the Babylonian youths. At the end of the trial Daniel and his companions paraded before the steward and were judged to be fatter and fairer then their contemporaries. (Book of Daniel 1:5-16).

The first clinical trial in the modern era was carried out in 1747 by James Lind, a naval surgeon aboard HMS Salisbury. This study is particularly interesting because it shows the power of the well conducted therapeutic trial; Lind was able to find a novel and efficacious therapy even though his theory was completely wrong. During the Age of Fighting Sail scurvy was a serious problem, and allegedly caused more deaths in the British fleets than French and Spanish arms. Lind believed, like his contemporaries, that scurvy was caused by the putrefaction of partially digested food in the intestinal tract. He then reasoned that providing acid as a dietary supplement might prevent the disease. William Harvey had suggested that lemons might be effective as a preventative measure because of their acidity, and Lind put this to the test in his therapeutic trial on 12 sailors with scurvy. Two sailors were given daily cider, two dilute sulfuric acid, two vinegar, two sea water, two paste and barley water, and two oranges and lemons. In six days the group receiving citrus fruits was largely cured. The British fleet eventually adopted the use of limes, which were cheaper than lemons, as a preventive dietary supplement. Interestingly, the medical establishment was slow to give up their theory of putrefaction and tended to dismiss Lind’s findings, which they could not account for, as anecdotal. The reluctance to accept new observations which conflict with old theories still plagues medicine, and is well described by Lind himself in his 1753 Treatise on the Scurvy, “…it is no easy matter to root out old prejudices, or to overturn opinions established by time, custom and great authorities…” (Dunn, 1997).
The clinical trial as we now know it did not materialize until well into the 20th century. Torald Sollmann, the dean of American pharmacology, first suggested the use of placebo controlled trials and blinded observers in 1930 in his paper, “The evaluation of therapeutic remedies in the hospital.” (Sollmann, 1930). Harry A. Gold, virtually unaided, developed the double-blind method beginning in 1937. (Shapiro & Shapiro, 1997). Equally important was the development of techniques for statistical analysis. WS Gosset, a chemist working in the Guinness brewery in Dublin, developed the Student's T-test in 1908 to monitor the quality of stout. (Raju 2005). The first application of analysis of variance was published by Sir Ronald Fisher in 1921. (Fisher, 1921). Harold Hotelling introduced multivariate statistics with the T2 test in 1931 and canonical correlation in 1936. (Hotelling, 1931; Hotelling, 1936). Logistic regression, an analytic technique commonly used today, was not introduced in the 1970s. Regulations protecting the rights of human subjects were not codified until 1974. (OHRP, 1993).

From Theory to Practice in the AIDS Era

As devastating as the AIDS era has been, it is almost certain that the period will be assessed by future historians as one of the shining moments in the history of medicine. Therefore it will be worthwhile to consider the achievements, as well as the failures, of that period. The rapidity in which the molecular details of the HIV life cycle were uncovered, new medications designed to exploit viral weaknesses, and those drugs tested in clinical trials, licensed and put to use is breathtaking. The HIV virus was first described by Luc Montagnier in 1983 and by Robert Gallo in 1984. (Gallo & Montagnier, 2003). The first antiretroviral drug, Zidovudine (AZT), was licensed by the FDA in March 1987. There are now 35 antiretroviral drugs, including multi-class combination products, all approved in less than one year by the FDA. The result of this remarkable success in translational research is that HIV infection, once considered a death sentence, is now a manageable disease. (FDA, 2012). Each year more Americans die of end stage liver disease from Hepatitis C than from AIDS.

The development of the new antiretroviral drugs began with a careful study of the viral life cycle, which will be summarized here. (NIH, 2005). HIV is an RNA virus, meaning that its genome is encoded in RNA, rather than DNA as is the case in humans. The virus envelope is covered with a surface protein, gp120, that binds to receptors and one of two co-receptors on the host CD4 cell. Binding allows the viral envelope to fuse with the plasma membrane of the host cell, permitting the virus to empty its RNA into the host cytoplasm. The virus converts its RNA genome into DNA by means of a unique enzyme called reverse transcriptase. The viral DNA enters the nucleus and fuses with the host’s genome with the help of another viral enzyme called integrase. (Craigie, 2001). The host cell cannot distinguish the integrated viral DNA from its own and transcribes it to make proteins for viral assembly. The viral proteins are produced in one long chain, and must be cut at appropriate places by proteases to become functional. New viral particles are then assembled in the cytoplasm and exit to infect new cells.
Antimicrobial therapy is designed to exploit differences between host cells and pathogens. Therefore, any unique features of the HIV life cycle are potential vulnerabilities and may be targets for carefully designed drugs. The HIV life cycle offers several such targets: 1) binding of virus to host cell, 2) transcription of RNA to DNA, 3) integration of viral DNA into host genome, and 4) protease segmentation of viral polyprotein. (NIH, 2005). Antiretroviral medications have now been licensed to attack each of these viral targets.

The first of these designer drugs was AZT, a reverse transcriptase inhibitor. The exact mechanism of AZT’s action is unknown but one action is to bind to the growing DNA strand and terminate it. (Lee & Chu, 2001). Interestingly AZT was first synthesized in 1964, before HIV was discovered, as a potential agent against other retroviruses but shelved when it proved inert in mice. Soon after HIV was accepted as the etiologic agent of AIDS, the NIH began testing a series of drugs in a culture of human CD4 cells. This allowed them to make preliminary assessments of safety (does it damage the cells?) and efficacy (does it kill the virus?) before tests on humans or experimental animals. Burroughs-Wellcome donated 11 compounds for testing, including AZT. NIH scientist quickly demonstrated its safety and efficacy in tissue culture and animal models, and several months later began clinical trials at the National Cancer Institute. This phase one trial showed AZT could be safely administered to patients with AIDS, raised their CD4 counts and improved their clinical status. Burroughs-Welcome then conducted a well designed, placebo controlled, double blind study proving that treatment with AZT prolonged the life of AIDS patients. (Fischl et al, 1987). On the basis of this trial the company applied for expedited licensure and the drug was approved by the FDA on March 20, 1987. Only 25 months had passed between the time AZT’s efficacy had been demonstrated in the laboratory until it was licensed for clinical use. Nucleoside (or Nucleotide) reverse transcriptase inhibitors (NRTI) are now the backbone of all antiretroviral therapy regimens.

New classes of drugs were quickly developed. These included nevirapine, a non-nucleoside reverse transcriptase inhibitor (NNRTI) licensed in 1996. The NNRTIs are believed to bind to a critical region of the reverse transcriptase itself, thereby inhibiting the enzyme from changing conformations. The first protease inhibitor (saquinavir) was approved in 1995 and the first fusion inhibitor (enfuvirtide) in 2003. In 2007 two new classes of drugs were introduced, integrase strand transfer inhibitors (raltegravir) and CCR4 co-receptor antagonists (maraviroc). The latter class of drugs, also known as entry inhibitors, is a good example of the how molecular understanding can be translated to drug design. As the authors of one review state, “Thanks to the advances in the knowledge of the molecular basis of the mechanisms involved in the entry process, it has been possible to split it into several steps and design molecules to block each one of them.” (Briz, Proveda & Soriano, 2009)

Unfortunately, a new complication soon arose. Although antiretroviral therapy was effective in suppressing the HIV virus, the virus quickly developed resistance to the new drugs, leading to treatment failure. The origin of this problem lies in the virus itself. The reverse transcriptase enzyme is error prone without a mechanism to correct its errors.
It is estimated that the enzyme makes one error per genome per round of replication. In addition, HIV reproduces extremely rapidly within an infected cell, producing several billion viral particles each day in the untreated patient. Because of this, it is estimated that the HIV virus within an infected person produces every possible mutation every day. Most of these mutations have reduced reproductive fitness compared to the wild strain, but if the environment is changed by the addition of antiretroviral therapy, these mutants may be favored and proliferate. (Zdanowicz, 2006). Because of these factors almost all patients on antiretroviral monotherapy eventually develop drug resistance.

This problem was solved, or at least mitigated, by treating HIV patients with multiple drugs from several different classes. In one large scale study of patients on ART 72-80% were resistant to drugs from one or more classes, 48% to drugs from two classes and 13% to drugs from three classes. (Richman, 2004). For this reason monotherapy is no longer used. New HIV patients begin triple therapy, with drugs from two classes. A typical regimen will be composed of two nucleotide reverse transcriptase inhibitors (NRTI) and one non-nucleoside reverse transcriptase inhibitor (NNRTI). Alternatives include two NRTIs and one protease inhibitor, or two NRTIs and an integrase inhibitor. (Sax, Cohen & Kuritzkes, 2011). Thus there are dozens of combinations of ART drugs from which to choose in treating a new HIV patient. But this presented a further problem - which combinations were best? This was a question to which basic research had only limited answers. Certain combinations were thought inadvisable because of similar resistance patterns or additive toxicity, but in many cases theory could not predict why one combination worked whereas another did not. The answer had to be worked out empirically, in multicenter clinical trials. Fortunately, US HIV researchers agreed to collaborate and share information in large, multi-center study groups, thereby accelerating the pace of research.

The HIV experience has taught us that the fundamental insights obtained in focused basic research can result in clinical trials and practical applications in months. It also shows that unforeseen problems arise in clinical application that cannot be explained by existing theory. However, these clinical conundrums present new problems for basic researchers to ponder. The lessons learned from the AIDS epidemic are already being applied to other diseases. A detailed study of the Hepatitis C virus life cycle has yielded two protease inhibitors that have been studied in numerous clinical trials and shown to improve cure rates in certain hard to treat groups by 30%. (Pearlman, 2012). Other drug classes, including RNA polymerase inhibitors, are currently undergoing clinical trials.

The New Frontier

What is the new frontier for translational research? Some predictions can be made with confidence. It is almost certain that the translational techniques pioneered during the AIDS epidemic will be applied to viral diseases which are either newly discovered or have no specific therapy. Molecular biologists will study the life cycle of these pathogens and design drugs that exploit these insights. But what opportunities await that are less obvious?
The first area that comes to mind is the use of complementary and alternative medicine (CAM). At first glance research in CAM seems to be oriented in the opposite direction from the translational research that has been described so far. It is not so much a matter of bringing proposed therapies to practical application as it is to validating the efficacy of existing therapies and discovering the basis for their putative effects. In other words, CAM research seems like it is moving from bedside to bench, rather than the reverse. However, preliminary research into some CAM modalities raises basic questions that may find their application in novel and exciting therapies. Take the example of acupuncture. There is now general acceptance throughout western medicine that acupuncture has legitimate therapeutic applications. NIH has even released a consensus statement that acupuncture is clearly effective as treatment for postoperative, chemotherapy and pregnancy induced nausea and vomiting and for postoperative dental pain. The NIH panel also admitted that acupuncture might be useful as adjunctive therapy for such diverse problems as addiction, tennis elbow and fibromyalgia. (NIH, 1997). But although there is a consensus that acupuncture is effective for some ailments, there is little understanding of its mechanism of action. Recently, researchers have used new neuroimaging techniques, such as functional magnetic resonance imaging (fMRI) and positron emission tomography (PET) to study acupuncture. (Hammerschlag, 2009; Rosen, 2009). These studies suggest a new paradigm for understanding the central nervous system with connections between the autonomic nervous system, the neuro-immune system and hormonal regulation. (Cho et al. 2006). It is quite conceivable that this new understanding, fueled in part by CAM research, will lead to novel therapies in the future.

A second area that has great research potential concerns understanding the genetic differences among patients that explain their differential responses to medications. If one examines the results of any clinical trial of a new drug it will be found that some of the experimental subjects respond favorably whereas others do not. If we could better understand these differences in response we could individualize therapy. Although in most cases we cannot say why a patient did or did not respond to therapy, in some cases we can. It had been observed that Afro American patients have much lower cure rates (sustained virological response) for Hepatitis C than do Caucasians, when treated with pegylated interferon and ribavirin. It turns out that a single polymorphism near the IL28B gene on chromosome 19 is associated with a two-fold reduction in response to interferon, and that this allele is much more frequent in Afro American patients than it is in those with a European ancestry. (Ge et al, 2009). A second example of genetic differences comes from HIV therapy. Abacavir (ABC), an NRTI, is an especially valuable antiretroviral drug because viral strains that are resistant to AZT and lamivudine (3TC) are usually sensitive to Abacavir. However, some patients have a severe and sometimes fatal hypersensitivity to the drug. It was found that this sensitivity was associated with the presence of HLA-B*5701. This HLA-B allele occurs in about 5% of European populations but in up to 10% of some Indian subpopulations. Screening for this polymorphism has virtually eliminated the hypersensitivity reactions and preserved the drug as a useful therapeutic agent. (Mallal, et al. 2008).
Translational Research in Clinical Practice

Now consider how an individual physician might engage in translational research, moving back and forth between basic science and clinical care. One example is the practice of Dr. William Nyhan, a specialist in metabolic disease and formerly Chairman of Pediatrics at the University of California, San Diego School of Medicine. The following account is based on a lecture given by Dr. Nyhan in February 1984. His remarks are paraphrased here. “Sometimes I encounter a child whose symptoms suggest a metabolic disease but who tests negative for all known disorders. I know that many children with metabolic diseases excrete abnormal substances in their urine, so I take a specimen back to my lab and run it through a gas liquid chromatograph (GLC) to separate and analyze the compounds in the patient’s urine. The GLC output is a graph that shows a series of peaks, each peak corresponding to a different substance. I compare the graph of the patient’s urine with the graph from a healthy patient. If I see abnormal peaks I know that the child has something in his or her urine that shouldn’t be there. Then I ponder what kind of compound would make peaks like that. I make a guess, based on my knowledge of metabolites and GLC, and then synthesize that compound. I then run it back through the GLC and compare the outputs. I keep tinkering until I can find a compound that, when passed through a GLC, produces an output that perfectly matches the abnormal peaks in the patient’s urine. Now I have a candidate substance. I then design a test for this compound in urine. Then I study the charts of metabolic pathways to determine at what point a disruption would result in such a compound being excreted into the urine.” The virtue of this approach to clinical care is undeniable and has resulted in the discovery of several new diseases. (Jellum, Stokke & Eldjarn, 1972). This approach has been used in many fields of medicine as practitioners transition from population-based guidelines to a more personalized approach. Although this approach is exciting it presents numerous obstacles that must be overcome during its translation from bench to bedside.

The Role of Research Administrators

In light of this discussion the interested research administrator may wonder what role he or she has to play in advancing translational research. The authors offer the following suggestions based on their years of experience in basic research, clinical research and patient care.

1) Basic science researchers, and to a lesser extent clinical researchers, have a very narrow focus, and therefore are often not aware of other research that goes on in their own institution. Bringing basic scientists together with their clinical counterparts will stimulate new ideas and collaboration. Holding institutional conferences will not suffice. Clinicians must see laboratories and molecular biologists must see clinics. Social networking may provide a technological bridge to achieve this objective.

2) Encourage participation in large multicenter trials. These are usually well designed and will allow your junior researchers to collaborate and interact with senior investigators.
3) Hire an experienced statistical consultant who understands machine learning and involve him or her in every aspect of the research program. Statistical software packages are not a substitute.

4) Encourage postdoctoral fellows in clinical specialties to participate in both a basic research project and a clinical one so that they will be exposed to a wide array of research tools and learn skills necessary for both types of investigation.

5) Insist upon excellence in research design. Use blinding, randomization and placebo controls when applicable. Poorly designed trials waste money and convince no one.

6) Bring in guest speakers who have new techniques and new approaches to research problems. Examples include catastrophe theory, chaos theory, neural networks, complexity and nanotechnology.

7) Eliminate funding stovepipes that separate support for basic and applied research.

8) Foster public-private partnerships to facilitate innovation transfer.

Reflection

The metaphor upon which this issue of the Journal is built is that of transformation, and it is difficult to imagine a more fitting example of transformation than translational research itself. Translational research seeks to transform our understanding of how the world works into something practical, something that can be used to relieve human suffering. Although humankind has struggled with this problem since before the advent of human history, it is only in the past one hundred years that our efforts have become scientific, with the beginning of controlled clinical trials. The emergence of research administration as a profession has paralleled the growth in our understanding of research design and human subjects protection. Although once thought of as consisting of little more than clerical and bookkeeping duties for assisting biomedical or physical science research, research administration now embraces leadership to assist research in history, law and ethics, other academic disciplines and technical specialties. It is very likely that, in the future, it will be research administrators, rather than the scientists themselves, who will promote the innovative direction upon which research will proceed. And, like midwives, research administrators cannot determine what will be delivered, but they will play a crucial role in ensuring the quality of the product. Are research administrators ready to assume that role and that responsibility?
References


Nursing Research: Understanding Nursing Innovations for the Transformation of Communities of Care

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Abstract
The article describes the potent impact of nursing research in shaping and implementing current healthcare trends. Further, the article provides contextual information relevant to the historical development of nursing science from Florence Nightingale forward while marking milestones of achievement in nursing research endeavors and subsequent changes in healthcare. Finally, the article explores the complexities of nursing educational preparation for research and describes how all levels and types of nurses participate in the research process. Research administrators will achieve an improved appreciation for the role of nursing research in the transformation of healthcare in our current time.

Keywords: nursing research, nursing innovations, nursing transformation of healthcare
Introduction

“I have an almost complete disregard of precedent, and a faith in the possibility of something better. It irritates me to be told how things have always been done. I defy the tyranny of precedent. I go for anything new that might improve the past.”

…Clara Barton

The purpose of this article is to explain the phenomenology of nursing and nursing research, describe the history of nursing research, and consider the impact of recent and future nursing researchers in meeting the needs of society. Understanding the underlying paradigm of nursing research, its passion for discovery of new facts, and the power of nursing research to innovate and transform communities of care is essential to understanding nursing. The outcome of understanding the purpose and trajectory of nursing research is an appreciation of the legacy of nursing research and its many contributions to healthcare innovations that promote health and healing across all healthcare settings and amongst all people.

The term research derives from the Middle French term “recherché” which translates as “to go about seeking.” (Merriam-Webster, 2012). One modern definition describes research as “systematic investigation in order to establish facts and reach new conclusions.” (Polit & Beck, 2008). Researchers systematically and objectively attempt to provide answers to questions. The consequent knowledge transforms the world with new paradigms.

As research endeavors enter the second decade of the 21st century, the auspices of transformation take on entities contributing innovations for the betterment of humankind. Contemporary healthcare faces the challenge to transcend old models and build communities of care. (Kuhlmann & Annandale, 2012). This century is seeing a reshaping of the epistemologies of research; yet, the ability to communicate a clear understanding of nursing research to interdisciplinary research administrators remains ever challenging. (Egnew, 2009). Each nurse has both moral and ethical obligations to seek better possibilities for caring for society. Nursing research specifically seeks knowledge to reframe past health assumptions, thus altering the healthcare paradigm and enabling nurses to provide innovations to improve care, promote healing, decrease suffering, and expand communities of caring past inefficient precedents. (Harrowing, Mill, Spiers, Kulig, & Kipp, 2010).

Nursing is one of the disciplines contributing to the transformation of healthcare into communities of care. Yet, the transformation affects nursing research itself. (Watson, 2009). Comparatively, nursing research is relatively young, with the majority of peer-reviewed publications occurring over just the last 50 years. (National Institute of Nursing Research, 2003). One early definition stated that nursing research is the systematic investigation of patients and their health experience. (Burns & Grove, 2005). This definition does not seem to appreciate fully nursing research’s rich legacy and the range of innovations and transformations resulting from this discipline. Today it is realized that nursing research has evolved from a simplistic “bedside” and single patient perspective to a complex and broad-ranging societal change agent. (International Council of Nurses, 1999).
The Phenomenology of Nursing

“I think one’s feelings waste themselves in words; they ought all to be distilled into actions which bring results.”

…Florence Nightingale

The term phenomenology is a term originating from the Greek terms phainómenon “that which appears;” and lógos “study,” which combined means the study of the structure of a subjective experience and consciousness. (Moran, 2000). In its most basic form, phenomenology thus attempts to create conditions for the objective study of traditionally viewed subjective topics: consciousness and the content of conscious experiences including judgments, perceptions, and emotions. Phenomenology utilizes systematic reflection to determine the essential properties and structures of experience. Understanding the phenomenology of nursing enables others to understand how the nursing profession fills so many diverse roles yet shares a common goal: to support humanity on their journey across the illness-wellness continuum. As Nightingale’s quote indicates, nursing takes action based on subjective experiences and consciousness (“feelings and words”) to the needs of individuals and their respective societies.

Nursing phenomenology encompasses the structures and experiences defining the discipline of nursing as a whole. The foundational philosophy of nursing is the use of art and science to commit nursing knowledge to the holistic wellbeing of individuals and groups. Nursing provides a multifaceted paradigm. This paradigm is focused on care from the patient’s perception and interpretation of the same events as well as the patient’s responses to stimuli and motivations for individual behaviors. Logically, it also includes necessarily the nurse’s perceptions and interpretations of what is occurring. Florence Nightingale and Virginia Henderson, nursing research pioneers, provide classic definitions of nursing sensitive to this paradigm. Nightingale defined nursing as “the act of utilizing the environment of the patient to assist him in his recovery.” (Nightingale, 2010, Preface). Henderson explains the role of nursing as “…assist(ing) individuals sick or well, in the performance of those activities contributing to health or its recovery (or to peaceful death) that the individual would perform unaided if he had the necessary strength, will, or knowledge, and to do this is such a way as to help him gain independence as rapidly as possible.” (Henderson, 1966, p. 15). Both Nightingale and Henderson acknowledge that nursing research must relate to the patient and the context in which he or she lives.

The American Nurses Association (ANA) speaks of nursing operations as “the diagnosis and treatment of human responses to actual or potential health problems.” According to the ANA, nursing care has four principal characteristics: 1) the phenomena of patient care concerning nurses; 2) use of theories to observe the need for nursing intervention and to plan nursing action; 3) the nursing action taken; and 4) an evaluation of the effects of the actions relative to the phenomena. (American Nurses Association, 2010). Intrinsically to this definition is the nursing process. The nursing process is a framework consisting of an assessment of the phenomena of interest, data collection, diagnosis, planning, treatment, and
evaluation. Standards of Practice support the nursing process. Nursing scholars developed the standards from systematic, continuous collection of data concerning phenomena of interest in providing nursing care.

**Nursing Research and Its History**

“Nurses have come a long way in a few short decades. In the past, our attention focused on physical, mental, and emotional healing. Now we talk of healing your life, healing the environment, and healing the planet.”

—Lynn Keegan

Consistent with other federal agency usages, the United States Department of Defense defines basic research as “systematic study directed toward greater knowledge or understanding of the fundamental aspects of phenomena and/or observable facts without specific applications toward process or products in mind.” Applied research is defined as “systematic study to gain knowledge or understanding necessary to determine the means by which a recognized and specific need may be met.” (DoD Financial Management Regulation 7000.14-R, 2010).

The nursing process has similarities to the scientific process. The goal of the nursing process is developing a plan to restore, maintain, or promote health or a dignified death. (American Nurses Association, 2003). This is aided greatly by research. The goal of the research process is to formulate a plan to gain information for application in similar situations. The components of the scientific research process include systematic observation, measurement, and experimentation to response to the formulation, testing, and modification of hypotheses. These components are comparable to nursing process components: assessment, diagnosis, planning, treatment, and evaluation with the shared goal of seeking new knowledge. The application of new knowledge varies between nursing and research sciences.

Traditionally, Florence Nightingale receives credit for providing the foundations of nursing research. If one looks at her work through the narrow lens perspective categorizing nursing as a “pink collar” profession for females wishing another lifestyle than traditional marriage and childrearing, then one would inappropriately conclude that her care only focused on making her patients more comfortable. A more enlightened view of Nightingale’s work acknowledges and appreciates her achievement as a dynamic prelude to innovative and sweeping knowledge transforming communities via epidemiology, statistics, public health practices, and social justice. Her work validated the transformation of nursing from the perception of individuals with no professional knowledge tending to individuals with health issues to contributing efficacious healing practices for the total human person based on facts and evidence.

Over time, nursing continued its core service of holistic caring but expanded into the processes of research to address the needs of society on a broader scale. Other nurses were quieter agents for meeting those needs but recognition of the overall nursing contribution...
to healthcare knowledge arguably is due to Nightingale’s work. “Notes on Nursing,” written in 1859, describes Nightingale’s interest in environmental factors promoting physical and emotional wellbeing. Nightingale also demonstrated expertise in epidemiology and statistical analysis with her research analyzing factors affecting soldier mortality and morbidity during the Crimean War. Her research drove changes in nursing care as well as public health and military policy. Within her leadership roles, she advocated for the guidance of nursing practice based on research findings. Her recommendations at that time were difficult to implement due to the impression of nursing program superintendents (overall leaders of the nursing schools) that nursing students should learn obedience to orders over critical thinking. An important component of Nightingale’s legacy is her admonition to nurses to systematically record observations of the phenomena encountered while directly caring for a patient. These observations directed at identifying improving care are the underpinning of nursing research.

The integration of research into nursing was not limited only to the experience of Florence Nightingale. Nurses in other countries also used the search for new knowledge to implement social change. Around the same time that Florence Nightingale was receiving her nursing training, Dorothea Dix testified about the treatment of mental illness patients institutionalized in New York City. Similarly, Lillian Wald used research to campaign successfully for improvements in urban public health. Lavinia Dock continued Wald’s work and was able to report on improvement in public health outcomes secondary to placing a nurse in public schools and using the visiting nurse concept to visit the homes of sick children.

Faye Abdellah (1994) stated general nursing trends influenced nursing research. These trends were described as chronological “phases.” The phases transitioned from the early “service phase” lasting from 1900 to 1946, to the middle “academic phase” (late 1940s to early 1960s), and finally to the “clinical phase” (early 1960s to the 1990s). Nursing research during each phase had distinctive characteristics. The “service phase” characterized nurses as preparing for a service function with education predominantly within hospital-based programs. Nursing research conducted during the service phase typically consisted of time and motion studies of nursing workplaces or sociological inquiry into nursing roles and functions. Nurses might assist in data collection but were not involved in study design or implementation. Typically, sociologists or behavioral scientists studied nurses and nursing, particularly the sociological experiences of nurses. An example of a study during this phase is the Goldmark Report conducted in 1923. The Goldmark Report actually crossed over from the service phase into the academic phase of nursing research. Study findings recommended advanced education for teachers, administrators, and public health nurses. This report led to the establishment of nursing programs at Yale, Vanderbilt, and Western Reserve universities. Nurses did initiate some practice-based studies during this phase. For example, hand washing practices were reported in a study by Jean Broadhurst in 1927.

The “academic phase” saw nursing research focused on the transition of nursing education to universities. The first nursing research study of the status of nursing education was in 1906 by Adelaide Nutting. The University of Minnesota established the first
university-based program of nursing education in 1909. Research intensively studied curriculum, teaching methods, and role functions of the administrative and faculty roles within collegiate nursing education programs but limited clinical or practice research. Most nurses during this phase received their advanced degrees in education rather than nursing. However, the service and academic phases did have individuals proposing nursing research based on procedures such as Doris Schwartz describing, in 1948, the effectiveness of nursing care to induce sleep in patients and decreasing the patient’s need for medications. (Abdellah, 1994).

The “clinical phase” coincided with the appearance of advanced practice nurses. As the advanced practice nursing roles evolved, the “clinical phase” of research devoted research to validate nursing practices based on basic sciences and outcome measures of nursing practices on affecting patient care. Nursing research eventually generated clinical benchmarks and practice guidelines. (Abdellah, 1994).

**Various Distinctions of the Nursing Profession**

“Nurses serve their patients in the most important capacities. We know that they serve as our first lines of communication when something goes wrong or when we are concerned about health.”

…Lois Capps

One of nursing’s greatest complexities is the provision of multiple levels of entry into practice. These variable levels of entry originated in moving from hospital to academic-based programs and wartime needs to increase production of registered nurses. Nevertheless, one may still qualify for registered nursing licensure by completing a diploma program (largely hospital based), an associate degree program, or a bachelor’s program. Yet another option, commonly referred to as the “second degree” option where one has a bachelor's degree already in another field, allows individuals to take a 12 – 18 month accelerated program and receive a Bachelor in Nursing at the conclusion. Diversity of nursing educational preparation is important for research administrators to understand because nurse researchers may originate from any of these pathways. This background influences the focus of each nurse researcher. Understanding these matters may generate new and unforeseen ways in which nurse researchers can expand and enrich the research program of an institution.

The American Nurses Association (ANA) began formally describing nursing Scope and Standards of Practice in 1973. The ANA’s Standards of Nursing Practice are authoritative statements describing the responsibilities for nurses to be accountable and reflective of nursing values and priorities. The National Council for State Boards of Nursing (the formal organization comprised of each state's Board of Nursing) uses these documents as the foundation for nursing licensure requirements and legal nursing scope of practice descriptions for each state. The Practice Acts serve as the legally binding description of who is recognized as a nurse, the functions that a nurse may perform (including research), and the legal and ethical accountability of the nurse. (American Association of Colleges of Nursing, 2004).
As with nursing entry educational levels, the terminal degree in nursing also has a variety of options. Doctorates of Philosophy (PhD) degrees are considered “academic” degrees, while “practice” doctorates focus on the expertise of the profession. (American Association of Colleges of Nursing, 2001). As in most other fields, the PhD prepares the graduate to conduct original research and is the terminal degree for the profession. A PhD program consists of theoretical foundations, research designs, and data analysis, all of which develop one’s ability to formulate studies that will produce new knowledge through development and testing of nursing theory. The Doctorate of Nursing (DSN, DNS) or Doctorate of Nursing Science (DNSc or DScN) is also a research-oriented degree but not as common as the PhD.

The American Association of Colleges of Nursing endorsed the Doctorate in Nursing Practice (DNP) in 2004 as a means of developing expert clinical practitioners. The role of these practitioners is to ensure the highest quality outcomes for patients, and as a response to the doctoral preparation of other healthcare professions such as pharmacy and physical therapy. The graduate focuses on using research knowledge to inform practice rather than generate original research. (American Association of Colleges of Nursing, 2004).

Whether or not a DNP should assume the role of principal investigator (PI) in an original research protocol remains a point of controversy. There is no position statement saying the DNP cannot serve as a PI; however, the AACN Essentials document clearly states this practice degree does not prepare one for a research career. (American Association of Colleges of Nursing, 2004). In the absence of unequivocal guidance, it is up to each institution’s research and development leadership to create policy regarding what characteristics are required of PIs at that institution. Table 1 delineates the various potential educational pathways available for nurse researchers.

<table>
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<tr>
<th>Program Outcome</th>
<th>PhD, DNS, DNSc</th>
<th>DNP</th>
</tr>
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<tbody>
<tr>
<td><strong>Program Focus</strong></td>
<td>Academic preparation to contribute to nursing science using research methodologies to test or create nursing theories</td>
<td>Practice preparation to maximize clinical expertise for the purpose of improving quality care for patients</td>
</tr>
<tr>
<td><strong>Program Focus</strong></td>
<td>Science, Theory, Research Methods</td>
<td>Practice oriented subjects such as pharmacology and advanced pathophysiology</td>
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Nurses may be involved in research in any roles and settings. Educational preparation, professional experience, and diverse local programs should guide the role that each nurse may fulfill in a nursing research study. Such local programs would include those for human research protections or other research or research administration areas. The ANA includes research, including utilization and participation in original research as data collectors or research assistants, as a standard of professional performance for both registered and advanced practice nurses. The ANA’s Council of Nurse Researchers position statement.
described the roles of nurses in research according to the individual level of educational preparation. The Council described a trajectory of investigative functions with nurses with more educational preparation (master’s degree, doctorate, or post doctorate) designing and conducting investigations, while associate and baccalaureate degreed nurses use nursing research findings or assist researchers to identify problems and collect data to develop relevant studies. (American Nurses Association, 2012).

The previous information is presented to clarify the complexity of nursing’s professional world. There is no generic entry level or consistent professional trajectory. Nursing has a variety of ways to advocate and care for others. Their research reminds their colleagues in other health services of the human face of healthcare rather than simple units of measurement. This also gives insight into the diversity of practicing nurses involved in the nursing research process. By way of summary, Table 2 provides a delineation of the various levels and types of nursing research areas.

**Table 2: Nursing Research Categories**

<table>
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<tr>
<th>Description of method</th>
<th>Quantitative</th>
<th>Qualitative</th>
<th>Mixed Methods</th>
<th>Outcomes Research</th>
<th>Bench</th>
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<tr>
<td><strong>Settings</strong></td>
<td>Collects, analyzes, interprets, and assigns statistical significance to research results via placing research topic into questions that are able to generate some form of numerical data (Pullen, 2000)</td>
<td>Focuses on the subjective meaning of an experience to an individual or group of individuals.</td>
<td>Utilization of a blend of quantitative and qualitative research methods to provide generalizable findings as well as describe the meaning of an experience</td>
<td>How the organization of nursing impacts, system, and patient outcomes instead of efficacy of individual interventions (Lake, 2006)</td>
<td>Purely experimental “Knowledge for knowledge’s sake” Application of findings does not immediately occur</td>
</tr>
<tr>
<td><strong>Implementation Potential</strong></td>
<td>Variable settings based on types of knowledge to be generated or applied</td>
<td>Setting is based on type of individual or population undergoing the experience of interest</td>
<td>Variable settings based on desired participants and type of knowledge sought</td>
<td>Variable settings based on desired participants and type of knowledge sought</td>
<td>Laboratory based May utilize human cellular components or animal model</td>
</tr>
<tr>
<td><strong>Description of method</strong></td>
<td>Verification of previously generated knowledge within a population or setting to facilitate improved healthcare</td>
<td>Provision of insight and clarification of meaning of experience to facilitate improved healthcare</td>
<td>Combination of quantitative and qualitative utilization rationales</td>
<td>Measurable outcomes of interventions within certain populations</td>
<td>Development of basic science for future translational and interventional studies</td>
</tr>
</tbody>
</table>


Nursing Research Innovations

Society often does not realize that many healthcare innovations improving quality of life originated from nursing research. For example, thanks to an intensive media campaign by the American Heart Association, the public today is more aware that women having heart attacks (myocardial infarctions) typically present with very different symptoms than men having heart attacks. However, it is doubtful many individuals can name the researcher describing this phenomenon. Jean McSweeney, PhD, RN, made this discovery while conducting qualitative nursing research to describe the experiences of wives whose husbands underwent heart transplantation. (McSweeney et al, 2003). Her contribution provided essential knowledge for accurate identification of women having myocardial infarctions and improved public awareness of female versus male heart disease variations. These findings have saved countless lives because research administrators advocated disseminating this information to communities impacted by heart disease.

However, to imply nursing research innovation is significant only to individual lives is erroneous. Research administrators must keep in mind that, as the world of nursing practice settings has grown, so has the impact of nursing research from the bedside impact to the boardroom impact. Nursing research findings lead to system-based innovations as well. Dr. Linda Aiken studies the impact of nursing within healthcare systems. She has consistently found magnet hospital staffing utilizing higher nurse staffing levels were related to lower patient mortality and increased patient satisfaction. (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002).

Policy is often shaped by knowledge derived from nursing research. One of the greatest areas of concern driving implementation of new health policies is healthcare disparity. (Institute of Medicine, 2003). Several nursing research studies have examined occurrence of healthcare disparity, described affected populations, identified the impact of healthcare disparities, and provided evidence sharpening healthcare policy to improve the health and overall quality of life in vulnerable populations. (Hinshaw & Grady, 2011). The National Public Health Service developed numerous initiatives and policies produced from these findings. Specific examples of initiatives supported by nursing research include: tobacco cessation studies, urban planning for improved healthcare access, and protocols specifically addressing healthcare needs of vulnerable populations. (Longest, 2002). Dialogue between nurse researchers and research administrators allow diverse visions to collaborate and advocate for policies that can drive changes for better population health practices. (Larson, 2003).

Very powerfully, nursing research can provide a voice for social justice. One nursing research study determined female victims with dark skin were less likely than females with light skin to have their injuries identified, documented, and treated. (Baker et al 2010). This study questioned the social justice of both healthcare and criminal justice systems in inequitably caring for these victims. These findings make a compelling argument to encourage nursing research serving as a voice for victims of social injustice. In fact, in our time there is an increased emphasis upon and interest in the social justice dimensions of healthcare
for individuals as well as for general populations. The entire history of nursing and nursing research is a uniquely rich resource by which to understand the potency of this dynamic between health and social justice as a phenomenon of humane care and human development.

**In Reflective Conclusion:**

**Transformation Into Communities of Care**

“Only a life lived for others is a life worthwhile.”

…Albert Einstein

In the experience of many persons, nurses routinely seem to demonstrate a level of care not received necessarily from other professions. In the 2011 Gallup Poll of “Most Honest and Ethical Professions,” nurses scored in the top rankings for the 12th time in the past 13 years, outranking professions such as clergy, teachers, firefighters, physicians, or police officers. (Gallup, 2011). Understanding and incorporating the experience of human care and compassion leads to increased and improved care for the health of individuals, systems, and communities. (National Institute of Health, 2004). Underlying this is the essential element of trust. Trust is significant for developing powerfully relevant research and transforming the human experience into communities of care. In research itself, deeper levels of trust between participants and nurse researchers have an impact on participation, attrition, dissemination of findings, and utilization of generated knowledge. Nursing’s public *persona* can be a powerful asset when attempting to identify research priorities important to individuals, groups, or communities receiving care. The trust generally instilled in nurses and professional nursing improves care and can empower research to make greater and more substantial contributions to the human condition.

This dynamic character of nursing and nursing research, in fact, positively transforms the practice of healthcare into the development of communities of care. As it steadfastly makes present to society the chaotic experience of suffering while the pursuit of healing is engaged, nursing reveals the human face of healthcare. It does not permit the human animal to hide from the inevitability of the human condition and the realities of human finitude. Too often, the human animal seeks to deny this inevitability. While always being partners in the process of healing, the care that is foundational to the act of nursing helps individuals and culture in general to maintain a mature acceptance of the harsh but ever present realities of sickness and even human dying. Thus society must always maintain an ever deeper and ever more profound appreciation of the profession of nursing and nursing research.

As is commonly known, a profession is defined as having an entry level of basic professional competency, levels of educational preparation and continuing development, a professional code of ethics, and a body of knowledge distinct from other disciplines. Historically, the nursing profession has clearly defined its entry-level competency and professional code of ethics. Nursing research has recently expanded development of unique scientific knowledge to meet the final criterion. This knowledge is not only important for
recognition of nursing as a profession, but more importantly, to utilize the unique knowledge and expertise of nursing to make substantial innovations for the continual improvement of healthcare. While other professions attentive to improving health have unfortunately estranged themselves at times from the reality of suffering, nursing embeds itself, makes itself present to the suffering, and transforms suffering communities into communities of care.

Research administrators can advance the development of research itself by a substantive understanding of the phenomenology of nursing and the contributions to improving healthcare derived from nursing research. The research administrator, as an agent of professional development, can assist nurse researchers to access appropriate settings and populations for nursing research studies. Research administrators can make a tremendous difference in the comprehensive nature of their organizations’ research via inclusion of nurse researchers on interdisciplinary research teams. These interdisciplinary efforts will integrate into research collaborations the contributions of some of the most powerful and ever-present experts who deliver deep and abiding levels of human care in healthcare, namely nurses. Nursing research adds expansively to this continuum. It not only provides the scientific expertise to generate sound, fact-based knowledge to improve health, but also embodies the ability to bring the experiences of those who suffer to those whose life is spent in discovering more deeply the human condition and how it can be improved.
References


Articles


Support from Chief Executives to Sponsored Programs Administration at Baccalaureate Universities in the United States

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Abstract
This research study examined support to sponsored programs administrators (SPAs, or research administrators) at baccalaureate universities from their chief executives. Support to SPAs strengthens the shared purpose of the university, enabling SPAs to serve as effective organizational representatives in business transactions pertaining to grants and sponsored programs. This descriptive, quantitative study grounded in organizational culture theory compared the level of support for sponsored programs and the level of support to sponsored programs administration. A survey instrument, the Sponsored Programs Administrators Survey (SPAsS), was developed to gather information from research administrators who were members of the National Council of University Research Administrators and were affiliated with baccalaureate universities in the United States. Based on the study findings, nonfinancial support from chief executives of baccalaureate universities is not related to the control of the institution, size of student enrollment, or level of sponsored revenue. The study also found that chief executives who supported sponsored programs were more likely to demonstrate behaviors supportive of SPAs. The research contributes to a deeper understanding by SPAs and institutional leadership of issues and concerns that weaken collaborative approaches.

Keywords: sponsored programs administration, research administration, support from chief executives, baccalaureate universities, supportive behaviors
Introduction

The goals of the institution are best realized when all its members work towards a common purpose that they construe together. The process of sense-making that leads to the development of the common purpose is described by constructivist theory. Constructivist theory suggests that socially construed reality emerges from relationships that are situated in leadership, which is described as a shared reciprocal process as opposed to a role assumed by a person or persons. (Lambert et al., 2002). When so enabled by chief executives of the university, sponsored programs administrators (SPAs, or research administrators) can and should be the participants in the shared process of leadership.

SPAs at baccalaureate universities need adequate support from chief executives to contribute to the leadership at their organizations. Literature discusses several reasons why SPAs need chief executives’ support. Some of the reasons include power imbalances that negatively influence the professional behavior of research administrators at universities. (Atkinson & Gilleland, 2007). Additionally, sponsored programs professionals at baccalaureate institutions regularly face challenges and ambiguities stemming from the political, legal, and business context in which they operate. (Lowry & Hansen, 2001).

Support from chief university executives does not necessarily require more budgetary resources, staffing, or expensive technology. Instead, or rather in addition, it requires certain actions and behavior on the part of the chief executives. For example, supportive behavior involves communicating to the wider university community the endorsement of SPA’s functions and policies, delegating adequate authority to SPAs, and mandating the use of internal processes for all sponsored activities. This study (Hamilton, 2010) focused on the types of support given by the chief executives that do not require financial outlays and that are available to SPA at baccalaureate universities. The purpose of the study was to compare the relationship between the support provided for sponsored programs and the support provided to sponsored programs administration (SPA) at baccalaureate universities in the United States as defined by Basic Carnegie classification. (The Carnegie Foundation, 2005).

Research Questions and Hypotheses

The study sought evidence connecting better support to SPAs with relevant behaviors of chief university executives and with the chief executives’ overall support for sponsored programs. The nonfinancial support from chief university executives was compared at public and private universities with different levels of sponsored revenue and different sizes of student enrollment. The following research questions guided this study.

Research Question 1: At baccalaureate universities, what is the relationship between the level of support provided by chief executives for sponsored programs, and the level of support provided by chief executives to SPA?
The hypothesis was tested that there is a higher level of support to SPA at universities in which chief executives demonstrate higher level of support for sponsored programs.

Research Questions 2-4: Is there a difference in the level of support provided for sponsored programs and the level of support provided to SPA between (a) public and private baccalaureate universities; (b) baccalaureate universities with different sizes of student enrollment; and (c) baccalaureate universities with different levels of sponsored revenue?

The hypotheses were tested that: (a) there is a significant difference between public and private universities in the levels of support for sponsored programs and to SPA; (b) there is a significant difference in the levels of support for sponsored programs and to SPA between baccalaureate universities with different size of student enrollment; (c) support for sponsored programs and to SPA is greater at the universities with higher levels of sponsored revenue.

**Definition of Terms**

*Baccalaureate universities* were institutions classified as Baccalaureate Colleges by 2005 Carnegie Classification (Basic). In October, 2009, the Carnegie Classification listed a total of 645 colleges as Baccalaureate Colleges—Arts & Sciences (Bac/A&S) and Baccalaureate Colleges—Diverse Fields (Bac/Diverse). Among those, 286 (6.5% of all Baccalaureate Colleges) were classified as Bac/A&S, and 359 (8.2%) as Bac/Diverse. According to the classification’s technical details,

Institutions were included in these categories if bachelor’s degrees accounted for at least 10 percent of all undergraduate degrees and they awarded fewer than 50 master’s degrees (2003-04 degree conferrals). In addition, these categories were limited to institutions that were not identified as Tribal Colleges or as Special Focus Institutions. (The Carnegie Foundation, 2005).

*Chief executives* of a university were defined as presidents, provosts, chancellors, vice presidents, vice provosts, and vice chancellors.

*Research administrators, or sponsored programs administrators* (SPAs), are professionals who work with sponsored programs. They are “those individuals who do not function as investigators [emphasis in original], but who render service to faculty and senior scientists by providing administrative and development assistance, technical assistance, clerical support, editorial assistance, and fiscal management.” (Hensley, 1986, p. 290).

*Sponsored programs* are activities of the university that are financed by external funds, other than by endowments, gifts, and scholarships and have purposes consistent with the purposes authorized for support by awarding agency. Sponsored programs at colleges and universities support research, training, public service, development of institutional infrastructure, and student enrichment.
Assumptions and Limitations

The study utilized a researcher-developed survey instrument Sponsored Programs Administrators Survey (SPAsS) that was distributed electronically to SPAs at baccalaureate universities. Results of the study represent the perceptions of research administrators at those institutions. The data are therefore subjective in nature. Another study that would survey different groups at the same universities and analyze institutional documentation may be necessary to construct a more objective picture and may add to the strength of this study.

Support from chief university executives that results in budgetary, technical, and human resources (financial support) provided to the sponsored programs offices was outside of the scope of this study. The study focused on support for sponsored programs and to SPA affecting research administrators’ power, authority, and influence in their organizations, and that which does not provide financial resources (nonfinancial support).

The assumption was that respondents answered the questions honestly. Because no identifying information was collected, the likelihood of honest responses was high. Grouping or comparing responses from the same institution was not possible without identifying information. The attitudes and feelings of respondents towards their institution may have influenced their answers to all questions, including those questions that gather factual information.

The study was delimited to research administrators who were or had been members of National Council of University Research Administrators (NCURA). The sample consisted of all individuals from baccalaureate institutions that were members of NCURA as of June 2010 plus additional individual NCURA members as of October 2009, and April 2008. According to NCURA membership lists from April 2008, October 2009, and June 2010, members from baccalaureate colleges comprise just over 2% of total NCURA membership. Traditionally, a significant number of universities that employ research administrators ensure membership of these administrators in this professional association. However, with the deterioration of financial positions of many universities in the recent economic crisis, it is unclear whether membership in NCURA remained as widespread and representative of baccalaureate institutions as it had been previously. Because NCURA’s purpose is to advance the field and the profession of research administration (National Council of University Research Administrators, 2010), the assumption was that all members of NCURA had developed an identity as research administrators. Another assumption was that all respondents worked in the area of sponsored programs and therefore had knowledge of the information needed to complete SPAsS.

To strengthen internal validity, SPAsS was pilot tested on a small group of respondents prior to administration to study participants. Changes were made based on the feedback from the participants of the pilot.
Theoretical Framework for Studying University Administrators

The theory of administration began to formally establish itself after 1956, when Litchfield published his “Notes on a General Theory of Administration” in the first issue of Administrative Science Quarterly, a peer-reviewed journal of theoretical and empirical work in organization studies. In these notes, Litchfield defined administration as “the performance of the administrative process by an individual or a group in the context of an enterprise functioning in its environment” (p. 27). According to Litchfield, the theory of administration was possible because the administrative process is universal and the knowledge therefore can be transferred between the fields.

A number of studies since 1956 focused on administration of universities. Those studies primarily addressed cost effectiveness. (Gornitzka & Larsen, 2004, p. 455). The main reason for this, “beyond the simple desire for reliable knowledge about universities as organizations” (Gross, 1968, p. 526), was the concern about the distribution of resources on different activities and functions of university. The studies focused on university administration expenditures (Pickford, 1974), the cost benefit ratios in the management of sponsored programs (Inglis, 1984), or the change in administrative expenditure patterns of the universities aspiring to become research-intensive institutions. (Morphew & Baker, 2004).

Attention to the cost effectiveness of administrative personnel is understandable. Apart from the fact that the need for resources is constantly growing, and the availability of resources may be shrinking, it has also been shown that administrative expenditures may have a significant negative relationship with student engagement. (Ryan, 2005, p. 245). In addition, the negative correlation was observed for the expenditures for institutional administration, rather than for those in the instructional, academic support, and student service categories (p. 245). The importance of cost effectiveness of university administration notwithstanding, it is unwise to conduct the discussion on the role and the contribution of administrative personnel to the university life only from the perspective of controlling non-academic costs. (Gornitzka & Larsen, 2004, p. 470). The studies that address distribution of power and influence, cultural change, and creating shared meaning are critical for understanding the role of university administration.

The first publications that had the potential to inform this research date from the 1950s, however, between the 1970s and 2000s, few authors explored institutional structure and culture in connection with a wider environment. Lounsbury and Ventresca (2003) explained the decline in interest by the following factors: (a) the creation of the Organizational and Management Theory division of the Academy of Management in 1971, which signified the establishment of organizational theory, and (b) incorporation of sociology and psychology researchers into the leading management schools by the 1970s (p. 462). As a result of those developments, organizational theory emerged as a management subfield, while organizational scholars sought to “professionalize their work around issues of management and organizational effectiveness.” (Lounsbury & Ventresca, 2002, as cited in Lounsbury & Ventresca, 2003, p. 461). Most studies from that period appear to be “increasingly
instrumental, driven by functional imperatives, and animated by the prominence of narrow exchange approaches to behavior.” (Lounsbury & Ventresca, 2003, p. 463). This explains the inclusion of the older works in references for this article.

Social structure and social process are more fruitfully conceptualized using the sociology of culture, politics, and institutional analysis together. Studies that emerged at the intersection of these fields are more pertinent to the analysis of the changes in the organizational culture. (Lounsbury & Ventresca, 2003, p. 464). For example, the four-frame model developed by Bolman and Deal (2003) allowed reconceptualizing or reframing an organization for an all-inclusive study. This model “can help leaders make sense of the organizations.” (Lunenberg & Ornstein, 2004) by using structural, human resources, political, and symbolic perspectives or frames. Utilization of all the four frames as they relate to research administration would have made the inquiry very broad and unfocused. The present study used the political frame in examining support to sponsored programs administrators.

In this context, organizational culture is seen through the lens of interaction and negotiation, as a “negotiated order” (Hallett, 2003, p. 130) that develops through interactions between the participants. The culture of an organization is viewed as a negotiation because it is constantly reenacted by the individuals, and “the meanings associated with the culture are dependent on the agreement” (p. 133) between the participants. Members of the organization who have symbolic power – “the power to define the situation in which interactions take place” (p. 130) – exercise the most significant influence on the culture of the organization, shaping organizational changes by the actions and communications that involve symbolic power. Power relations underline the efforts to reconcile diverse interests in order to build a moral community at the institution (Clarke & Butcher, 2009). The study of chief executives’ support for sponsored programs and to sponsored programs administration at baccalaureate universities that is described in this manuscript embraced that approach to the organizational culture and organizational change.

The paradigm of formal organizational structure does not fully explain the “anomalous forms” (Ouchi and Wilkins, 1985, p. 468) of hospitals and universities. Universities are cultural institutions, as well as formal organizations (Beyer & Lodahl, 1976, p. 104). As cultural institutions, they are complex organizations with little formalized structure and weak control mechanisms, which results in fragmentation inside the universities (Sporn, 1996, p. 43). In their study of United States and British universities, Beyer and Lodahl (1976) described the structure of universities as consisting of academic and administrative components combined into a bureaucracy where faculty is “enucleated” (p. 108) from administration due to the minimal hierarchy between the two.

The decentralized structure of universities with loosely coupled autonomous subunits is an important feature of universities as organizations. (Buckland, 2008). At U.S. universities, academic departments retain substantial control over academic decision making while sharing influence with central administration. (Bray, 2008). The decentralized structure
ensures that change can begin at any hierarchical level because it is possible to exercise influence at any level. (Beyer & Lodahl, 1976, p. 127). At the same time, the environment of shared governance results in discourse shaped by frequently shifting power relationships. Those conditions almost guarantee that changes initiated by administrators are met with resistance (Allan, Gordon, & Iverson, 2004, p. 59), regardless of whether the administrators adhere to authoritative or collaborative leadership approach.

An examination of distribution of power and influence, cultural change, and creating shared meaning in the context of chief executives’ support for research administration is centered on viewing universities as complex social institutions defined by their knowledge-processing functions. (Gumport & Snydman, 2002). The knowledge-processing functions of the university consist of defining “knowledge worth knowing” (p. 376) and using these definitions to establish categories of expertise. The classifications so created and subjects deemed worthy of studying impact shared understanding of the mission of the university, its organizational structure, and the allocation of internal budgetary and other resources to the departments representing fields of study (p. 376).

Subunits at universities “acquire power in the organization to the extent that they provide critical resources, including knowledge . . . ; in return, other participants in the organization will respond to the demands of a subunit as some function of its power.” (Salancik & Pfeffer, 1974, p. 453). Universities can therefore be studied using a political model. In a political model, the concepts of power and influence are key to understanding the dynamics of an organization. Having the right amount of power is important for the effectiveness of a department and for ensuring its usefulness to the organization. Etzioni (1964, as cited by Warren, 1968, p. 952) defined physical, material, and symbolic categories as bases of organizational power. The symbolic category is of a particular interest in this context.

Galang and Ferris (1997) demonstrated that symbolic actions are stronger predictions of the power of a department than the department’s performance and top management attitudes (p. 1403). The authors proposed that the power of human resources (HR) departments in organizations depends on their ability to effectively manage perceptions and impressions and “structure reality through symbolic actions” (p. 1404). According to Galang and Ferris, actions are symbolic when they enable a department to acquire strategic power in the organization, regardless of whether or not the situational context is conducive to seeing HR in an advantageous light.

Feldman (1986) described symbolic actions as actions of managers that are connected with meaning, values and sentiments of employees and are used “to rationalize and legitimize corporate policies and directives” (p. 213). Feldman defined organizational culture as corporate policies, standards, principles, and values that are “symbolically maintained” (p. 212) and are used to regulate behavior in the organization. Vaughn (1995) suggested that symbolic actions and the discourse to develop shared meaning must be examined to understand the role of leadership in an organization. According to Vaughn, shared meaning provides “explanations, rationalizations, and legitimation for organizational activities” (p. 242).
Therefore, management must use symbolic actions to develop a system of shared meaning to increase commitment and achievement in the organization, to create unity and cohesion to mobilize productive behavior, and to align ideals and beliefs of individual employees with the organization’s goals.

The role of cultivating shared meanings is especially emphasized in studies of universities as learning organizations. Barker and Camarata (1998) defined learning organizations as “characterized by knowledgeable, interdependent, human communication networks (emphasis in original) necessary to achieve the organization’s fundamental mission, goals, and objectives” (pp. 446 - 447). As described by Froman (1999), the main difficulty for a university in becoming a learning organization is presented by universities’ culture that is not conducive to the development of a shared vision (p. 187). University culture emphasizes individual patterns of behavior by maintaining boundaries between academic disciplines, allowing professors to construct and design their courses, and granting promotion and tenure based on individual faculty achievement in teaching and research.

Boyce (2003) observed that colleges and universities easily make small environmental adjustments due to their distributed decision making and ambiguity of goals. Kezar (2009) pointed out that too many simultaneous and competing change initiatives resulting from involvement of too many stakeholders impedes institutional action at universities. For these reasons it is difficult to institute major changes. After reviewing research in higher education, sociology, and organizational studies, Boyce concluded that in an organization “where objectives are divergent, power is diffuse, and leadership roles are shared” (p. 121), strategic change can be achieved by establishing conditions for continued organizational learning.

Theories of organizational culture suggest that institutions of higher education can become learning organizations by fostering the development of shared goals. Tierney (1988) pointed out that the complex and fragmented organizational cultures of colleges and universities can be described as “particular webs of significance within an organizational setting” (p. 4). Tierney stressed that organizational culture plays an important role in improving the university management and performance, and that understanding shared assumptions is critical to the ability to address challenges facing higher education. Thornton and Jaeger (2008) further developed the connection between addressing the challenges of higher education and the culture of organization. He suggested that the framework connecting ideology, culture, and action is useful for higher education’s recognition of its civic responsibility (p. 175). Institutional culture and values provide insight to the university into its own strengths and assist in providing better services to constituencies.

The Uncomfortable Position of Research Administrators

The core function of sponsored programs offices at colleges and universities is to provide services related to securing and administering off-campus funding by faculty and staff. Sponsored programs offices are service-oriented like most university administration
Administrators of sponsored programs work in the atmosphere of increasing oversight of higher education by various external agencies. (Lane, 2007). SPAs serve faculty and staff by identifying funding sources, assisting in finalizing proposals, reviewing budget accuracy, negotiating agreements, obtaining and interpreting guidelines, promoting compliance of grant applications and contracts with sponsor and university policies and requirements, and, in many undergraduate schools, by ensuring financial accountability for external funding.

According to the American Association of University Professors (AAUP), “every administrative office will strive to meet his or her charge and to attain the goals of the institution.” (AAUP, 2006, p. 136). Challenges integral to the profession of research administrator add complexity to “meeting the charge” of a sponsored programs office.

The work of research administrators involves a variety of stakeholders, including the university management and department administrators, faculty and staff that serve as project directors, funding agencies, organizational donors, local government, community organizations, and schools. SPAs that specialize in facilitating transfer of university research discoveries and inventions include business organizations and corporations among their clients. (Harman & Stone, 2006). SPAs must balance the interests of these diverse groups with overall university interests. By nature of its responsibilities the profession is concerned with the public good, protection of human research participants, humane treatment of animals, safety, and environmental health. To add to the complexity, SPAs’ position as middle managers requires being simultaneously effective leaders and effective followers. (Streharsky, 1998, p. 74). Streharsky (1998), in his commentary paper, argued that the role of the follower brings with it limited internal autonomy, whereas the role of a leader adds limited external autonomy to the profession of research administrator.

Serving the faculty and protecting the university interests may become difficult at times. In a university setting, faculty members have a great deal of personal autonomy to conduct research or other projects “around faculty specializations of interest” (Plater, 1995, p. 4), which may or may not be in congruence with the university mission. Moreover, faculty can engage in activities that are mission-driven but not reflective of the university’s identity. (Velcoff & Ferrari, 2006). Additional tensions arise when SPAs finalize budgets for externally funded projects. Faculty often view various costs required by the university as unnecessary burdens on their budgets. In their view, these costs decrease the amount of already limited funding without providing direct benefit to the project. The most common examples of such required costs are fringe benefits associated with personnel charges and institutional overhead, also known as Facility and Administration costs (F&A).

Addressing the immediate needs of project directors and the university, and enforcement of sponsor requirements at the same time, can create difficulties for SPAs. At a small nonresearch university the probability of a program audit that may result in adverse findings often seems remote, and the risks seem to be outweighed by the more immediate gain to the program or to the university. Atkinson and Gilleland (2007) argued that the normative structure of research administration is continuously threatened by “political power,
which is inhabited by prestigious faculty with tenure, top-down authority misalignment, and
the power for some institutional members to circumvent the system” (p. 216). Enforcing
compliance in such circumstances tests SPAs’ personal and professional integrity.

In the study of ethical frameworks in the social language of university research
administrators, Atkinson and Gilleland (2007) analyzed qualitative and textual data to
explicate social structures, beliefs, and attitudes of 5,281 research administrators from
higher educational institutions, regardless of Carnegie classification. In the study, research
administrators described this profession in terms of power struggles, differences of opinion
about right and wrong, and imbalances of power between the SPAs and the researchers. The
authors observed that “a political world emerged where research administrators acquiesced
or consented to the power of the faculty” (p. 201). Highlighting the tensions between
faculty and research administration, Atkinson and Gilleland stressed that the university
must support its research administration to maintain the integrity of the research and of the
institution. For research administrators to stand up to faculty “without fear of retribution”
and not be “unseated by political influence” (p. 217), they must have both formal and
informal authority entrusted to them by the senior university officers.

Given the complexity of the environment where sponsored programs professionals
carry out their functions, it is essential that university chief officers consistently demonstrate
strong support for the sponsored programs office. Formal and informal engagement of the
university leadership is crucial for performance of all activities at the institution. (Ball, 2007).
Poor or insufficient support from the university chief officers reduces the effectiveness of
research and sponsored programs departments. The effectiveness of research administrators
can also be jeopardized if the university leadership does not fully understand their role and
the challenges that research administrators face.

In his large study, Gross (1968, p. 526) addressed the question of whether or not
there is a growing gap between values and interests of academic administrators and faculty
members at institutions of higher education. Gross administered a lengthy survey to 8,828
administrators and 6,756 faculty members (10% of all faculty of participating universities) at
68 nondenominational universities in the United States. Analysis of the survey results showed
that administrators “see eye-to-eye with the faculty” (p. 538) and that “the kind of university
one has when the administrators have power is not very much different from what one has
when the faculty have power” (p. 541). Gross concluded that faculty and administration
agree on the existing goals and on what these goals ought to be.

As comforting as this conclusion would seem to be, it was also found in a more
recent study that university administrators experience ambivalence about the value of their
work on a daily basis. Gornitzka and Larsen (2004) collected data from all four Norwegian
universities for the period from 1987 to 1999. The researchers conducted interviews and
examined the national university research personnel register (NIFU). The authors noted that
university research administrators in general are not “in a settled and ‘comfortable’ position”
(p. 469) because their responsibilities and role in their organizations are not clearly defined
and appear to change often. Research administrators participating in the study felt that their functions within the academic community are “undervalued” (p. 465). Gornitzka and Larsen observed that study participants “work under conditions of crosscutting pressures of professional pride, struggle for recognition, humbleness, and loyalty to the organization they have committed themselves to” (p. 465), and that they experience conflicting feelings about their work.

In the United States, the functions and roles of university research administration also continue to change and are continuously redefined. (Atkinson, 2002; Atkinson, Gilleland & Barrett, 2007; Gabriele, 1998; Hansen & Moreland, 2004). Observations and personal experience lend support to the view that research administrators in U.S. universities are also not in a “comfortable” position, similar to their counterparts in Norway.

The “uncomfortable” position of research administrators appears to be nourishing a self-perpetuating cycle of powerlessness, as described by Legge. (1978, as cited in Galang & Ferris, 1997, p. 1411). Legge analyzed the cycle of powerlessness in human resources administrators; the cycle can be found in any service department:

The cycle depicts the inability of the department to address . . . problems effectively as stemming from the lack of power that it has been given, which in turn only reinforces the withholding of power from it. Conversely, a department that is able to manage . . . problems well will be able to acquire power which feeds into its ability to be effective. (Legge, 1978, as cited by Galang & Ferris, 1997, p. 1411).

According to Legge, departments that have difficulty in demonstrating means-ends relationship between their function and organizational outcomes often experience lack of authority. (Legge, 1978, as cited by Galang & Ferris, 1997, p. 1408). From the perspective of human resources administration, organizational outcomes are determined “by a host of factors other than how human resources are managed, or efforts of the department tasked with such function.” (Tsui, 1984, as cited by Galang & Ferris, 1997, p. 1408). Similarly, organizational outcomes towards which research administration contributes are determined by a variety of factors other than the efforts of research administrators. The faculty’s desire to write grant proposals is influenced by the importance of grants and research to tenure and promotion; the success rate of funded versus unfunded proposals depends largely on the quality of submitted proposals; the achievement of sponsored projects goals requires time and commitment from principal investigators, and not just competent research administrators’ support.

The study of research administrators’ ethical framework by Atkinson and Gilleland (2007) found indications of research administrators’ lack of authority “to align wrongdoers with the policies” (p. 208). The analysis of data by the authors suggested a possibility that “support from the top is sometimes hard to come by when the tough decisions need to be made” (p. 208). The authors found that research administrators as a group exhibit “virtue blindness” (p. 216), which is the belief that “they are not likely to do wrong” (p. 217, emphasis in original). Atkinson and Gilleland entertained a possibility that this strong sense of
the virtue of research administrators occasionally dims awareness of not being in compliance with rules. The authors attribute this weakness of the system to deficiencies in the institutional environment, lack of support for the research infrastructure, and power imbalances.

Atkinson, Gilleland and Pearson (2007) reported strong evidence that research administrators represent their institutions well when they carry business and execute transactions on behalf of their universities. The authors concluded that “research administrators would fail in other areas” (p. 115) before they fail to act in the best interests of the projects they administer or their institutions.

If research administrators perceive a lack of authority at baccalaureate universities, it would prevent the enforcement of compliance policies. Even more importantly, it would minimize the contribution of research administration to the fulfillment of their university’s mission and diminish the return on the institutions’ investment into research administration in general.

Compliance, Organizational Culture, Integrity, and Ethics

The core function of SPA is maintaining compliance with federal and state laws, sponsor agency policies and regulations, and the institution’s internal policies. (Atkinson & Gilleland, 2007; Gabriele, 1998; Hansen & Moreland, 2004; Hensley, 1986). Most universities have in place a compliance system that regulates sponsored programs activities. A compliance system is “a set of management controls calculated to identify, correct, and prevent wrongdoing throughout the organization.” (Parker & Nielsen, 2009, p. 4). Compliance systems will only work if they are supported by an organizational culture that values compliance (Flin, 2003; Parker & Nielsen, 2009; Verhezen, 2008).

Some organizations do not have compliance systems in place, or operate compliance systems that satisfy minimal requirements but are ineffective in practice. That occurs if the organization’s management does not recognize compliance as important, or if implementation costs of effective compliance system are higher than perceived risk of noncompliance. (Parker & Nielsen, 2009, pp. 10 - 11). Success and usefulness of compliance efforts in an organization depends not only on formal systems in place, but also on the value that the organization’s leadership ascribes to compliance, as well as on the resources that it devotes to developing efficient compliance mechanisms.

Flin (2003) reached similar conclusions from her study of management influence on safety in industrial organizations. She found that perceptions of managerial actions and their commitment to compliance with safety requirements are the core components of the safety climate and culture in an organization. An improvement in safety culture is only possible when the workforce perceives management as committed to compliance and safety (p. 265). Flin concluded that good safety management requires “demonstration of commitment shown by time allocation and prioritization of safety, especially when managers
are faced with conflicting safety and production goals” (p. 266). Similarly, good compliance management of sponsored programs requires a demonstrated commitment of senior officials of the university, especially when administrators are faced with conflicting priorities of teaching and research, as may be the case at baccalaureate institutions.

Verhezen (2008) explored compliance in organizations in relation to organizational integrity. He suggested that compliance is a product of organizational integrity that is embodied in the culture of the organization (pp. 142 - 143). Organizational integrity is linked with personal integrity and is based on ethical principles that are consciously selected and institutionalized in the organization (pp. 133 - 134). The role of executives then lies in “providing leadership in creating and maintaining an organizational ethos in relation to collective mission, identity, and long-term objectives” (p. 137). Executives must emphasize integrity rather than mere compliance, which will then become embedded in the organizational culture and influence the behavior of the individuals making up the organization.

Curren (2008) explored the concept of integrity in academic administration as a component of professional and institutional ethics. He argued that the concept of integrity captures “the three cardinal virtues of academic administration,” which are: “commitment to the good of the institution; good administrative judgment; and conscientiousness in discharging the duties of the office” (p. 337, emphasis in original). Curren distinguished three kinds of failure of integrity: failure of personal integrity in performing professional duties, abuse of the power of the position, and failure to uphold the integrity of the organization (pp. 343 – 344). The author stressed that institutional integrity is prerequisite to the integrity of administrators (p. 348). By its commitment to the institution’s academic mission, institutional leadership guides its administrators in exercising all three virtues in serving the institution with integrity.

Reybold, Halx, and Jimenez (2008) examined administrative staff perceptions of professional ethics in the student affairs division at a public university in the Southwest. They suggested that professional ethics is comprised of institutional standards, personal values, and societal standards situated in the context of the office environment that is, in turn, situated in the institutional culture (p. 112). The study concluded that in order to create and sustain an ethical environment at a university, its leadership needs to continuously engage in a public dialogue about how ethical standards and ethical values are connected to and interpreted in the institutional context.

A survey of the literature shows that institutional compliance, organizational integrity, and professional ethics of administrators are situated in the context of organizational culture. Chief executives of the organization play the fundamental role in defining the culture of the institution in a way that promotes compliance and integrity based on shared ethos.
The Study Instrument, Data Collection and Measures

To collect data, the study used SPAsS, a researcher-developed survey instrument. The survey was administered electronically using surveymonkey.com. Administration of the survey consisted of the four steps, including a follow-up to ensure a high response rate. The first email was a short advance notice email message to all members of the sample. The second email was the actual survey, sent one week after the advance notice message. The third and fourth email messages consisted of a reminder sent to the study participants four days and eight days after the initial distribution of the survey.

The independent variables of the study were affiliation with public versus private institution, student enrollment, and annual sponsored programs revenue of the university. SPAsS collected this information via the following demographic questions: control of institution (question 2, nominal scale), university enrollment (question 3, ordinal scale), and annual sponsored revenue (question 4, ordinal scale). An additional demographic characteristic collected was the respondents’ positions (question 1, nominal scale). That additional characteristic was useful in describing the participants of the study.

Only minimal demographic information was collected about the respondents because identity as research/sponsored programs administrator, knowledge of the matters pertaining to the scope of this research, and affiliation with a baccalaureate university were the only qualifications necessary for participation in the study. Additional demographic information, such as respondents’ credentials, educational background, experience, or years in current position might have provided deeper insight into the nature of support from the chief executives to SPAs, however it was outside the scope of the present research.

There were two dependent variables: chief executives’ support for sponsored programs (support for SP) and chief executives’ support to sponsored programs administration (support to SPA) at baccalaureate universities. Scores that measure the two dependent variables were the totals of the scores for the groups of questions. Those questions were either 4-point Likert-type, or 5-point Likert-type. Responses measured by 4-point Likert-type scale were recorded by the surveymonkey.com as follows: Strongly Agree: 1; Agree: 2; Disagree: 3; Strongly Disagree: 4. Responses measured on the 5-point Likert-like scale included one additional option: Don’t Know: 5.

Scores for sets of questions were summed to measure the dependent variables resulting in data that is an approximation to an interval scale. Because samples from the universities with different levels of sponsored revenue and those from public versus private universities were too small for a t test, the analysis of variance (ANOVA) has been selected to determine the factors that have significant effect on the dependent variable. In order to qualify for ANOVA, the data was tested for homogeneity of variance using Levene’s test. The degree and the direction of the relationships between the variables were measured by calculating the Pearson correlation. The SPSS Career Starter Program 16.0 for Windows was used to conduct the analysis.
Protection of Participants’ Rights

Responses to the survey were requested via a link to the survey sent via email to the study participants. There was an opt-out link at the end of email messages enabling the individuals to stop receiving those communications. Respondents clicked the link to go directly to the survey. SurveyMonkey.com tools were used to manage the list of email contacts and to send follow up emails. Survey participants were not asked to provide any personal identifying information such as their names or the name of the institutions with which they are affiliated. That protected privacy and confidentiality of responses. Participants’ consent was confirmed by clicking the “I Agree” button at the bottom of the informed consent page. Additionally, respondents were able to exit the survey at any time by closing their browser or clicking away from the survey link.

No compensation, monetary or otherwise, was given to the participants of the study. Respondents may have felt that completing the survey was gratifying because by doing so they have contributed to the body of knowledge of research administration. Limited information is available about research administration at baccalaureate universities. Filling this gap may have been viewed as an incentive by some of the participants.

Response Rates

The initial communication was distributed to 207 participants. Surveys where respondents have answered less than 50% of all questions are listed as break-offs. Surveys where respondents answered 50% or more of all questions but left at least one question unanswered are listed as partially completed. Partially completed surveys were included in the data analysis together with the completed surveys in which respondents answered all questions. Responses from the break-offs were not included in the data analysis.

The minimum response rate (RR1) of 38.6% was calculated by dividing the number of complete surveys (80) by the number of individuals selected for participation (207) (American Association for Public Opinion Research, 2009, p. 36). Response Rate 2 (RR2) was 41%. RR2 counted partially completed surveys as responses (see Table 1).

Although low response rate is a weakness of this study because it carries the potential of nonresponse bias to distort the results, surveys with relatively low response rate are not necessarily low in validity (Visser, Krosnick, Marquette, & Curtin, 1996). Bachetti (2010) asserted that cutting a sample size in half preserves more than half of the value of a study. Given that very little information currently exists about the support of chief executives to SPAs at baccalaureate universities, even a small amount of inconclusive information is important and may contribute to later more expansive studies.

Table 1: Response Rate

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of individuals selected</td>
<td>207</td>
</tr>
<tr>
<td>Number of surveys distributed</td>
<td>199</td>
</tr>
<tr>
<td>Number of surveys completed</td>
<td>80</td>
</tr>
<tr>
<td>Number of partial responses</td>
<td>4</td>
</tr>
<tr>
<td>Response Rate</td>
<td>41%</td>
</tr>
</tbody>
</table>

Note. Responses in which more than 50% of the questions were answered but at least one was not counted as partial responses and were included in the data analyses. The response rate includes partial responses.
Demographic Characteristics of the Survey Respondents

The study data consisted of responses from 84 participants. The responses included 80 fully completed surveys and four partially completed ones. Fifty-two respondents (62%) were affiliated with private universities, and 32 respondents (38%) were affiliated with public universities. The majority of the respondents held positions that can be most accurately described either as head of a sponsored programs office ($n = 37, 44\%$) or as a sponsored programs administrator ($n = 30, 36\%$). Some individuals chose to answer Other to the question about their position and filled in their exact position titles. Those responses were reviewed and reassigned to fit in the available categories.

Over half of the survey respondents ($n = 47, 56\%$) were affiliated with institutions that as of the fall of 2009 enrolled between two and five thousand students. Only 13\% ($n = 11$) of the respondents reported student enrollment exceeding 5,000 students. Most respondents ($n = 66, 79\%$) were from the universities that received less than 10 million dollars in sponsored funding for grants and contracts per year.

Results for Research Question 1

The study tested the null hypothesis that there is no relationship between the level of support provided for SP and the level of support provided to SPA as measured by SPAsS. The alternative hypothesis was that the relationship is significant. It was further hypothesized that there is a higher level of support to SPA at universities in which chief executives demonstrate higher level of support for SP. The Pearson correlation revealed that support for SP and support to SPA were significantly related, $r = .763$, $n = 84$, $p < .01$, one tail. Therefore the null hypothesis was rejected and the alternative hypothesis was upheld.

Significant correlations were also found between chief executives’ support for SP and each of the subsets of the variable of the support to SPA as shown in Table 2. These subsets were reinforcement of SPAs’ role (RNF), authority of SPAs (ATH), and perception of whether
or not SPA plays an important role at the institution (PRC). The correlations suggest that reinforcement of SPA’s role and delegation of authority by the chief executive are likely to occur at institutions where chief executives support sponsored programs. At those universities SPAs were also more likely to believe that they play an important role in the organization.

Table 2: Correlations with Chief Executives’ Support for Sponsored Programs

<table>
<thead>
<tr>
<th>Subset</th>
<th>r</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support for sponsored programs administration</td>
<td>+.763</td>
<td>84</td>
</tr>
<tr>
<td>Reinforcement of SPAs’ role (RNF)</td>
<td>+.693</td>
<td>84</td>
</tr>
<tr>
<td>Authority of SPAs (ATH)</td>
<td>+.666</td>
<td>84</td>
</tr>
<tr>
<td>Self-perception of role as important (PRC)</td>
<td>+.615</td>
<td>80</td>
</tr>
</tbody>
</table>

Note. For all subsets p < .01, one tail.

Additionally, data suggested moderate positive correlations between the support for SP and each of the components of the support to SPA, with the exception of the signature authority for both proposals and for grants and contracts. The correlations with the signature authority were not significant. Positive correlations show that chief executives demonstrate the following behaviors supportive of SPAs: endorsement of internal policies for sponsored funding; channeling review of all proposals through the sponsored programs office; delegating to SPA the authority to enforce internal policies and agency regulations; referring all matters related to SPA to the sponsored programs office; communicating regularly with SPA; and involving the office of sponsored programs in drafting strategic plans. The coefficients for all significant correlations are shown in Table 3.

The analysis of correlations was also conducted between the respondents’ perception of SPA’s importance (PRC) and each of the components of support for both SP and SPA, as well as with each of the independent variables. No significant correlations were found between PRC and the control of institution, size of student enrollment, or annual sponsored revenue. Significant positive correlations were found between PRC and most of the components of the variables of support as shown in Table 3. Significant correlations between PRC and support for SP suggest that particular behaviors of chief executives are likely to be present when SPA’s perceive their role at the university as important. Respondents that stated that SPA plays an important role at their university were likely to report that information related to sponsored programs was published in campus publications; that chief executives promoted a culture of compliance, encouraged faculty to seek external funding, and acknowledged the procurement of sponsored funding; that the strategic plan had been drafted with input from SPA and included goals and objectives related to sponsored programs; that all proposals were reviewed by SPA before submission to the funding agencies, and that SPA had sufficient enforcement authority and handled all matters related to sponsored programs.
Absence of significant correlations between the signature authority for either proposals or awards and the support given to SPA was somewhat unexpected. Signature authority is the only component of the variable of support to SPA that did not demonstrate a statistically significant correlation with the support for SP. Correlations of the signature authority and perception of importance of SPA’s role were not significant either. Because the findings for both parts of the signature authority component (signature authority for proposals, and signature authority for grant and contract agreements) consistently showed no significant relationships, it appears that holding the signature authority is not an indicator of presence or absence of support of the university chief executives for sponsored programs. Additionally, holding signature authority for proposals and awards appears unrelated to whether or not SPAs perceive their role at the university as important.

**Table 3: Correlations of Components of Support with Support for SP and PRC**

<table>
<thead>
<tr>
<th>Component of support</th>
<th>Support for SP</th>
<th>PRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPA has signature authority</td>
<td>not significant</td>
<td>not significant</td>
</tr>
<tr>
<td>SP considered in decision making</td>
<td>N/A</td>
<td>not significant</td>
</tr>
<tr>
<td>Internal policies are endorsed by chief executive</td>
<td>+.312*</td>
<td>not significant</td>
</tr>
<tr>
<td>SP info is highlighted in campus publications</td>
<td>N/A</td>
<td>+.321</td>
</tr>
<tr>
<td>Faculty is encouraged to seek funding</td>
<td>N/A</td>
<td>+.566</td>
</tr>
<tr>
<td>Sponsored funding is acknowledged</td>
<td>N/A</td>
<td>+.566</td>
</tr>
<tr>
<td>Chief executives promote compliance</td>
<td>N/A</td>
<td>+.489</td>
</tr>
<tr>
<td>SPA reviews all proposals</td>
<td>+.388</td>
<td>+.356</td>
</tr>
<tr>
<td>SPA has sufficient authority</td>
<td>+.422</td>
<td>+.422</td>
</tr>
<tr>
<td>Relevant matters are referred to SPA</td>
<td>+.529</td>
<td>+.526</td>
</tr>
<tr>
<td>Chief executives communicate with SPA</td>
<td>+.569</td>
<td>+.445</td>
</tr>
<tr>
<td>Strategic plan includes SP objectives</td>
<td>N/A</td>
<td>+.445</td>
</tr>
<tr>
<td>SPA was involved in drafting strategic plan</td>
<td>+.532</td>
<td>+.445</td>
</tr>
</tbody>
</table>

Note. Categories marked N/A were those included in support for sponsored programs. For all subsets p < .01, one tail; n = 80 except where marked with * n = 83.

Results for Research Questions 2 – 4

Levene’s test showed that the homogeneity of variance assumption was not violated for the samples from different categories of institutions. The analysis of variance revealed no significant difference in the level of support for SP and the level of support to SPA between public and private baccalaureate universities. Likewise, no significant difference was found between baccalaureate universities with different sizes of student enrollment. Additionally, no significant difference was shown between the universities with different levels of sponsored revenue. The means and the standard deviations are presented in Table 4.
The theoretical framework of the study placed support from the chief executives for SP and to SPA in the contexts of environment, university mission, institutional system, and leadership. While control of the institution is a factor of the environment and undeniably contributes to the culture of the institution, it does not predict the presence or the absence of support from chief executives. Similarly, the size of student enrollment of baccalaureate universities does not appear to impact significantly the symbolic and power relationships that define environments supportive of SPA.

It was expected that chief executives at universities with higher levels of sponsored revenue would be more likely to support sponsored programs and SPA. However, results show that the amount of sponsored revenue is not a predictor of the presence or absence of support from chief executives. Other factors, such as behaviors of chief executives reported by the participants via SPAsS, have stronger influence on the level of support for SP and to SPA than the amount of sponsored revenue.

The study results illustrate that at baccalaureate institutions the control of the university, its size, and the amount of sponsored revenue do not preclude its chief executives from being supportive of either sponsored programs or SPA. Failure to reject the null hypotheses for the Research Questions 2 - 4 is therefore a positive finding, however further research is needed into the institutional culture of baccalaureate universities that are supportive of SPA.

### Conclusion

SPAs need support from chief executives to facilitate effective acquisition of external funding as well as to ensure compliance with the institution’s internal policies and with the regulations of sponsoring agency. The process of creating shared meaning within the organization provides the framework for chief executives’ behaviors which are supportive of

<table>
<thead>
<tr>
<th>Institutional Category</th>
<th>Support for SP</th>
<th>Support for SPA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Public</td>
<td>10.56</td>
<td>3.212</td>
</tr>
<tr>
<td>Private</td>
<td>10.15</td>
<td>3.472</td>
</tr>
<tr>
<td>&lt; 2,000 students</td>
<td>10.12</td>
<td>3.809</td>
</tr>
<tr>
<td>2,000 -- 5,000</td>
<td>10.45</td>
<td>3.063</td>
</tr>
<tr>
<td>5,001 --10,000</td>
<td>10.17</td>
<td>2.317</td>
</tr>
<tr>
<td>&gt; 10,000 students</td>
<td>10.20</td>
<td>5.357</td>
</tr>
<tr>
<td>&lt; $10 million</td>
<td>10.42</td>
<td>3.530</td>
</tr>
<tr>
<td>$10 mil; &lt;$25 mil</td>
<td>9.54</td>
<td>2.989</td>
</tr>
<tr>
<td>$25 mil; &lt;$75 mil</td>
<td>11.50</td>
<td>2.121</td>
</tr>
<tr>
<td>Don’t know</td>
<td>10.33</td>
<td>1.528</td>
</tr>
</tbody>
</table>

Table 4: Institutional Category and Support
SPA. A positive relationship between chief executives’ support for SP and their support to SPA indicates that chief executives that are supportive of sponsored programs at their universities are more likely to demonstrate those behaviors, extending their support to offices that administer grants and contracts as part of strategies to successfully acquire external funds.

SPA is an administrative unit that cannot easily demonstrate a means-ends relationship between its functions and organizational outcomes. For this reason SPA often experiences lack of power and authority, hampering the effectiveness of the department. The study results indicate that reinforcement of SPA’s role and delegation of authority by the chief executives is likely to occur at institutions where chief executives support sponsored programs. At those universities SPAs are also more likely to believe that they play an important role in the organization.

Symbolic actions enable the department to acquire strategic power. Actions and communications of chief executives that have symbolic meaning as well as practical implications include endorsement of internal policies for sponsored funding; channeling review of all proposals through the sponsored programs office; referring all matters related to SPA to the sponsored programs office; and involving the office of sponsored programs in drafting strategic plans. The study results show that those behaviors supportive of SPAs are more likely when chief executives support sponsored programs.

Along with power and influence, creating a shared meaning is one of the underlying concepts of the conceptual framework of the study. Chief executives play a fundamental role in defining institutional culture based on shared meaning. Promoting a culture of compliance, encouraging faculty to seek external funding, and acknowledging the procurement of grants are symbolic actions that are used to develop the shared meaning about the role of sponsored funding in the university. Regular communication between SPA and chief executives, as well as participation of SPA in the drafting of the strategic plans, are useful strategies for developing shared meaning in the organization.

In the study, the control of institution, the size of student enrollment, and the annual sponsored revenue consistently appeared unrelated to the support for sponsored programs, as well as to the support to SPA. The absence of significant correlation remained also for the respondents’ perception of importance of SPA’s role. These results show that an institution being public or private, the number of enrolled students, and the level of funding for grants and contracts do not constrain universities in providing nonfinancial support for sponsored programs and to SPA.

It is reassuring that the support of chief executives does not necessarily require additional financial outlays. Chief executives of baccalaureate universities wishing to foster meaningful involvement of research administrators need to consider the supportive behaviors identified in this study as part of strategies to achieve value added contributions from sponsored programs.
Recommendations for Further Study

The present study does not allow claims about cause and effect relationships due to its cross-sectional nature. In order to confirm these types of relationships, a longitudinal study measuring participant response at different points in time, together with a planned intervention, would be necessary. In a longitudinal study, changes in SPA's perception of support from chief executives would be measured over time as the particular supportive behaviors identified in the present study are implemented. Self reports by SPA of the support given by chief executives to sponsored programs would need to be complemented by reports from other members of the university community, including chief executives themselves, and by the analysis of institutional documentation. The current study focused on non-relationships between the groups rather than best practices and successful implementation. This was due to the fact that scope of the study was limited to gathering initial information about the presence or absence of nonfinancial support to SPAs at baccalaureate universities. Results from further studies would allow for identification and replication of successful experiences at universities that seek to increase involvement of SPA.

Due to the exploratory nature of the present study and lack of existing research about administration of sponsored programs at baccalaureate universities, some SPAsS questions were less concrete then they might otherwise have been. For example, the concepts culture of compliance and sufficient authority need closer examination. A future qualitative study would need to explore the meaning that SPAs attach to those concepts, which would expand understanding of the challenges facing nonresearch institutions in managing external funding.

Additional avenues for further research include studies that examine the support for sponsored programs and to SPA at other than baccalaureate colleges. Of particular interest are primarily undergraduate universities (PUIs,) which are defined in terms of the nature of the institution, not on the basis of highest degree offered. Included in undergraduate institutions would be two- and four-year colleges, masters-level institutions, and smaller doctoral institutions that have undergraduate enrollment exceeding graduate enrollment and award an average of no more than 10 doctoral degrees each year (National Science Foundation, 1994). The population of PUIs at the United States is larger than the population of baccalaureate universities, which would allow for a larger number of study participants, leading to more rigorous and generalizeable results.

Finally, a study of support at research intensive universities would provide additional insights into institutional practices and behaviors of chief executives who are supportive of research administration. Some practices may be appropriate for nonresearch universities as they work to utilize their administrations of sponsored programs to the fullest possible extent.
References


An IRB Transformation: Increasing Quality and Efficiency Using Existing Resources

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Authors’ Note

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Abstract

In an effort to increase review-quality and efficiency, research administration at Wake Forest School of Medicine initiated a change in the operational structure of the Institutional Review Board (IRB) via a reconfiguring of the boards and rescheduling of the convened meetings. The number of IRB Panels was doubled and each panel/board began meeting on alternating weeks, rather than once per month as they had previously done. The turn-around time for full board approvals was reduced by over 50% and the quality of review was increased due to the smaller agendas for each meeting, allowing all members the opportunity to more carefully review each submission. More time is now spent discussing each submission item than was possible in the past, yet meetings are much shorter than before, due to the smaller agendas. In addition to fostering higher quality human subject protection, both investigator and board member satisfaction has increased because of the change in the operational structure of the IRB. No additional funds or staff members were needed to carry out this successful change. IRB management at other institutions can replicate this process easily and at no significant cost.

Keywords: human subjects protection, IRB review, IRB ethics, IRB performance, IRB member satisfaction

Introduction

A debate is currently underway on whether local IRB review is better than external IRB review. Much of the debate surrounds the fact external IRBs have the advantage of quicker turnaround times, plus funds devoted solely to customer service. Many university IRBs have found it difficult to meet this challenge. (Whitney et al., 2008). The following inquiry examines how one IRB adopted external IRB practices and made themselves competitive with their external colleagues, settling some of the debate. By doing this, they were able to maintain high quality local review, while increasing efficiency and levels of service.

The concerns over IRB efficiency across the country have prompted a series of articles and opinion papers on the potential for a redesign of the IRB review system, utilizing a single IRB for all multi-site research. (Wechsler, 2007). Debates over whether a central IRB model is practical and whether the use of for-profit IRBs would decrease the quality of review due to the financial stake those entities have in the volume of reviews have been carried out in the literature. (Lemmens & Freedman, 2000). During the summer of 2011, an Advanced Notice of Proposed Rule Making (ANPRM) was released by the Office for Human Research Protections (OHRP) which included a call for input on how a central IRB model
for multisite research might be designed in order to reduce the bottlenecks caused by lengthy IRB reviews at each research site. (Federal Register, 2011).

The national discussion on whether local or central Institutional Review Boards (IRB’s) better serve to protect human research participants has raised questions as to whether the use of central boards to the exclusion of any local review would eliminate the consideration of local context and prevent institutions from evaluating the ability of their research program to safely conduct the study. (Wechsler, 2007). In addition, a long standing concern about the quality of review conducted by for-profit IRBs has made some in academic medicine skeptical of reliance of these entities for oversight of clinical trials. (Lemmens & Freedman, 2000).

Improving IRB efficiency and review quality has been a constant goal for the WFSM IRB, but in 2011 there were institutional priority shifts, and changes in leadership that focused the attention of research support leadership on finding ways to overhaul the support mechanisms immediately so that clinical research capacity at the institution could be increased without the need to hire new staff members or increasing budgets. It was also important that the quality of review and service to investigators remain high.

**The Impetus for Change**

In July 2011 Wake Forest School of Medicine (WFSM) welcomed a new Dean. Following the Dean’s arrival, the priorities of the research program were reassessed in the light of a recently developed strategic plan for the academic medical center. One of the new priorities set by upper administration was the growth of the clinical trials research program. To make this possible, the Dean called on research administration to find ways of increasing capacity by decreasing turn-around time.

Turn-around time in July 2011 for initial human research submissions requiring full board review by the Wake Forest School of Medicine IRB was averaging approximately 45 days. This was comparable with the national average of 46 days cited by the Association for the Accreditation of Human Research Protection Programs (AAHRPP) as the average approval time of accredited IRBs who completed their latest performance metrics survey (AAHRPP, 2011). Most investigators were not dissatisfied with the review times at WFSM, but the Dean previously served in an Academic Medical Center that utilized a central IRB for industry sponsored clinical trials in order to achieve a top level of efficiency. WFSM IRB leaders knew that in order to meet the Dean’s expectations, efficiency needed to meet commercial IRB levels without any reduction in the quality and thoroughness of protocol review. To meet this goal an examination of several commercial IRBs revealed that a common practice among for-profit boards was the use of a large number of panels and the conduct of frequent meetings. This approach allows for an even distribution of work, and a timely, thorough review.
Creating a New Review Model

The Wake Forest School of Medicine IRB operational model had traditionally consisted of four Boards with each one meeting once per month. Agendas for each meeting averaged 16 to 25 items for review. Boards were made up of about 18 regular members, which required a quorum of 10 people in order for business to be conducted. This was not an atypical model for an academic medical center. Inquiries into how similar organizations to ours operated the IRB review system revealed that many academic medical centers had three or four Boards that each met once per month. Problems with the traditional model included:

1. Tabled studies had at least a one-month wait for reconsideration, unless a special meeting was held;

2. Quorum was sometimes difficult to obtain or maintain during meetings especially since meetings required an entire afternoon and patient visits or emergencies often put clinical members behind for arrival or in need of early departure;

3. Agendas were so large that the primary reviewer system was relied upon more than we wished it to be (i.e. it was difficult for all members to personally review each submission to be discussed at the meeting);

4. Minutes from meetings were long, arduous documents to create and their creation was sometimes put off until just before the next meeting (which lessened the level of detail within the documents); and

5. The number of submissions on each agenda meant that memoranda to study teams explaining the results of the meeting were often not sent until the following day or the day after that given the complex compilation of notes that had to be put together for each submission.

After assessing what would be needed in order to gain the kind of efficiency necessary to be on par with commercial IRBs, eight boards was the number we thought represented the ideal. With eight boards that each met twice monthly we could solve several problems that arose from the traditional model without having to hire additional staff or increase the budget.

1. Tabled studies would be handled twice as fast with waits of only two weeks;

2. Meetings would not take an entire afternoon because with eight boards meeting twice per month agendas would be light and meetings would therefore be approximately one hour, maximum. So getting and keeping quorum would not be a problem;

3. With light agendas each Board member could more easily review every submission (not just ones to which they were assigned), thus the quality of reviews and discussion would increase;

4. The ease with which Protocol Analysts could create memoranda to study teams and minutes of meetings would increase thereby ensuring a more prompt and efficient outcome; and
5. Memoranda and minutes would be short enough that they could be completed on the same day as the meeting.

In addition to the regular members of the eight boards, a robust list of alternate member was put in place to help reduce the burden and workload of the regular members and to ensure a quorum at each meeting.

**Concerns about the Change**

Although the idea seemed sound, there were still concerns to be addressed. One problem requiring consideration was whether the IRB members would be willing to attend two to three meetings per month instead of one. If the number of board meetings was doubled, then each board would need to meet twice. In addition, some months had five Mondays, and so forth. The boards would need to meet every-other-week, instead of the first and third or second and fourth weeks of the month, because not using the every-other-week schedule would mean that in months with five weeks there would be a delay for study reviews needing full board consideration. As a result, in five week months, some IRB panels would meet three times, according to the alternating weekly schedule.

Another problem the WFSM IRB leaders identified was how to recruit members for an additional four IRB panels. Recruitment and retention of members had never been particularly easy with four boards. There was concern that populating an additional four boards would be difficult. Rosters for each of the four panels were high enough, however, that essentially splitting these four boards into eight was possible. Only 5 new members needed to be recruited.

Finally, IRB leaders were uncertain how upper administration would react to the suggestion of undertaking a novel approach to institutional review board structure that had no known precedent in academic medicine. Without the support of administration, it would not be possible to move forward with testing the idea. Therefore formal proposal on the idea needed to be made.

**Generating Stakeholder Buy-In**

The idea was first presented to the Assistant Dean for Research. Who gave permission to present the idea to the four IRB Chairs and four Vice-Chairs for their input and feedback.

The four IRB Chairs and four Vice-Chairs expressed interest in the concept, but some were unsure of the model’s ability to succeed. Their concerns arose primarily around the potential conflicts they thought may be inherent in the work schedules of members working in clinical settings. Others raised questions about the wisdom of splitting the Boards because of the potential that fewer experts would be reviewing the material and that each Board might be less well equipped to review protocols than the larger Board with broader representation had been. The counter points presented were that each Board would be carefully comprised of experts from the most common areas of specialty needed.
for reviews and a long list of alternates and consultants was being developed to ensure that any additional expertise needed would always be available to Boards; and that even with smaller Boards (which was more desirable for quorum) the number of experts reviewing each protocol would actually increase due to the smaller agendas. Members would no longer be just taking the review of the primary expert as reasonable and comprehensive. Instead, there would be time for each member to look carefully at every item on the agenda and therefore discussion would be more thorough and more meaningful. The Chairs agreed that the model could work if executed as described.

The presentation to top leadership resulted in agreement to try the new scheduling model as a pilot for four months with two caveats:

1. That if there were serious difficulties the pilot would cease right away; and
2. That a report of the results would be presented at the end of the four months for consideration by senior leadership as to the value of adopting the new model permanently. These stipulations were readily agreed to by the IRB Directors and they began preparing a presentation for each of the four Boards, and for the task of creating the four new Boards.

**Getting Buy-In from IRB Members**

Prior to each of the Board meetings for the next four weeks, the IRB Directors spoke with meeting attendees about the new Pilot, how it would benefit the members and the institution, and what it would mean in terms of the schedule of meetings. Most members seemed excited to try the new schedule right away. Some clinicians stated that their schedules for clinics had been set for the remainder of 2011 and this meant that the current meeting time was all they had to offer, but that they could change their schedule to attend every other week in 2012. Only one member expressed dissatisfaction with the new schedule. This was a community member who indicated that coming to shorter meetings every other week would be more difficult than attending one longer meeting each month. His concern helped us in fine-tuning the model to address the inconvenience of off-site members.

**Implementing the New Model**

The first step was to utilize the expertise and experience of the Vice-Chairs by promoting them to Chair positions for the four new Boards. Each Chair was given the opportunity to choose the day and time that his or her Board would meet, with the stipulation that meetings would need to occur Monday through Thursday of each.

The next step was to fill in the roster of each Board with the appropriate experts for adequate review of most studies. It was decided that each member would be presented with the schedules for the eight Boards and allowed to select their first, second, and third choices. They would then be assigned to a Board at a day and time that worked for them, and one on which their expertise was best suited. In most cases we were able to accommodate members...
with one of their choices. The decision was also made to cap the membership of each Board at nine in order to benefit most fully from the quorum advantage a Board of that size offered. For most members, a time could be identified that would work to the good of their schedule. However, a few were unable to attend any of the remaining times given and were each offered to serve in an alternate position. Other members indicated a willingness to serve as expert consultants when needed on specific reviews as well. In the past, meeting attendance rarely reached 100%. By offering more days/time choices to members, we theorized that a larger proportion of members could regularly attend meetings, meaning that the number of people present for each meeting would not, on average, decrease. In order to better accommodate the easy attendance of off-site members, we initiated phone-in and video conferencing options.

The decrease in turn-around time by having a meeting of Boards one through four on the respective Monday through Thursday of every other week, and meetings of Boards five through eight on the Monday through Thursday of remaining weeks was estimated to be half of the current necessary review time, and the potential for an increase in quality of review was thought to be substantial as well.

Implementation of the new model did not necessitate altering the workflow through the IRB, as an electronic web-based review system was already in place that automatically routes protocol submissions to the appropriate ancillary review groups, then on to the IRB Office once all ancillary reviewer concerns have been addressed. Upon arrival in the IRB Office “inbox,” the submission completeness is assessed by a designated staff member. If all information necessary for review is present, the submission is then forwarded to one of the Protocol Analysts in a round-robin manner that ensures equitable workloads. Each of the four Protocol Analysts serves two of the eight boards, one board each week. Full board submissions that arrive during a given week are scheduled for the Protocol Analyst’s board meeting the following week. Board member assignment as a primary or secondary reviewer is made according to the expertise required. A pre-meeting review by the Protocol Analyst is conducted concurrently with board member reviews during the week before the meeting. All comments by the board reviewers and the Protocol Analyst are posted the electronic application file and are then discussed during the meeting; comments, concerns, and action items generated by the board are sent to the study team immediately following the meeting. Staff may assign a protocol to a specific board if its members have special expertise needed for the review (e.g. assigning a study of memory in the elderly to a board which has a gerontologist who specializes in Alzheimer’s disease).

Outcomes

To determine the degree to which the new IRB model improved turn-around time, we ran a report to examine the time required for IRB approval before and after the implementation of the new schedule. The time-frame examined incorporated all points between receipt of the application by the IRB until approval, including the time required for study teams to respond to IRB concerns. We found remarkable changes.
Improvement in Turn-around Time

Figure 1 shows the average approval times for each component of the IRB for the months of October 2010 through April 2011 and October 2011 through April 2012. As this figure illustrates, the time from receipt by the IRB to approval during the two time-periods, including time for investigator response to IRB concerns, decreased from 63 +/- 44 days to 34 +/- 30 days (p<0.01). This constitutes an improvement of 46%. Thus the review and approval process, as a whole, is now a more consistently efficient one.

![Comparison of Turn-around Time](image)

**Figure 1: Comparison of Turn-around Time**

Improvement in Discussion Quality

Quantitative data on the average length of time for discussion of items during IRB meetings was available by a review of the minutes, which recorded the start and end times for meetings and the number of items discussed. Before the change, the average length of time for discussion per item was 6.33 minutes. After adoption of the new model, discussion time per item increased by 33% to 8.40 minutes.

The results described above were reported to upper administration, who favored continuing the new structure. Investigators also expressed their support for the new model, and requested that the changes remain in effect. The Vice President and Senior Associate Dean for Research commented “I have heard nothing but good reports about the new IRB model. I am in favor of continuing this process” As a result of the positive feedback and conclusive data, the changes have been adopted as a permanent IRB structure and schedule design at Wake Forest School of Medicine.
Ethical Considerations

The new model has further augmented the discussion and assessment of ethical issues during full board meetings. Before implementing the changes, long agendas and meetings lasting several hours increased the risk that a full discussion of challenging ethical issues could be shortchanged. The new model has liberated the boards from the fatigue and time pressures of protracted meetings, so that discussion of ethical issues now takes place to an extent and depth that was not practicable before. Moreover, discussions are often initiated by board members not assigned as primary reviewers. As an example, at a recent board meeting a lengthy and spirited discussion took place about the ethical aspects of a compensation model proposed in new protocol. Continuing reviews and amendments are also more thoroughly examined for potential ethical concerns than was previously possible. For example, a protocol amendment was recently tabled because of concerns over how the proposed procedural changes might create an ethical dilemma under certain circumstances. The discussion centered on whether exposure to the investigational treatment would be appropriate for participants who either refused a procedure in the protocol that would help researchers clarify the state of their disease, or if those procedures were not possible because of the location of the disease. The protocol amendment allowed the continued inclusion of all of those subjects. Was it right to exclude subjects from potential benefit because their disease was not in a location where this information could be accessed? In clinical care would a similar approved treatment continue? Is it right to allow someone to stay on the study if they simply do not want to have the test done? Are the reasons for the researchers’ not being able to access the information (refusal or inability to get to the physical location of the disease) different to such an extent that subjects should be treated differently? These types of ethical issues are routinely discussed in IRB meetings.

Improvement in IRB Operations

Office process speed was also improved. The preparation and sending of memos, and the creation of meeting minutes, often took the remainder of the meeting day (an hour or so) and the entirety of the following day. This meant that no expedited pre-reviews were conducted by that Protocol Analyst during that time period. Following the change in schedule, the memos and minutes are almost always completed the same day as the meeting. The Protocol Analysts are then back to pre-review duties after the memos are sent and the minutes are completed, leaving no delay in the workload as a result of the meeting. One Protocol Analyst stated that since the new model was introduced, she has routinely prepared and electronically sent the memos, prepared the minutes, and pre-reviewed minor stipulation replies from study teams on the same day of the board meeting.

Board Member Satisfaction

Board members are also delighted with these changes. One member said in an email to the IRB administration: “I was skeptical at first that the workload for reviews would increase substantially, but that has not been the case. The shorter meetings mean that the whole afternoon is not tied up which more than makes up for increased frequency of meetings … Thanks for developing this new schedule that allows us to do a more thorough
job with less of a time commitment.” Another member said: “I would urge this new unique Wake IRB format to continue.” The Executive Chair said: “Every concern I had about this new approach has been alleviated with the impressive results I have seen.”

In order to quantify how board members feel about the new model, an anonymous online survey was conducted using SurveyGizmo software. Members were asked to provide their level of agreement with three statements about the results of the new model. Members were asked their level of agreement on a 5-point Likert scale (from strongly agree to strongly disagree) with the following statements:

1. As a member of the Wake Forest School of Medicine IRB, I like the new 8 Board structure

2. With the new 8 Board structure I am now more likely to be able to review all of the agenda items, even those not assigned to me as a primary reviewer.

For the third statement, members were asked to rate the quality of discussion on a 5-point Likert scale from significantly better to significantly worse.

3. I believe that since the 8-Board model was adopted, the quality of discussion the IRB is able to have regarding each agenda item is: (rate the quality).

60 of the 69 members surveyed responded. All respondents completed the entire survey. Figures 2, 3 and 4 show the overwhelmingly positive response to the changes board members reported.

As a member of the Wake Forest School of Medicine IRB, I like the new 8 board structure.

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Description</th>
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<tr>
<td>60%</td>
<td>Neither agree nor disagree</td>
</tr>
<tr>
<td>33.30%</td>
<td>Agree</td>
</tr>
<tr>
<td>5%</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>1.70%</td>
<td>Disagree</td>
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Figure 2: IRB Member Opinion of 8 Board Structure
Figure 3: IRB Member Opinion of Smaller Agendas

Figure 4: IRB Member Opinion of Change in Discussion Quality
Conclusion

By simply splitting Boards and doubling the number of meetings for each Board, we decreased the burden on Board members by lightening their monthly review load, shortening the agendas for each meeting, and decreasing the amount of time they spent in IRB meetings each month. In addition, this change increased the quality of reviews by ensuring that each Board member could more carefully look at the entire agenda (even if they were not a primary reviewer of that submission), and that discussion was not as hampered by members’ perception of time-constraints imposed by long agendas and the possibility of an unbearably long meeting, than was previously the case.

The idea on the new model was simple and based on successful external IRB practices, however the implementation of these practices within an academic medical center was novel. Challenges in implementing the new model included establishing the buy-in of chairs and vice-chairs as an initial step. Garnering their support was a crucial component in winning the confidence of the Dean and other administrative leaders. One aspect of the model that helped gain chairs’ support was the anticipation of shorter meetings. The chairs believed that IRB members would be willing to attend an additional meeting per month if each of the meetings were shorter, so that their IRB time commitment remained essentially the same. Having this conversation with chairs was easy since they shared the goals of the IRB office and were familiar with the success of the external IRB system.

The concerns raised by administrative leaders focused on the sustainability of the model and any potential negative effects on the quality of review. Having the support of all IRB chairs and vice-chairs helped to increase confidence of institutional administrators. The chairs and vice-chairs were experienced faculty with busy schedules and their endorsement of the model demonstrated its plausibility as one that could work long-term. The concern about review quality could be addressed only by pointing out the opportunity that smaller agendas and more available discussion time, per item, provided to the IRB. Consequently, the support of the chairs and vice-chairs helped to increase the degree of trust placed in the plan on the part of key administrators.

All parties agreed that improving the efficiency and quality of IRB reviews was an important goal. However, the untested model raised serious enough concerns, that there was reluctance at the institutional level to commit to the change on a long-term basis without further information. Agreeing on a pilot was a successful step that allowed the model to be formally tested and evaluated with the possibility of returning to the traditional schedule if predicted improvements did not materialize.

Upon rolling out the new model, support from researchers was received early on and the positive reaction helped to assuage concerns by IRB members and staff that the change might result in confusion or frustration on the part of study teams. After implementation, data was available to support the anticipated increase in efficiency and later, further data was gathered to support the expected increase in review quality.
In short, we believe that we are now able to better fulfill our main mission of protecting human research participants, but that in addition we have achieved other important goals that serve to further the efforts of our institutional leaders. Because no additional staff or funding are necessary to make these changes, it is likely that most IRBs could easily make similar adjustments if there is a need to improve efficiency or increase review quality above their current levels.

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Building Research Partnerships with Health Care Organizations: The Scholar Award Model in Action

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Abstract
In the current era of limited funding, researchers need strategic alliances to launch or sustain programs of research to significantly impact the nation’s health. This article presents a collaborative model, the Scholar Award Model, which is based on a strategic alliance between a College of Nursing in a research-intensive university and a pediatric campus of a local 22 hospital system. The conceptualization, marketing, and implementation of the Scholar Award Model are described and three examples of the model in action are illustrated. Features that have contributed to the success of the model include mutual goals with clearly defined outcomes, codified operating rules and procedures, and shared resources that differentially capitalize on the strengths and expertise of everyone involved. It is recommended that research directors in academic and healthcare organizations who are seeking ways to promote health research use the model to develop similar alliances.

Keywords: research partnership, strategic alliance, academe and health care organizations

Introduction
Over a decade ago, the National Institutes of Health (NIH) recommended that researchers forge strategic alliances to meet the nation’s future health needs in an era of flattened research budgets. The explicit message was the need to pool resources to “do more with less.” (Ruffin, 1997). Regrettably, today’s economy means that the recommendation to do more with less research dollars remains highly relevant. In the current era of limited funding, researchers need strategic alliances to launch or sustain programs of research to significantly impact the nation’s health.

There is little guidance on how to forge strategic alliances to offset limited funding and advance health and health-related research. Much of the contemporary health literature about strategic alliances is heavily slanted toward clinical practice. For example, an online clearinghouse and toolkit developed by two leading Nursing organizations, the American Association of Colleges of Nursing (AACN) and the American Organization of Nurse Executives (AONE), provide ample guidance for others seeking to establish successful academic-practice partnerships. (AACN-AONE Task Force, 2010). The discipline of medicine also has ample examples in the literature that provide guidance for partnerships to advance clinical practice. (Carney, Maltby, Mackin, & Maksym, 2011). When the topic
is research, the health and health-related literature about partnerships with academia is limited to industry and the production of products, such as pharmaceuticals and technologies (see Granger et al., 2012 for exception). Although key elements for successful partnerships transcend academic discipline and type of alliance (Kanter, 1994; Wagner & Muller, 2009), there are some unique ways to market and implement research partnerships with health care organizations.

This article presents a collaborative model, the Scholar Award Model, and describes how it was applied to forge a strategic alliance between a College of Nursing in a research-intensive university and a large, regional health care system with 22 hospital campuses. First, the college research director’s conceptualization of the Scholar Award Model will be described. Next, the marketing and three examples of the model in action at the particular health care system will be illustrated. The article provides direction for research directors in academic and healthcare organizations seeking to promote health and health related research in an era of limited research funding.

The Scholar Award Model

A college Director of Nursing Research (KA, the primary author) developed the Scholar Award Model to facilitate faculty scholarly productivity and progression with planned programs of research. The awards were conceptualized as seed money that would lead to a logical progression of subsequent studies. The idea was loosely based on the director’s experience as a faculty member at a College of Nursing at a previous university that had a collaborative research arrangement with an affiliated academic medical center. Her plan was to develop a similar idea to foster affiliations between her present College of Nursing and a number of local healthcare organizations.

Scholar Awards are named monetary research awards, to be granted by a healthcare organization and awarded to an academic institution for faculty-initiated research studies at the healthcare organization. The Scholar Award Model is intended as a long-term relationship between a college and the healthcare organization, with recurring funds for new, yearly awards. Nonetheless, the healthcare organization is free to determine whether new calls for applications are issued in upcoming years.

Awards are named for the healthcare organization that grants the financial resources. For example, if the healthcare organization is Star Hospital (a fictive name), each faculty member who is the principal investigator (PI) of a funded study is a “Star Hospital Scholar.”

Each faculty PI who receives a Scholar Award is a trained researcher and a subject matter expert who proposes a study based on critical gaps in knowledge about important problems. In order for the Scholar Award to be mutually beneficial to both the PI and the funder, the topic must be relevant to the faculty member’s program of research as well as of interest to the healthcare organization. As will be explained below, marketing the Scholar Award Model to potential funders requires some understanding of their current
circumstances and organizational goals. Also as will be explained below, ensuring that faculty goals are met requires equal attention.

The notion of using shared resources to achieve goals that are mutually beneficial to both the academic institution and the healthcare organization is at the heart of the Scholar Award Model. Shared resources include material as well as intellectual capital. Faculty members from the College of Nursing provide expertise with the subject matter as well as conceptualizing and conducting research. The College Research Office provides initial and ongoing consultation as needed, including consultation for research design and methods, data analysis, and disseminating study findings. The healthcare organization provides the funding and clinical site for the study as well as assistance with navigating through their organizational procedures. Although academic faculty are the PIs, that is they provide the primary intellectual contribution and oversee the management and scientific integrity of their respective study, professionals employed by the healthcare organization can be included as key personnel. Mutual benefit from sharing these resources includes prestige for both institutions as well as for the faculty members who are the study PIs. Study findings are expected to lead to subsequent collaborative studies with larger extra-mural funding and jointly authored publications in high impact journals.

The condition about fit between the healthcare organization’s goals and faculty members’ research programs is highly important. Healthcare organizations in the local area had been accustomed to commissioning studies of interest to them, namely quality assurance studies. The conceptualization and implementation of these studies had low potential for publication or subsequent funding from competitive extra-mural agencies that fund health and health-related research. (e.g., NIH and the Robert Wood Johnson Foundation; RWJF). As a result, faculty time and effort on these kinds of studies was not well spent. In contrast, the Scholar Award Model was designed to put faculty in the driver’s seat by having them propose studies that fit their research agenda.

To date, the College Research Director has marketed the model to four different healthcare organizations. Early in the marketing process, a Hospital Research Director at a local hospital embedded in a large health care system (PR, the second author) embraced the model and was instrumental in having her hospital institute and fund a number of Scholar Awards. The remaining three healthcare organizations declined but stated that they may be interested in the future. The next section explains the model in action, specifically how it was implemented at the participating healthcare organization.

The Model in Action

The first implementation of the Scholar Award Model began with a healthcare system that had had an earlier, non-contractual relationship with a faculty member whose research area was of high interest to them. The College Research Director took advantage of this earlier relationship to market a more formal model of collaboration to the research director at one of the healthcare system’s hospitals. The Hospital Research Director was
knowledgeable about limited seed funding for faculty research and expressed interest. Her interest was related to her institutional role in leading her hospital’s effort to obtain Magnet Status. Magnet Status is awarded by the American Nurses’ Credentialing Center (ANCC) to meritorious healthcare facilities with an environment where nurses flourish and improve patient outcomes. (ANCC, 2012). As part of the Magnet journey, the Hospital Research Director was seeking both to establish a research culture for staff nurses for evidence-based practice and get viable studies underway about nurse workforce issues and quality nursing care. In her words, “I could either use my budget to hire one full time PhD to conduct research and establish a research culture or I could partner with a prestigious college of nursing and fund a number of research studies that fit the hospital’s agenda.” Given that one of the resources embedded in the Scholar Award Model was a cadre of trained researchers, the latter option was deemed a more economical approach for generating a breadth of studies on different topics.

Scholar Awards have been in place at this healthcare organization for over two years. To date, the healthcare organization has funded four studies, two each year at $10,500 each. Two more awards at the same dollar amount are pending. Per agreement with the University Office of Research Administration, indirect cost for facilities and administration is at a reduced rate of $500 per award.

Originally, in Year One, studies were limited to a single hospital in the healthcare system, the one that directly fell under the Hospital Research Director’s charge. Of note is that this is a specialty hospital, a hospital for children. Thus, a criterion for funding was that the studies had to have relevance to a pediatric campus. As previously stated, the Hospital Research Director’s main concern was to advance the hospital goal of achieving Magnet Status as a meritorious health care facility. Because Magnet Status has broad criteria for meritorious healthcare facilities, a number of faculty members were able to propose research that mutually fit their own and the hospitals’ goals. These Magnet criteria are that the facility has or uses transformational leadership; structural empowerment; exemplary professional nursing practice; new knowledge, innovation, and improvements; and empirical quality results. (ANCC, 2012).

In Year Two, in response to the College Research Director’s request and with the Hospital Research Director’s advocacy, the Scholar Award Program expanded to include other hospitals in the health care system. These additional hospitals included those that pertain to women’s health and obstetrics as well as acute care of adults in general. The expansion to women’s health was facilitated by the Hospital Research Director’s promotion to lead research on women’s and children’s health throughout the healthcare system. With regard to the expansion to include acute care of adults in general, the original Hospital Research Director acted as the liaison to these participating hospitals and provided administrative support for the Scholar Award studies occurring there. To date, she continues in all of these roles, including research liaison to the adult acute care hospitals that are not directly under her jurisdiction. The expansion to other hospitals provides an even broader focus for potential studies, thereby enabling more faculty members to propose studies that fit their programs of
research. Incidentally, the original hospital has received Magnet Status but continues to issue calls for new collaborative studies with a pediatric focus.

**Operating Rules (Policies and Procedures) for the Scholar Awards**

Once the yearly number of awards and total yearly dollar amount are determined by the healthcare system, a call for applications is issued. Interested faculty members are encouraged to discuss their proposed study aims with both the Hospital and College Research Directors. Conversations with the former are to determine whether study aims are of interest to the healthcare system and if it is feasible to conduct the study at the proposed site. Conversations with the latter are to address scientific merit and potential impact of the proposed study as well as discuss whether the study is the logical next step in the faculty member’s program of research.

Both the Hospital and College Research Directors jointly review Scholar Award applications. The review process is competitive and includes meeting criteria from both institutions. In addition to fit with hospital goals, decisions on which studies to fund are based on scientific merit, feasibility, and potential impact of the research. Feasibility includes having an adequate pool of eligible study participants as well as the likelihood that the data needed for the study are accessible and easily collected in the proposed clinical environment. Since organizational norms and procedures differ about which data are accessible by whom, the Hospital Research Director’s input is crucial. The criteria for scientific merit and potential impact are because these criteria are essential if preliminary studies are to lead to funding from highly competitive extramural sources, such as the NIH. Similarly, scientific merit and impact also increase the likelihood of publishing study findings in high impact journals. The College Research Director shares her knowledge of the strategic plans and funding priorities from select funding agencies (e.g., NIH, RWJF) as well as her expertise as a NIH reviewer and seasoned researcher to evaluate scientific merit and impact. A third reviewer, either from the healthcare system or the college, is included in the review process whenever additional input is needed.

A master agreement is in place to accommodate separate work orders for each funded study. The master agreement includes the services to be delivered, payment, ownership and publications, confidential information, and term and termination. Since the goal of this particular Hospital Research Director and the larger healthcare system was to create a culture of nursing research and increase nursing staff interest in research for evidence-based practice, the services specified in the master agreement are broadly stated. The statement is as follows: “University faculty and staff possessing the requisite skills, experience, and knowledge necessary will work with the hospital and hospital’s nursing staff on various studies modeling research skills to novice hospital nurse researchers.” Each study funded under the master agreement is further identified as an individual work order.

Clearly specifying the topic of ownership and publication in the master agreement was particularly important. This includes stating the following about data use and publication: (1) The faculty PI will have first authorship on the primary publication resulting
from the research coming under his or her direct supervision, (2) Additional publications related to the study will include the faculty PI, with order of authorship following the International Committee of Medical Journal Editor guidelines, (3) The faculty PI maintains the rights to retain and use the data for primary and secondary analysis, and (4) All publications will acknowledge both the university and the health care system.

Once a Scholar award is awarded, the Hospital Research Director assigns a liaison from her department to assist the faculty researcher with the organization's IRB review. The University IRB has a joint agreement and procedures in place with the healthcare system to accept their review. Once IRB approval is obtained, funds are transferred to the university. The University Research Office administrates the award and maintains the budget and expenditure reports for each award as well as handles closeout and transfer procedures when the study ends.

**Examples of Scholar Award Studies**

Three completed or in progress Scholar Award studies are illustrated next. All three PIs are junior faculty with Doctorates who are early in their research careers. Although each study addresses a different topic, all are consistent with hospital goals to either improve nursing care and patient outcomes or improve the work environment for nurses. All three studies also meet the healthcare system’s more general goal of creating a culture of nursing research and evidence-based practice. All three studies are also essential steps in the PI’s planned programs of research. In two cases, the faculty PIs adapted their studies to qualify for the pediatric focus that was required in Year One when they applied for a Scholar Award, but this adaptation did not hinder their research agenda. The third study required a hospital with an obstetrics unit, which was what prompted the College Research Director to explore expanding the Scholar Awards to other hospitals within the health care system.

**Allred’s Scholar Award**

Dr. Allred’s program of research pertains to nursing interventions to manage pain. Subsequent to earning her PhD and becoming a faculty member at the College of Nursing but prior to obtaining a Scholar Award, she obtained intra-mural funds to collaborate with computer engineers and designers at the university to develop an educational computer game to educate nurses on state-of-the art pain management. The long-term objective was to improve patients’ pain experience. First, she interviewed nurses who were employed on several different adult medical and surgical inpatient units to determine current pain assessment and management practices. Next, she used content from the interview data to develop a computer game with typical or ecologically valid patient scenarios and nurse responses.

The computer game contained two patient scenarios, one male and one female patient, with numerous frames for each of the two unfolding scenarios. Of the response options for each frame, one was the correct or best answer based on gold standards reported in the literature about pain assessment and management. The computer game was designed so that players receive points for choosing the correct/best response for each frame. At the
conclusion of the game, a computer-delivered didactic summary features Dr. Allred. In this summary, Dr. Allred reviews the rationale for the correct/best answers.

Although preliminary feedback from this intramural study suggested that the computer game is engaging and relevant to nursing practice, budgetary constraints prohibited developing computer simulations that captured nuanced facial and bodily gestures of interest when assessing pain. Dr. Allred needed additional funds to produce higher fidelity computer simulations before systematically evaluating if the game is an effective way to improve knowledge and nursing management of patient pain.

These additional funds were forthcoming in a Scholar Award from the Children’s Hospital described above. Dr. Allred shifted her focus from adult inpatients to pediatric inpatients. With her previously established team of computer engineers and designers, she used part of her Scholar Award to refine the computer game to develop higher fidelity computer simulations that captured more nuanced facial and bodily gestures indicative of pain. In addition and consistent with pediatric nursing care, she added communicating with parents and addressing parental concerns to the content of the computer game. The adult inpatient characters in her first computer game, that is the one designed to improve nurses’ pain management of adult inpatients, became the parent characters in the new game, making it less costly than developing all new characters. The Scholar Award also funded interviewing pediatric nurses and parents to develop ecologically valid patient/family scenarios and nurse responses for the new computer game.

Dr. Allred is currently collecting data about nurses’ perceptions about the new computer game, specifically if it is engaging, ecologically valid, and informative. Findings will be used to further refine the game and its content if indicated.

All of these tasks are preliminary to Dr. Allred’s plan to seek NIH funding for an intervention study to test hypotheses about whether the computer game improves nurses’ knowledge about pain management and their assessment and management of pain in clinical practice. It is anticipated that having already developed the technology, obtaining preliminary feedback, and demonstrating experience with recruiting study participants will make a subsequent funding application to NIH more competitive. It is likely that Dr. Allred will take advantage of her established relationship with the Scholar Award hospital and also recruit nurses for the larger study from other pediatric units at the same hospital. Thus, it is also anticipated that if the educational intervention is effective, it will improve nursing care and patient outcomes at the funding hospital.

Andrew’s Scholar Award

Dr. Andrew’s program of research pertains to nursing workforce issues, particularly work stress, job satisfaction, and staff turnover in new graduate nurses. Like Dr. Allred, Dr. Andrews received intramural funds for a preliminary study shortly after receiving her Ph.D. and joining the faculty. In this intramural study, she used semi-structured qualitative
interviews to explore senior baccalaureate nursing students’ initial expectations about their upcoming transition to the workplace, arguing that initial expectations shape workplace stress, job satisfaction, and staff turnover.

Subsequently, Dr. Andrews received a Scholar Award for a longitudinal study to investigate new graduate nurses’ early transition to the workplace and how their early and ongoing work experiences contributed to changing expectations and intentions to leave their first job. Since Dr. Andrews applied in the first year of the Scholar Award Program, she had to focus on pediatric nurses. Nonetheless, limiting the study to this nursing specialty did not hinder Dr. Andrew’s planned program of research.

Dr. Andrews has completed the Scholar Award study and is in the process of writing up the study for potential publication in a peer-reviewed journal. Her next intended step is to use content about negative and positive workplace conditions to develop a reliable and valid measure of workplace stress and job satisfaction for new nurses.

After developing and refining the needed measures, Dr. Andrews will seek funds from the Robert Woods Johnson Foundation to develop an explanatory model of staff turnover in new graduate nurses. She intends to recruit a national sample for this study. Nonetheless, she has already generated information of use to the hospital that funded the Scholar Award study. More specifically, findings from her qualitative content analysis provide the hospital with local knowledge about how to retain their new graduate nurses.

Waldrop’s Scholar Award

Dr. Waldrop’s program of research concerns improving parenting competencies and infant outcomes in high-risk mothers through educational parenting interventions. She was interested in two interventions, both of which were developed but not sufficiently evaluated by others. She was also interested in delivering the interventions to mothers in a post partum unit before they were discharged to home, arguing that mothers need these skills as soon as they take their new infants home.

Dr. Waldrop needed to address a number of feasibility issues prior to applying to NIH for funding for a randomized control study to compare the two interventions with a control group. More specifically, she needed to investigate the feasibility of recruiting study participants and delivering the intervention on a post partum unit before mothers and their newborns were discharged to home. She also needed to estimate potential attrition at one and two months post-intervention, which is when parental self-efficacy and other proposed intervention effects are evaluated.

Dr. Waldrop obtained a Scholar Award to pilot the intervention with mothers on a post partum unit in a Women’s Hospital that is part of the same healthcare system as the Children’s Hospital. She has also involved a hospital staff member as a co-investigator. The study is in progress. Currently, she has recruited, delivered the intervention to, and collected
post-intervention data from about a third of the planned number of study participants. She plans on including the same hospital as one of study sites for the study she intends to submit to NIH, thereby providing the local hospital with information about an intervention they may be interested in providing as part of their usual post-partum care.

Conclusion

Although the Scholar Award Model has not been in operation long enough to evaluate all of its intended outcomes, there are some indications of early success. Its implementation at one local healthcare system, particularly its yearly renewal and expansion to a greater number of hospitals within the healthcare system, is an early testimony of success. The Scholar Award Program has also already yielded some of the goals put forth by this specific healthcare system: The originating hospital received Magnet Status, staff nurses are being exposed to nursing research studies in action, and, depending on whether the study is completed or in progress, evidence to change or support local practice is or will be available. However, it is too soon to determine if the Scholar Awards will deliver on the intention that the program will yield joint publications and subsequent studies with funding from competitive agencies like the NIH and RWJF. Realistically, it could take up to five years after a given study is completed to realize these latter goals.

It is likely that the following features contributed to the early success of the Scholar Award Program: Mutual goals with clearly defined outcomes, codified operating rules and procedures, and shared resources that differentially capitalize on the strengths and expertise of everyone involved. The literature identifies these same features as key for developing and sustaining successful alliances. (Kanter, 1994; Pietras & Stormer, 2001; Wagner & Muller, 2009; Wolf & Maurana, 2001). However, other academic research directors seeking to implement the Scholar Award model will need to supplement these key features with marketing strategies that are relevant to their intended audience. For example, Magnet Status from the ANCC is not the main agenda for every healthcare organization nor is nursing care or nursing workplace issues appropriate research topics for every health or health-related academic discipline.

The literature also identifies risks that can jeopardize successful alliances. For example, successful partnerships must extend beyond the people who put them together if they are to be sustainable. (Giesecke, 2012). This risk is particularly salient to the case presented in this paper. As explained above, the expansion of the Scholar Award Program to other hospitals within the healthcare system depended on advocacy from the Hospital Research Director at the first hospital that participated. It is particularly noteworthy that her administration charged her with all of the activities associated with expanding the Scholar Award program to other hospitals, including hospitals where she does not have other administrative responsibilities (i.e., the acute care adult hospitals in the organization’s healthcare system). Her initiative, leadership, and day-to-day responsibility for the expansion of the Scholar Award Program begs the question about whether the Scholar Award Program would continue to flourish without her.
Additional data are needed to evaluate the productivity and sustainability of the Scholar Award Model presented in this paper. These data include quantitative indicators, such as number of publications in high impact journals, number of continuation or subsequent studies funded by NIH and other agencies funding health and health care research, and the dollar amounts of these subsequent studies. Qualitative data from the scholars who received the awards as well as the Hospital Research Director are also needed to obtain their input on how the Scholar Awards contributed to meeting their goals.

There are two caveats for others who may be interested in implementing the Scholar Award Model at their institutions. First, it is important to note that academic and healthcare organizations have distinct differences and are based on different business models (De Geest, et al., 2010). Differences create an ever-present tension that requires College Research Directors to routinely broker between faculty PIs and the healthcare organization to assure that the alliance remains mutually beneficial. Detailing how these tensions are managed is beyond the scope of this paper. However, the importance of joint discussions during proposal development between faculty members and both the College and Hospital Research Directors cannot be overestimated. It is during these discussions that competing goals are identified, managed, and replaced with mutually beneficial ones. Second, the current economic climate mentioned in the introduction of this paper is not limited to NIH. Most organizations, including healthcare organizations, are under financial strain. Thus, those who wish to implement and sustain a successful Scholar Award Program must identify and keep mutually beneficial goals at the center so that sharing resources makes good business sense. In turn, individual faculty scholars must deliver on their intended study goals because their study goals are part of a larger system of strategic alliances.
References


The Grammar of Power: The Problem of Moral Objectification in Human Research

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Abstract

During the course of the last century, a number of historical instances of unethical human research have occurred, and risen to the forefront of the social imagination. The atrocities of the European and Pacific Holocausts, the tragic 1932-1972 United States Public Health Service Syphilis Studies at Tuskegee, concomitant with the 1946-48 unethical public health human research in Guatemala loom large. These high profile instances join with the Cold War pediatric experiments and other cases to draw the attention of culture to clear patterns of serious ethical deficiencies and regulatory non-compliance. The facts surrounding these historical events highlight the serious danger of moral objectification of human subjects in research. These cases carve in high relief the absolute necessity of one of the most critical areas of research administrator service, namely the ethical oversight of research involving human subjects. This article will explore the contemporary national concern over human subject protections, provide a brief synopsis of illustrative problematic cases, proceed to a reflection from a philosophical perspective upon the problem of moral objectification, and then further define the role research administrators should assume in assisting their institutions to learn a new grammar of service, namely an ethical “language” and perspective that transcends an all too elementary sense of regulatory compliance.

Keywords: research protections, moral objectification, human research, integrity, ethics

Introduction

“I am because we are; therefore we are because I am.”

…An African proverb

Over the last decades, the United States research community has seen a significant increase in the number of corrective actions taken at academic and research institutions involving concerns over the protection of human subjects from research risks. Numerous investigations and corrective efforts have been undertaken by national authorities at a broad variety of academic and research centers. Some of these garnered greater notoriety than others; all were met with extremely variable reactions. Some regarded the investigations as timely, appropriate, and long overdue, while others regarded them as excessive, factually and empirically invalid, or overly punitive and damaging -- not just to institutions and individual researchers but to the reality of research. The debate and the sentiments continue. However one wishes to judge the situation, it is clearly evident that culture in the United States, including the healthcare research culture itself, is increasingly more sensitive to the rapidly expansive understandings of what it means to protect the rights, freedom and dignity of the human person or persons enrolled as subjects in research.

In the past, the focus of human subject protections often centered upon biomedical and psychological protections. This is understandable, given the medical nature of many research efforts. However, various academic and cultural forces have brought this narrow focus into the light of sharp critique. Making the assumption that the central concern of human subjects protection is confined to the physical/medical or psychological can appear...
to be an exercise in legalistic physicalism. Hence, as long as a medical researcher does not cause a subject physical pain, that subject is protected, and the ethical responsibility of the researcher is met. However, it is safe to assume that the paradigm of human subject protections has expanded proportionally in the last decades to the unfolding understanding of the nature of the human person as a free and equal agent in a democratic and pluralistic world. The challenge is clear as researchers of all disciplines encounter new regulations. What is difficult is to convince participants in this often free wheeling and heated cultural debate to transcend the minimalist level of “regulations” and appreciate the deeper ethical, moral, social, humanistic, and philosophical issues at stake as human society and human research continue in the 21st century.

This article has a three-fold purpose: 1) To summarize, within a very broad highlighting of some of the more significant historical instances of unethical human research, the less well-known case of the 1943-1973 radiation and nutrition studies within the Massachusetts State Department of Mental Retardation, sometimes called the “Science Club” or Fernald/Wrentham School Experiments; 2) To critique such occurrences and their research ethics issues from the perspective of the thought of the Russian philosopher Nicolas Berdyaev; and, 3) To consider what might be the newly emerging essential leadership of research administrators who function as compliance officers in human research protections.

Historical Backdrop

Throughout the 20th century and to the present time, United States society has been touched by a wide variety of historical instances of tragically unethical research. These instances have certainly affected the process and progress of research itself and its role in academic life and industrial advancement. However, on a very ultimate level, these instances have and will continue to have a serious societal and cultural impact on the national conscience and, indeed, on the global community at large. Certainly the atrocities of unethical research performed on individuals during the Holocausts both in Western Europe and in the Pacific region stand out as one of the totems of history reminding culture of the depths to which human beings can sink. While not thought possible in United States during those years, history would eventually come to know that similar atrocities were perpetrated on the low income men of Tuskegee, Alabama, from 1932-1972 during the notorious Public Health Service (PHS) Syphilis Study done there. (Jones, 1993). In 2009-2011, the public discovered that even worse experiments were perpetrated by government physicians on vulnerable populations in Guatemala. Indeed, what was not thought possible absolutely occurred. (Nelson, C., 2012). The impact of these instances from those years will never be purged from the national conscience. Their occurrence has given rise to an enduring legacy where all persons must be committed to preventing the worst by promoting the best. (Katz and Warren, 2011). In today’s climate, researchers in various fields are reminded time and again of the possibility of unethical research and human research protections violations that can occur even within studies that might be approved by requisite oversight bodies. Such cases include those that resulted in the deaths of Jesse Gelsinger and Ellen Roche. (Houser, 2012). Hence, it is rightly understandable that the protection of human research subjects
is today seen as an intrinsic part of the overall system of research ethics and the responsible conduct of research. (Shamoo and Resnick, 2009).

Yet one must ask the question whether there is a fundamental human substratum out of which sorrowfully arises the many and complex factors and motivations that have led and still can lead to the exposure of human research subjects to tragedy and the violation of their fundamental rights and dignity as persons. One particular case may assist this inquiry.

A 1994 Task Force Report, written for the Executive Commissioner for the State of Massachusetts Department of Health and Human Services, revealed a 30-year series of nutritional/radiation experiments performed on children in the Fernald and Wrentham schools in Massachusetts. These institutions were open for the care of mentally retarded children or other children assigned to these schools but who were not themselves mentally deficient. The report was prepared in response to claims of abuse and the call for compensation for damages suffered by those who were participants in these experiments. The experiments in the report included: 1) nutritional studies from 1946-1955 involving radioactive tracers of iron and calcium placed in children's food; 2) thyroid studies between 1952 and 1961 performed specifically at the Wrentham School, including Cold War experiments conducted to determine at what point iodine would block the uptake of radioactive materials after a nuclear fallout, and thyroid studies with children suffering from Downs syndrome; and, 3) therapeutic/diagnostic studies between 1962 and 1973 using radioactive isotopes for specific metabolic disorders. (Commonwealth of Massachusetts Report, 1994).

While some may have a more focused interest in the medical science aspects of the studies performed, the focus of this article centers upon the violation of human subject protections demonstrated during the 30 years over which these studies were performed. Commentators have remarked that both the Fernald and Wrentham schools were “asylums” in an older almost caricature sense, where children as inmates could easily have been exploited. Both the children and their guardians were enticed to become participants by being offered membership in what was described as a privileged “Science Club.” However, contrary to what passed for popular sentiment at the time, the child participants accrued no therapeutic benefit. (Moreno, 2000).

The State report strongly confronted clear deficiencies and violations of human subject protections: researchers failed to inform families and subjects that the studies were non-therapeutic; letters to family members did not impart basic information for truly informed and voluntary consent; participation in the studies was clearly based upon unfair enticement and was, therefore, coercive; children judged mentally deficient bore greater medical risks than those judged “normal,” and radioactive dosages of calcium were in excess of maximum dosages permitted at the time of licensure. Therefore, the Commonwealth of Massachusetts itself failed to provide basic human rights protections to all involved. Subsequently, compensation was required and sanctions were imposed. (Commonwealth of Massachusetts Report, 1994).
From even the most cursory reading of the report and the testimony provided from former participants, it is clear that these studies violated the basic principles of human subject protections, the cornerstone for which in the United States is The Belmont Report of 1979. The Belmont Report articulated the three basic principles of human subject protections: respect for persons, beneficence, and justice. (Belmont, 1979).

Contemporary commentators on these studies raise the significant criticism that these experiments are direct evidence of the very dangers and difficulties that made The Belmont Report essential. These studies violated the autonomy of the subjects and respect for their personal dignity and freedom. Neither children nor parents/guardians were given adequate and clear information required for informed consent. There was a lack of parental/guardian permission and a lack of assent from the child subjects. Subjects were both manipulated and coerced. In essence, researchers made use of children who, in addition to their age, were considered a special population with special needs. Indeed, children are clearly regarded as a special vulnerable population both in regulation and in common ethical thought. (Nelson, R., 1998). The dubious medical benefits to the participants violated the principle of beneficence; the misuse of mentally deficient children vice “normal” children was an additional violation of the principle of justice. (Belmont, 1979). Interestingly, the 1997 settlement provided only a relatively small sum of financial compensation to each of 30 former participants and there was no admission of guilt from the sites at which the research was conducted. (Moreno, 2000).

These matters are now part of research history. Based upon the points already raised, the intention of this article, is to pose two critical question: How could these things come to pass? How are they preventable in the future?

The Problem of Moral Objectification

There may be a general assumption among some that the nations and peoples of the world always have been outraged over historical instances of unethical human research. In particular, we might wish to assume that there was, after World War II, a universal and unequivocal cultural reaction to the atrocities visited upon individuals in the Holocausts that occurred in Europe and the Pacific region. Based upon these assumptions, we might wonder how more recent unethical human research has been allowed to occur. In particular, given the close proximity in time to the Holocausts themselves, we can rightly wonder how the Massachusetts radiation/nutrition experiments on children could have occurred in America itself in the period immediately following World War II and the issuance of the Nuremberg Code. Is the assumption of moral outrage valid? Did any outrage actually happen? Let us consider the situation surrounding the Massachusetts radiation/nutrition experiments.

Moral outrage at the atrocities of the Holocausts and universal acceptance of the Nuremberg Code are presumptions that do not bear much reality. The Trials were not always
front page news, nor was the Nuremberg Code when it was formulated. Furthermore, the Code was felt by some to be unnecessary since problems such as these “would never happen in America.” In this light, it should be no small wonder that judicial citation of the Nuremberg Code for human subject protections did not occur until 1973, and that in some places there was no judicial recognition of the right to informed consent until 1982. (Commonwealth of Massachusetts Report, 1994).

But were the deficiencies at the Fernald and Wrentham schools possible only because there was an underdeveloped level of judicial or procedural awareness regarding human subject protections? Perhaps not. If not, then what could account for this problematic research and other historical incidents where the rights and welfare of human subjects were clearly not protected? Human ignorance? Forgetfulness? The answer cannot be as simple as mere human oversight. In fact, the dynamics involved were more subtle on a psychosocial level and therefore are all the more critically important for focused consideration.

From the time that the human animal is born, it is engaged in a lifelong intense process of making sense out of the billions of bits of information and stimuli that bombard the senses at every moment of existence. Born as we are into a world starkly cold compared to the warmth and security of the womb, we embark upon the classic Freudian journey in search of increasing pleasure, eliminating pain, and attempting to have a sense of control over our bodies, our world, and indeed over our very selves.

For the human animal, achieving control is often at the expense of others. This fundamental dynamic is most powerfully met in the quest of the individual to become, as it were, a distinct “self.” Our very language skills betray this powerful process at work in ourselves. Many times, to become an “I” means that I might reduce the other to being an “it.” To define ourselves, we can use a grammar of power to distinguish ourselves as active human agents from others whom we make passive objects of our observation and judgment. Like figures from some ancient cultural stories, the human animal must give names to others as a way of defining the self over and against them. This can be looked upon as the origin of the process of objectification whereby humans stand apart from external reality, learn about it, and make it their own.

The objectification of knowledge is a morally neutral reality. It is also essential. Admitting from a purely epistemological perspective that total objectivity of knowledge is an impossibility, nonetheless our educational system and scientific inquiry are based upon our being able to observe and analyze reality from a relatively dispassionate, almost third party posture. It is part of the process of learning and existing that we stand “apart from” the things of reality so as to meet them in the act of knowing. However, there is a decidedly potential negative side to the process of objectification: the reduction of reality and even other human beings to mere external phenomena bereft of having the same foundational nature as do I, namely the freedom to be a subject with free will, independent dignity, inalienable liberties and the fundamental right to act and not merely to be acted upon. Objectification,
intrinsically critical for the act of knowing, is at the same time in another mode the foundation of human abuse, discrimination, prejudice, and the oppression of human rights.

One of the most interesting academic characters of the 19th century who addressed human objectification and its destructive side was Nicolas Berdyaev. Berdyaev was a philosopher. He was born in Russia in 1874. He was intimately connected to the Russian aristocracy, was keenly aware of the inequities of life for the poor under the Czars, became a Marxist, suffered oppression under the Bolshevik Revolution, was exiled from Russia by the new government, and made to live in Western Europe. He suffered oppression again in Paris during the Nazi occupation. All of his personal wanderings carved out a hollow hunger that moved him more deeply into his spiritual roots both as a patriot and a believer in Russian Orthodoxy. His experiences of extreme oppression sharpened his intense passion for personal freedom and honed with precision his academic and personal reflections upon the problems of oppression and suffering. He authored fifteen books of philosophy in the areas of metaphysics, epistemology and ethical theory. He died in Paris in 1948. (Lisin, 1995).

Because of his intense personal experiences with political and spiritual oppression and his passionate writing on behalf of individual and cultural human liberty, Berdyaev has been called the philosopher of freedom. His philosophy is a product of the mix of his personal passion and strength with his experience of human turmoil in turn-of-the-century, revolutionary-prone Russia. His intense experiences moved him to speak out against totalitarian powers and materialistic philosophies that he believed were turning human beings into automatons. In addition, he addressed the dynamics of objectification. Berdyaev appreciated how moral objectification is the destructive side of a natural learning process. He observed that moral objectification turns free people into mindless laborers, assembly line cogs, throw-away children, mere expendable numbers in a vast population. (Lisin, 1995).

For Berdyaev, learning and education do require objectification. It is the necessary part of being and becoming. The human being must take the world into the self to perceive it, to apprehend it, to learn it, to make it one’s own. (Berdyaev, 1960). The human does this to know, to make order out of one’s sense of the world by being free to rise above the world. (Berdyaev, 1957). Thus the human takes all of reality into the self in the act of self-liberation to become part of a larger cultural spirit, a synergy, or as he called it a sobornost --- the communion of all that exists in freedom and dignity. (Berdyaev, 1960).

Berdyaev, however, was not a naïve optimist. He had a clear vision of how the process of objectification, so vital for becoming a part of reality and building up knowledge and human community, is fragile. He saw that this natural and necessary process can degenerate into moral objectification whereby others who are “subjects” can be made into “objects” to be used and utilized. Writing in 1952 in a period of reflection after his experience of the Nazis in Paris, he laid out the essential marks of moral objectification. (Berdyaev, 1957). He was clear that moral objectification is different from other forms of
objectification critical for education, learning and sensation. Moral objectification, as he saw it, is an existential problem and leads to oppression, slavery, and the disintegration of the moral unity of the world. Moral objectification is characterized by:

1. The moral distancing of others as objects from the self as subject.
2. The dissolution of the other as an individual entity.
3. The establishment of necessity and loss of self-determination whereby the freedom of the other is vanquished.
4. The destruction of the distinctiveness of unique individual character.

Berdyaev’s understanding of the problem of moral objectification did not occur to him simply after his last experience of personal and cultural oppression during World War II. His delineation of the marks of moral objectification as an evil was an outgrowth of his consistent personal belief that one can never reduce the human subject to being a mere object in the hands of human utility regardless of how worthy that utility might be. (Berdyaev, 1947).

These brief notes on the life, work and thought of Nicolas Berdyaev give us great cause to consider what might be at the heart of the problem of unethical human research. There is within the human community the desire to know and to understand. Sometimes the passion for knowledge, creativity and understanding can occlude the moral commitment to the protection of the rights and welfare of human subjects in research. Certainly notoriety over revealed unethical human research is clear testimony that contemporary society is, at least, being made more keenly aware of the ever widening issues involved with human subject protections.

However, as in the case of the Massachusetts pediatric experiments, it is interesting to wonder how persons throughout the United States in the period immediately following World War II could have been so baldly blind to inappropriate, highly questionable and ethically compromised research enrollment procedures in the aftermath of the Holocaust atrocities and the Nuremberg Trials. In addition to the inherent problem of moral objectification, which must be raised as an ever possible problem even within the passion of scientific inquiry, it is equally important for researchers and research administrators to consider how we may or may not be guilty of a type of cultural imperialism that makes us believe that “things like this are just not possible in America.” In fact, indeed they are possible. They have happened. The PHS syphilis study at Tuskegee happened. The Guatemala studies happened. The Ellen Roche and Jesse Gelsinger cases happened. And they still can happen today. Therefore, despite all good intentions, there is a critical need for some force or presence in the research institution to point maturely with prudence and wisdom to the far reaching principles and requirements of research ethics to protect as best as possible all human subjects from all possible harms.
The Research Administrator: Beyond the Compliance Officer

Research administrators have a very fluid set of responsibilities among professionals in academic and research communities. Over the 70+ years as the profession has emerged, the tasks given to research administrators have multiplied with almost Fibonacci-esque proliferation. In the years since the onset of the federal regulations protecting the welfare and rights of human subjects from research risks, many research administrators have assumed duties as compliance officers for institutional review boards, human protections policy offices, and clinical trials coordination centers. It has not been an easy assumption of duties. With all of the administrative matters required for human subject protections administration, often the research administrator becomes a specialist whose concern is with meeting schedules and institutional requirements, and ensuring that compliance regulations are followed. Yet somehow, when we recall the problems of unethical human research summarized previously, it seems that there is something more that research administrators are being called upon to do for the protection of human research subjects.

In the history of Western philosophy and thought, no character is more enigmatic than Socrates. Attractive as his legacy may be in our educational theories, he would be as welcome in our day as he was in his own. He called himself the gadfly stinging the conscience of his race. We can well imagine that his fate today would probably be meted out with some similarity, at least on the level of professional and social ostracism. In his spirit we might consider the research administrator engaged in the administration of programs and processes for the protection of human subjects as a bit of the Socratic gadfly.

Human subject protections assuredly requires skillful oversight from the perspective of regulatory compliance and executive administration. However, the problems we have seen develop in our time over the protection of human subjects, or the lack thereof, are well and far beyond clerical tasks, administrative procedures, business practices, or rudimentary and perfunctory regulatory compliance. The real challenges in human subject protections involve moral principles. This necessarily demands that there be some entity responsible for starkly and unreservedly calling into question any assumption that the corporate and individual conscious and subconscious research “selves” are always and everywhere committed to the highest humane principles and values. These same voices must call the attention of the individual community to the necessary human humility to admit that no nation, no institution, and no research professional is above moral failure or above the possibility of being seduced away from the central commitment to the protection of human subjects by the possibility of personal, academic and research gain.

Research executive leaders, administrators, and managers in human subject protections live at a daring, if not dangerous, crossroads. We must demand accountability for administrative and regulatory norms. However, it is also the responsibility of the research administrator to engender in policy, in committee meetings, and among all members of the research staff the ability to engage in self-criticism regarding the quality of the researcher’s and the institution’s commitment to the protection of human subjects from factors that
might endanger them physically, psychologically, socially, spiritually, culturally, economically and in a myriad other areas central to human freedom as we understand liberty and human rights in the contemporary scene -- both within this culturally diverse nation and in international settings.

**Conclusion:**

**From the Grammar of Power to the Language of Ethos**

The research administrator in the service of human subject protections is an executive above and beyond a regulatory or administrative compliance overseer. Being such a servant in the research community is a commitment to articulating in the United States research industry a language that is far beyond the grammar of power. It is a commitment to bespeak the language of ethics, better yet, *ethos* --- in other words, the formation of one's fundamental character as a human person and a societal or cultural professional. This language of *ethos* is not a rudimentary mouthing of monotone sound or syllable. Rather, it is a bold, dynamic, and pluriform speaking that, when heard, stretches the imagination and consciousness to do the right thing, and even more fundamentally ever to become the very embodiment of The Greatest Good.

In times of decreased research funding, there is always the inherent possibility that United States research communities may engage in a Frankenstein-like competitive, cannibal consumerism that takes little time to reflect upon what might be the long range price of the day’s toil just as long as “the job gets done.” Without the comparatively slower and more seasoned rhythms of academic and personal reflection, the process of research, too uncritically enamored of the industrial model, can become like a fast food factory where important and substantive areas are disregarded because there is no time to entertain such questions. Yet it is precisely at these very moments and junctures that time and questions are more important than ever.

In the Massachusetts experiments, the efforts were undoubtedly well intentioned. There is no evidence that any of those involved in the effort had intended in any way to harm the children or their guardians. The experiments must have been devised as having some noble end in the search for advancing generalizable knowledge. Yet in the search for that knowledge, common sense human factors were overlooked regarding the protection of extremely vulnerable populations of children whose life and dignity demanded, without question, special attention and care. Decisions were made at a period of history when precisely the same postures were condemned at Nuremberg as medical atrocities and crimes against humanity. Somehow the swift advance for research answers and the assumption that “American” professionals “would never do such things” kept truly important questions from being asked and critical foundations from emerging.

In the contemporary scene, United States society has been and continues to be confronted by various instances of horrifically unethical human subjects research where human dignity and the rights of individuals and groups have been undermined or even
violated. The PHS syphilis study perpetrated on African American men of Tuskegee, Alabama, has given rise to an enduring and powerful legacy stemming from the 1997 Presidential Apology. This legacy is woven with critical importance into the fabric of the apology’s foundation of the National Center for Bioethics in Research and Health Care at Tuskegee University. The “Tuskegee Legacy” is, to paraphrase the Presidential Apology, a reality that we can never forget. (Katz and Warren, 2011). The case of the 1946-48 experiments in Guatemala eventually gave rise to the monumental December 2011 report of the Presidential Commission on Bioethical Issues. Of particular importance in that document is the clear understanding that the protection of the rights and welfare of human research participants is not just a matter of compliance with regulations or requirements. The Presidential Commission report balances the need for compliance with an overarching necessity for understanding and forming the individual and corporate conscience in synchronicity with the very ethical principles that are the groundwork from which regulations are developed. The Commission realized and strongly supported the awareness that ethical formation requires ethics education on all levels: undergraduate, graduate, and continuing professionalization. (Presidential Commission, 2011).

To achieve all of these high ends requires a sense of personal and professional balance for both individuals and institutional communities. The attainment of such goals must be a substantive effort led by those who have achieved both a cognitive grasp of content as well as a mature and prudent sense of the significance of the content of principles and regulations. Ancient cultures capture this well as an evolving and never-ending evolution from the attainment of sciencia (knowledge) to the entry into sapientia (wisdom). This also reflects the never-ending presence of those who embody maturity. It is into this scenario in our present time that the research administrator has a critical, indeed philosophical, role of specific leadership and challenge.

When an obsession for swift answers and results overcomes common sense values of protecting those who cannot defend themselves, it is the role of the research administrator to articulate the age old questions and wisdom on which the protection of human research subjects is founded, and without which industry is overcome by greed, power and the lust for notoriety and fame. Indeed, the research administrator as human subjects ethics advocate is one who dares to remind a world too often utilitarian that those who enroll in research protocols are not just statistics. Enrollees are more than just numbers or two dimensional names or sample donors. They are not generators of relative value units to be documented into electronic medical research records systems. They definitively are not “objects.” They are truly “subjects” in a sentence whose syntax and meaning are the combined energy of the industry and inquiry we call “research.” Like us, human research subjects also are a “self” and must be given the same protections we would give to ourselves and to our own children. For as Berdyaev would say of them and us:

_In the “self,” the act of knowledge and the object of knowledge . . . are one and the same. Human personality is not a ready-made object: man creates it especially in knowing himself (sic), for “self” is primarily an act._ (Berdyaev, 1962)
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Comparison of Stress-Related Factors in the 2007 and 2010 Research Administrator Stress Perception Surveys (RASPerS)

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Author’s Note
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Abstract
The 2007 Research Administrator Stress Perception Survey (RASPerS) surveyed over 600 research administrators the resadm-l listserve. The 2010 RASPerS surveyed over 1,100 research administrators. During this time, there was significant change in the research funding landscape with the end to the US National Institutes of Health budget doubling and the downturn in the economy. This study compares the responses of research administrators between 2007 and 2010 in relation to questions of perceived work stress, number of hours worked each week, work/family conflict, reporting to work when sick (sickness presenteeism), and feelings of appreciation for workplace contributions. This study finds significant differences between the responses from 2007 and 2010 for all factors. Perceived work stress, number of hours worked, work/family conflict, and sickness presenteeism were all significantly higher in 2010. Perceived feeling of appreciation and respect remains at a low percentage but it did rise substantially during this time frame from 3% to 14%.

Keywords: research administrators, research administration, research management, academic environment, job strain, occupational stress, sickness presenteeism, work-life balance, work-family conflict, employee appreciation, stress perception, overtime, workload
Introduction

The Research Administrator Stress Perception Surveys (RASPerS) were conducted in 2007 and 2010. During the interval between 2007 and 2010, there was significant change in the research funding landscape in the United States. This was partially due to the end of the U.S. National Institutes of Health budget doubling and the downturn in the U.S. economy. With decreased research funding and state dollars, many research institutions were forced to reduce staffing in research administration. Added to that, the American Recovery and Reinvestment Act (ARRA) created a need for rapid response to apply for grant dollars followed by extremely labor intensive reporting requirements for those applications that were funded. (National Research Council, 2012).

Despite the decreases in research support staff and increased administrative burden brought on by ARRA and other increased regulatory and reporting requirements, in a recent update to the Federal Demonstration Partnership (FDP), the administration burden to faculty has remained essentially unchanged between 2007 and 2012. (Schneider, 2012). 2010 RASPerS data show that almost 90% of the 1,047 research administrator survey participants report their jobs have become increasingly demanding over the past few years (see Figure 1).

![Figure 1: Data from the 2010 Research Administrators Stress Perception Survey show most respondents either agree or strongly agree their job has become more and more demanding over the past few years.](image-url)
Objectives

The purpose of this study is to compare the results of the 2007 and 2010 RASPerS to compare any differences in stress-related factors affecting the research administration community during this time period. Factors from the two studies to be compared include level of perceived work stress (PWS), working in excess of 40 hours per week, work/family life balance, reporting to work when sick, and feeling valued by colleagues.

Limitations

The 2007 RASPerS was a unique survey designed and validated specifically for use with the research administrator population. The 2010 RASPerS compiled several general population survey instruments which were selected to measure the same factors as those measured in the 2007 RASPerS. The general population survey instruments were validated for the research administration population. Thus while the questions in the two surveys were similar and measured the same factors, they were not identical. Selection of survey instruments for the 2010 RASPerS is described in more detail in Shambrook (2010).

Methods

Both RASPerS instruments were devised as web-based surveys to measure work place stress in an occupational group known as research administrators. This group is primarily comprised of highly educated women over the age of 40 working in the academic environment to support the funding and management of research. (Shambrook and Roberts, 2011). The survey was sent by email invitation with a hotlink to the actual survey. Both RASPerS instruments were validated by experienced research administrators. Both surveys were reviewed and approved by the appropriate institutional review boards of the investigator. (Shambrook and Brawman-Mintzer, 2007; Shambrook, 2010).

The 2007 RASPerS used an internet-based convenience sample of the membership of the resadm-l list serve. The list serve was estimated to have had about 2,000 participants at the time of the survey. There were 624 participants in the 2007 RASPerS. Detailed sampling and collection methodology for the 2007 RASPerS is previously described. (Shambrook & Brawman-Mintzer, 2007).

The 2010 RASPerS used an internet based cross-sectional survey from a closed population. The 2010 RASPerS was sent to the entire active membership database of the National Council of Research Administrators (NCURA). At the time of the survey there were 6,232 active members in the NCURA membership database. There were 1,188 that completed at least some portions of the survey. Detailed sampling and collection methodology for the 2010 RASPerS is previously described. (Shambrook, 2010).

Similar questions were selected from each survey to compare the five variables of interest for this study: 1) high perceived work stress; 2) routinely having to work over 40 hours per week; 3) work/family conflict; 4) reporting to work when sick; 5) feelings of appreciation at work.
Binary outcomes were observed for each question of 2007 and 2010 surveys respectively. Response rates for each question were estimated corresponding to years 2007 and 2010. The test for difference of proportions was done in StatXact 8 to explore if there was a significant change in how the questions were answered in year 2007 and 2010. Asymptotic 95% confidence intervals for difference of proportions between 2010 and 2007 were obtained from StatXact 8 using the method of Miettinen and Nurminen (1985).

**Results**

Table 1 shows estimated response rate, p-value and 95% CI for the difference of proportions between 2010 and 2007 for each question in survey. The 95% CI provides range for the difference in response rate of the two years for each question. As shown in Table 1, a statistically significant change has been observed between the 2007 and 2010 responses for all measured aspects of life at work. Each factor is further described below.

<table>
<thead>
<tr>
<th>Factors from 2007 &amp; 2010 RASPerS</th>
<th>Estimated Response Rate</th>
<th>P-value</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2007</td>
<td>2010</td>
<td></td>
</tr>
<tr>
<td>Perceived level of stress extremely high</td>
<td>0.162</td>
<td>0.226</td>
<td>0.0014</td>
</tr>
<tr>
<td>Adequate resources to work 40 hour work-week</td>
<td>0.292</td>
<td>0.245</td>
<td>0.032</td>
</tr>
<tr>
<td>Work/family life balance difficulties</td>
<td>0.450</td>
<td>0.569</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Workplace presenteeism (working when sick)</td>
<td>0.393</td>
<td>0.648</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Feel highly appreciated and respected at work</td>
<td>0.033</td>
<td>0.142</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

**Perceived Level of Stress**

As previously reported, (Shambrook and Brawman-Mintzer, 2007) the 2007 RASPerS respondents were asked to rate their level of stress on a four point Likert scale choosing from minimal, moderate, high and extremely high. The 2010 RASPerS used the Perceived Work Stress Scale (Mackie, Holahan, and Gottlieb, 2001) which had a similar question asking how often in the past month the respondents felt they had too much stress at work. A five point Likert scale was used with choices of never, almost never, sometimes, fairly often, and very often. (Shambrook, 2010).

Responses for both surveys showed a normal distribution bell curve with a higher tail toward the extremely high end. To clarify, most participants selected an answer somewhere in the middle, but a few selected responses indicating very high or very low stress. For the purpose of this study, those reporting the highest levels of stress were compared. In 2007, 101 (16.2%) of the 623 responses indicated they felt they experienced extremely high stress. In 2010, 246 (22.6%) of the 1,089 responses indicated they felt they very often had too much stress at work. This is a statistically significant increase. These data are shown in Figure 2.
By contrast, those reporting they experience minimal work-related stress in 2007 were 6.1% and those reporting they never felt they had too much stress at work were 1.7% in 2010. There were 7.8% who reported they almost never felt too much stress at work in 2010. Even combining both the responses of never and almost never gave only 9.5% of the 2010 respondents indicating they have low stress, less than half of the 22.6% indicating high stress at the opposite end of the bell curve.

Table 2: Descriptive data from the 2007 and 2010 RASPerS survey show more respondents report extremely high stress than those reporting extremely low stress in both reporting years.
40-Hour Work Week

The 2007 RASPerS data show that 177 of 599 respondents (29.6%) reported they had sufficient resources to routinely work < 40-hour per week. The 2010 RASPerS showed that 281 of 1,148 respondents (24.5%) reported they worked in excess of 40 hours most weeks. Most participants (662, 55%) reported they worked somewhere between 40 and 50 hours most weeks. There were 16.8% (193) reported they worked between 50 and 60 hours most weeks. Fifty-two respondents (3.7%) reported routinely working in excess of 60 hours most weeks.

There was a significant decrease in the number of respondents reporting that they are able to work 40 hours or less most weeks as shown in Figure 3.

Figure 3: The percentage of research administrators participating in RASPerS survey reporting they were able to maintain a usual work-week of 40 hours or less decreased by 5.2%.

Work/Family Conflict

The 2007 RASPerS participants were asked the following question: *In order to meet the demands of your job, do you feel you have frequently neglected your family or social relationships?* Six-hundred-and-three participants responded to the question. Of those, 44.9% (271) selected yes to this question. There were 34.2% (206) who selected no. An additional 20.9% selected “maybe, I’m not sure.”
The 2010 RASPerS used the work/family conflict scale (Netemeyer, Boles & McMurrian, 1996) to measure this factor. This scale measured agreement or disagreement with statements with a seven point Likert scale with three levels of disagreement, neutral, and three levels of agreement. The statement used from the 2010 RASPerS to compare with the 2007 RASPerS was the following: The demands of my work interfere with my home and family life. Fifty-six and nine tenths percent of the 2010 RASPerS respondents expressed agreement with that statement as shown in Figure 4. This indicates a statistically significant increase in work/family conflict between 2007 and 2010 for RASPerS respondents.

*Figure 4:* Research administrators reporting that work responsibilities interfere with their family responsibilities rose almost 12% between 2007 and 2010.

**Reporting to Work When Sick (Sickness Presenteeism)**

A scenario of predictive behavior was used in the 2007 RASPerS to determine the likelihood of their reporting to work when sick. This behavior is known as sickness presenteeism as defined by Aronsson, Gustafsson and Dallner (2000). In the 2007 RASPerS, participants were asked: If you had pneumonia during a major deadline, what would you most likely do? The choices from which they were to select and the percent of responses for each choice were as follows: 1) work through the deadline and rest afterward (34.4%); 2) work at home during the day and possibly come in at night (4.9%); 3) work at home (20.3%); 4) make arrangements for someone else to manage my desk, call me if needed, and stay home in bed.
(32.8%); and 5) expect colleagues to manage without me while I recover (7.6%). There were 607 responses to this question. As shown above 39.3% said they would either come into work as usual or work at home during the day and possibly come in at night. This does not include the 20.3% who said they would stay at home, but continue to work.

While the 2007 RASPPerS asked what research administrators predicted they would do when sick, the 2010 RASPPerS used the question developed by Aronsson and colleagues to ask what they had actually done in the immediate past. The question included in the 2010 RASPPerS is: Over the previous 12 months, have you gone to work despite feeling that you really should have taken sick leave due to your state of health? The responses from which the participants could choose and percentages of 1,093 participants were: 1) no, never (15.8%); 2) yes, once (19.4%); 3) yes, 2-5 times (46.3%); and 4) yes, more than 5 times (18.5%).

Following the methodology of the Aronsson study, those who indicated they had only exhibited sickness presenteeism behavior once in the past twelve months were grouped with those who indicated they never report to work when sick. Those reporting they had reported to work sick more than twice in the past year were grouped for the purpose of this study to compare with the 2007 RASPPerS group indicating they would report to work with pneumonia. Taken together there were 64.8% in the 2010 RASPPerS cohort who reported

![Figure 5: The percentage of research administrators indicating they routinely report to work when sick rose over 25% when comparing 2007 RASPPerS to 2010 RASPPerS data.](image-url)
they have reported to work when they felt they should have taken sick leave on two or more occasions over the past year. There was a significant increase in those who reported they did engage in sickness presenteeism in the 2010 RASPerS over those who said they anticipated they would engage in sickness presenteeism in the 2007 RASPerS (see Figure 5).

**Feelings of Respect or Appreciation**

With the increased responsibilities undertaken with the rise in reporting, greater competition in securing research funding, and decreases in staff support, this study wanted to see if more research administrators felt a strong sense of appreciation from those they support. The 2007 RASPerS asked participants to indicate if they felt their “non-administrative research colleagues appreciate [their] contributions to the research mission of [their] organization.” Only 3.3% reported they always felt appreciated. Conversely, only 3.5% reported they never felt appreciated.

The 2010 RASPerS used a scale that measures stress vulnerability called the Effort Reward Imbalance Scale. (Siegrist, 2004). One of the questions from that scale was selected to compare with the 2007 RASPerS question about appreciation. Participants were asked to strongly agree, agree, disagree or strongly disagree with the following statement: Considering all my efforts and achievements, I receive the respect and prestige I deserve at work. There were

![Figure 6: Percentage of research administrator participants reporting they feel appreciated and respected at work rose from 3% in 2007 to 14% in 2010.](image)
14.2% respondents who stated they strongly agreed with this statement. On the opposite end of the scale only 9.3% responded they strongly disagreed with the statement.

There was a significant increase in the percentage of those who strongly feel they are treated with appreciation and respect. There was also a significant rise in those who felt strongly that they were not appreciated and treated with respect (Figure 6). It is interesting to note, however, that there was a much greater increase in those who felt they had a more consistently positive experience (3.3% to 14.2%) than those who felt they had a more consistently negative experience (3.5% to 9.3%) related to appreciation and respect at work.

Overall, the 2010 RASPerS responses showed that 61.8% either agreed (47.6%) or strongly agreed (14.2%) with the statement and 38.2% either disagreed (28.9%) or strongly disagreed (9.3%) with the statement concerning respect at work.

Conclusions

Almost 90% of the respondents in the 2010 RASPerS reported their work had become more demanding over the past few years (Figure 1). Data comparison from the 2007 and 2010 RASPerS show that a higher percentage of research administrators are experiencing extremely high levels of perceived work stress (Figure 2). A lower percentage of research administrators have sufficient resources at work to enable them to routinely hold to a 40 hour work week (Figure 3). A greater percentage of research administrators are having difficulty maintaining work/life balance with their families (Figure 4) and many are routinely reporting to work when sick (Figure 5). This is somewhat counterbalanced by a higher percentage of research administrators reporting that they are feeling appreciated by their colleagues at work (Figure 6). All findings were statistically significant as shown in Table 1.

While work has become more demanding over the past few years for research administrators, this is accompanied by higher levels of perceived appreciation and respect by colleagues. Although the number expressing strong feelings of appreciation and respect at work has increased, the converse percentage, those reporting they do not feel appreciated remains very high at 38.15%.
Future Studies

As mentioned in the limitations of the study, questions used were similar but not identical. Stronger inferences, trends and validation of the current study could be made if future RASPPerS studies used identical questions from either or both the 2007 and 2010 RASPPerS.

In order to determine if the higher percentage levels of factors related to perceived work stress were unique to this period of time or the beginning of an upward trend, future surveys should be conducted in this population. Expanding the survey to include research administrators world-wide would allow for between country comparisons in order to better understand the extent of high perceived work stress in the global research administration community.

The development of strategies to raise the level of awareness concerning issues related to employee appreciation and stress resiliency in this population is greatly needed. Studies related to these issues may improve the overall work environment for this occupational group.

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References


Book Review

The Sound of a Wild Snail Eating
Elisabeth Tova Bailey (2010)

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Introduction

Elisabeth Tova Bailey has been suffering from an unnamed autoimmune disease for 20 years. The very act of having a telephone conversation with me as she did on June 5, 2012, requires her to lie flat in her bed and still depletes her energy. Through sheer will and a gift for narrative, however, she has written and published The Sound of a Wild Snail Eating, a beautiful book that simultaneously connects the reader with the natural world, the science of mollusks, and the world of one confined to her bed.

Among family, friends, and acquaintances, as well as patients in hospital and hospice care, I have witnessed hundreds of individuals who have succumbed to incurable illnesses. I’ve also come to know some who suffer from one or more of the 80 identified chronic and debilitating autoimmune disorders with no known etiology, such as multiple sclerosis (MS), lupus, or chronic fatigue syndrome (CFS). Daily life screeches to a halt; caregivers, hospital beds, and other medical equipment become necessary; food requires special preparation; activities of daily living depend on one or more assistants to fulfill; homes need to be reconfigured or abandoned altogether and exchanged for unfamiliar surroundings to accommodate disabilities. Family relationships are strained. Caregivers burn out. The spiritual life of the sufferer as well as family and friends can wither from the unceasing toll on the body and the relentless physical demands of caregiving.

As a spiritual caregiver I am constantly reminded that I am blessed and privileged to be at the bedside. There but for the grace of God go I. After all, I could be in that bed. I am moved by their suffering and the strength of will to live fully and with dignity every day they are gifted to wake up. They are my greatest teachers.
**Description**

During one of a number of years the author has been bedridden, a friend brought a pot of field violets and a snail to cheer her and placed it by her bedside. When Ms. Bailey discovered the snail was alive, the thought of being responsible for another living thing overwhelmed her. Yet as the days, weeks, and months passed, she grew to form a bond with the small creature and it became her teacher.

Living through seemingly endless hours every day, Ms. Bailey took to studying the habits of the *Neohelix albolabris*, the woodland snail residing under the violet's leaves in the terra-cotta pot. A lover of the natural world, a master gardener, and woman of great curiosity, Ms. Bailey was mesmerized by the habits she witnessed in the snail: from its diurnal sleeping to its nocturnal activities of locomotion and feeding. She first discovered evidence of the snail's having eaten when square holes appeared in an envelope near the flowerpot on her nightstand. Ms. Bailey, sensing the creature needed some real snail food, placed a shriveled flower in a dish then watched and listened, transfixed, as the snail crawled down the pot and chewed up her offering. She writes,

> The tiny intimate sound of the snail’s eating gave me a distinct feeling of companionship and shared space. It also pleased me that I could recycle the withered flowers by my bed to sustain a small creature in need. I might prefer my salad fresh, but the snail preferred its salad half-dead, for not once had it nibbled on the live violet plants that provided its sleeping shelter. One has to respect the preferences of another creature, no matter its size, and I did so gladly. (Pages 12-13)

Ms. Bailey had to leave her home, an old farmhouse surrounded by gardens and the wild woods, and move to an apartment close to her caregivers. She was homesick, and so developed a sense of kinship with the snail. Through the lens of her own limited mobility, Ms. Bailey gazed in awe and wonder at the poise and graceful movement of the snail.

> After being transported from the woods, the snail had emerged from its shell into the alien territory of my room, with no clue as to where it was or how it had arrived; the lack of vegetation and the desertlike surroundings must have seemed strange. The snail and I were both living in altered landscapes not of our choosing; I figured we shared a sense of loss and displacement. (Page 20)

Throughout the book, the author deftly weaves her personal journey with that of the snail, expounding on the metaphor of its structure, care, and feeding, and inspired by its curiosity and grace. Her fascination with the creature moves her to a broader inquiry into the world of mollusks. It is from this vantage point she interweaves the world of the incapacitated sufferer of an autoimmune disease with the history and culture of mollusks and their utility in research.

> The book, *The Sound of a Wild Snail Eating*, is being adapted into a 15-minute documentary film to convey the benefits and importance of biophilia (i.e. interspecies
connections) and the healthcare humanities. As Ms. Bailey examines the science of mollusks, she follows the natural route of comparing and contrasting the anatomical features of the *gastropod* (literally—“stomach-foot,” a mollusk with a singular muscular foot), from teeth to tentacles to slime, with human anatomy. As she says,

> Slime is the sticky essence of a gastropod’s soul, the medium for everything in its life: locomotion, defense, healing, courting, mating, and egg protection. Nearly one-third of my snail’s daily energy went into slime production. And rather than making a single batch of ‘all purpose slime,’ my snail had a species-specific recipe for each of these needs and for different parts of its body. It could adjust the ingredients, just as a good cook would, to meet a particular occasion. And in a catastrophic accident in which a snail is squashed, it can release a flood of lifesaving, medicinal mucus packed with antioxidants and regenerative properties. (Page 71)

> Could human mucus claim such marvelous attributes?

Ms. Bailey has spent two decades searching for an understanding of the illness that has befallen her. In studying the life of the snail, she wonders about the evolution of viral and bacterial pathogens, cellular DNA rearrangements, and DNA for other animal traits potentially buried in her own genetic code. She writes, “And how, I wondered, did the mysterious virus that had felled me change life inside the cells of my own body? Would there ever be a switch I could flip to instantly restore my health?” (Page 89)

Lest one imagine that the study of mollusks may be pedestrian, Ms. Bailey introduces each chapter with moving quotes from 18th, 19th, and 20th Century sources. In Part 4, The Cultural Life, she shares this from Oliver Goldsmith's *A History of the Earth and Animated Nature*, 1774:

> [Snails are] found to be furnished with the organs of life and sensation in tolerable perfection; they are defended with armor that is at once both light and strong; they are as active as their necessities require; and are possessed of appetites more poignant than those of [other] animals...In short, they are a fruitful industrious tribe...[They have their]...powers of escape and invasion; they have their pursuits and their entities. (Page 77)

**Applicability to Research Administration**

If only Ms. Bailey could herself possess life and sensation in tolerable perfection, defended with armor both light and strong. But if she were so physically endowed, we would not have her eloquent prose and advocacy for those suffering with chronic illness, a population NIH estimates to be 23.5 million and growing. Ms. Bailey says,

> People with chronic illness need to complain, to speak up and be heard in order to fuel the funding of research and support programs. It’s remarkable the number of nontraditional ways in which a patient can contribute to scientific research—for
instance just by the questions they ask in appointments. Those questions get the doctors and researchers thinking. (Phone Interview June 2012).

I, for one, am grateful the author has spoken with her strong voice on behalf of those with chronic illness. My own mother suffered from MS, beginning at my birth, and for 26 years until her death. She lost her vitality to the ravages of the disease early on, and was never able to complain. And I, growing up, knew no peer with a similar situation nor any doctor or scientist to whom I might complain about her situation and condition.

Ms. Bailey, while seeming to have a positive outlook in her prose, said this about her philosophy,

A positive attitude, if one is able to have one, does not preclude being assertive about the challenges, complications, management, and treatment needs of living with a chronic illness. I am a realist. I like to use humor in adversity if and when I am able to. I also stay very involved in many research studies.” What inspires her to keep going despite the illness? “Stubbornness,” she said, “but honestly, I don’t know. The book is doing wonderfully, but I would rather have had a joyful, healthy life. (Phone Interview June 2012)

The Sound of a Wild Snail Eating is being used for science instruction in the Loyola Blakefield High School curriculum, the Hawaii Children’s Science Books project gave it a double A rating, and it is being considered as a healing resource in hospice programs. It has been reviewed in a dozen professional medical journals including Literature and Medicine, The Journal of The Institute for the Medical Humanities, the Canadian Medical Association Journal, The Pharos, the journal of Alpha Omega Alpha Medical Honors Society, and Academic Medicine. The book is being used in the national hospital reading group program called “Literature & Medicine: Humanities at the Heart of Health Care,” and Bailey has presented at the University of Iowa Carver College of Medicine on the topic of “Biophilia and the Patient Environment and Palliative Care.”

The Sound of a Wild Snail Eating is a work that bridges the left and right brain, the worlds of thinking and sensing, of intellect and felt experience. It is a remarkable book written by a curious and courageous woman who tackles the challenge of living each day with purpose—to advocate for herself and others with autoimmune diseases and to find meaning and hope in the natural world. By sensing her journey, this text moves research executives, leaders, and administrators to reflect carefully upon what research really means to the human condition. And in such reflection, the leadership of research administrators makes a difference in the way that universities and institutions approach research itself, namely not just as a potential profit-making venture, but as a means to improving the human condition and saving lives.
The Formative Experience of Authorship: 
The Journal of Research Administration Review Process
as an Exemplar System of Academic and
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Abstract

Beginning in 2006, the leadership of the *Journal of Research Administration* initiated the development of a *de novo* four-stage system of publication review for submitting authors. Unprecedented in the experience of many, the system was predicated upon the general paradigm of mentorship. The mentoring experience behind the four-stage review process has been met with great success and has enhanced the publishing experience for all. While providing a viable means to ensuring responsible authorship and good publication practices, this mentoring system has emerged as uniquely formative of the academic and professional development of the profession of research administration itself and all of its allied arts and sciences.

*Keywords:* mentoring, authorship, publications, academic review, editing, peer review, academic scholarship, scholar formation, ethical formation

Introduction: Historical Backdrop

Over the last 70 or more years, research administration has evolved and matured into a distinct profession. Perhaps at one time, research administration was viewed as a necessary but secondary institutional service in universities, agencies, or institutions. However, the unfolding of the last decades has seen an exponential maturing of the field. Upon analysis, it would seem more than reasonable to assume that research administration’s growth and complexity have matured in proportion to the growth and complexity of research itself. Concomitantly, research administrators and leaders have come to see that the profession itself is an art and a science of extraordinary interdisciplinary character. Hence, when Kulakowski and Chronister edited one of the major works dedicated to the very nature of research administration and management, it was no wonder that the depth of their edited text clearly demonstrated the wide expanse of all the arts and sciences that interplay in the theoretical and practical aspects of the profession. (2006).

One of the rich complexities that has become evident about the profession, and which is inherent within the Kulakowski and Chronister work, is the academic and scholarly foundation of research administration. As in any other maturing field of service, there is always a native growth from a “doing” profession to also a “being” profession. Such is the natural progression of human development in persons as well as in professional and public life. As persons mature and develop, there is a growing sense of internal reflection that leads one to consider the meaning of things. Such reflection reaches deep into the human trait
of curiosity. It is the fundamentum in re of education, scholarship, and academic inquiry. Interestingly, this is also the very seedbed of research. In other words, research administrators are like all other professional leaders. They seek to know more that they might be more so that they might serve more and bring about the greater good for themselves, others and the world. Therefore, in the spirit of the work of so many developmentalists, research administration as a growing profession with its own art and science is itself always on the quest for self-understanding, as is any individual or any other human corporate entity. (Fowler, 1981).

While research administration is a professional activity, an academic and theoretical base is one of the major energies for the profession and its ongoing development. The scholar or academic foundations of the profession are critical for the profession to remain supple enough to meet future new and unforeseen needs of the research enterprise. Such unforeseen needs are not confined to any one discipline. Research administration must be as ready to serve the leadership and management needs of the humanities as well as the biomedical, physical and socio-behavioral sciences. What then might be a deep and abiding resource to assist the academic or scholarly foundations of research administration as an art, a science, and an ever-expanding profession?

In 2006, the leadership of the Journal of Research Administration began to engage in a series of reflective discussions to ascertain how the Journal itself might serve best the future needs of the profession. The leadership remains ever appreciative of the enormous growth and development of the publication within the expanding international community -- not only the Society of Research Administrators International (the publisher) but also the profession itself and its members around the globe. It was clear to the leadership then that the Journal’s maturity was entering into a new evolutionary period where members of the profession were increasingly and with greater complexity called upon to serve and promote the cause of research that was itself growing ever more integral, integrated, interdisciplinary, and international. (Gabriele, 2012).

Certainly, the profession was already being enriched by any number of publications, both professional and trade. However, the leadership saw the need for a new level of inquiry that would address and promote the academic and scholarly reflection needs of the profession. In fact, the leadership was enthusiastic about promoting “research on research administration” as a means of expanding and assisting the intense services that members of the profession on all levels provide to their researchers and the communities or institutions they serve. Based upon these reflections, the Journal’s executives became committed to developing and expanding the Journal’s academic and scholarly profile. They further became committed to founding a new form of publication reviews for authors. The desire in this was to create a form of academic review that ensured the quality maturation of submitted manuscripts while intentionally combatting any sense of “inquisitional judgment” or academic arrogance that many researchers and academics themselves find highly problematic and counterproductive to scholarship. Of particular importance in this effort was a commitment to maintaining and promoting the highest standards of academic and professional excellence within a collegial process of enrichment and quality scholar
development. Roberts and Shambrook address this inherent need for an unquestioned commitment to academic excellence as a collegial activity that invites authors into a process of continual deepening. (2012). They expertly reflect on the traditional importance of peer review, but as a positive experience for individuals as well as for the scholar and professional community per se.

In the final analysis, the *Journal* executives, with all the members of the *Journal* Executive Board, developed over the next several years a process of publication reviews that would assist the maturing of mission-relevant manuscripts in line with the highest principles of academic and professional development. These processes would also clearly uphold the highest principles of peer review and responsible publication articulated so well in academia. (Kalichman & Plemmons, 1999-2010), and as required by various leading government agencies. (Office of Research Integrity, 2012a; ORI, 2012b). Yet to do all of this well, there was a need to adopt an enriching metaphor that would capture the spirit of author-development as a positive and growthful phenomenon. Ultimately, this was found in the concept of mentoring as it originally developed in history and as it continues to have critical importance today in many fields and professions. The leadership was completely aware that this metaphor of mentoring for authorship would require the immense talents and gifts of generous members of the profession in all of the areas relevant to research administration as well as its allied arts and sciences. It would require the highest level of academic depth as well as editing excellence. And, given the nature of our times, it would require the generosity of such subject matter experts to serve as members of an expanding editorial board on a pro bono basis. Six years later, the success of founding such a board is well established. Its work in developing an unprecedented and never before realized process of mentoring for authorship is equally well known and celebrated, and stands now on the threshold of new development and service into the future.

The Journal Editorial Board

Over time, the *Journal* leadership formed the needed executive board whose members would provide the needed authorship mentoring experience. In the first instance, the leadership gradually articulated a four-stage system of publication reviews. These four stages would provide for initial mission relevance and commitment, academic analysis, editorial quality, and final certification. These four stages are discussed in the section to follow. However, the leadership was well aware that the success of each stage required the generous service of individuals whose subject matter expertise was clear. To this end, the *Journal* leadership formed over time four bodies that would provide for the *Journal’s* administration needs as well as the expertise needed for the four stages of publication review being discussed.

The first of these bodies was the Journal Executive Leadership itself. This was comprised of the Editor, the Senior Associate Editor, the Chairs of each subject matter expert board, and the administrative arm of the *Journal* that was responsible for its sound management, including financial stewardship, communications, development, public
relations, and relationship within SRA International and its governance. However, all of the executives (including administrative support) were called upon to help in the ongoing maturation of the Journal, its mission, and its success.

Secondly, the Journal leadership shaped the Associate Editors as a distinct leadership board. Chaired by the Senior Associate Editor, the Associate Editors Board is comprised to this day by anywhere from six to twelve or more senior leaders and subject matter experts in the profession and in their area of scholarship. Associate Editors are required to hold a doctorate or the terminal degree in their field of expertise from an accredited institution of higher learning. Each is required to have a record of publication and academic presentations. They also need to be individuals whose senior status in the profession and its allied arts and sciences is well known and respected. Each Associate Editor must have a level of professional maturity that would allow them to be able to evaluate the long term significance of candidate manuscripts for the profession and its ongoing development. As detailed in the next section, the Associate Editors Board is responsible for both the first and final stages of publication review.

Thirdly, an Academic Review Board (formerly, Journal Review Board) was shaped to provide for the academic analysis of individual candidate manuscript subject matter. The board itself is a large body of degreed and/or certified subject matter experts from various institutions around the globe. The board’s members represent the arts and sciences associated with research administration, management and leadership. Of particular importance is the senior level ability of board members to provide for insightful analysis, critique, and quality improvement for publication content. Of further importance is that board members are able to provide for such analysis and insight in a manner that is neither destructive nor personally derogatory to authors themselves. To this end, board members must have a distinct sense of personal maturity and wisdom in addition to subject matter expertise. The Academic Review Board is chaired by one individual who possesses the natural leadership in all of these qualities as well as the management ability to ensure that board reviews are done supremely well and in a reasonable amount of time.

Fourthly, the Journal leadership shaped a Manuscript Editorial Board. The members of this large board are required to possess the highest possible technical expertise in editing in accordance with the Journal’s compositional requirements that are, themselves, based upon the latest APA style directions. A senior editorial expert who possesses the requisite knowledge, skills and abilities with a proven record of editing excellence, chairs the board. While the board members and their reviews focus upon technical compliance, they are also empowered to work with individual authors for quality improvement of writing techniques and skills to improve content delivery, the shaping of text for better comprehension, and the best possible scholarly presentation of the subject matter at hand.

All of the Journal Editorial Board’s bodies and members are designed to work as a synergistic whole. As detailed in the sections to follow, each of the stages that board members enact builds upon another. Each succeeding board looks back to what was required in the previous stage to ensure that requirements are met as directed. Under the leadership
of their respective Chairs, the individual boards work to ensure that each stage of review is accomplished directly with authors, not only to ensure the completion of requirements but also to ensure that authors understand and appreciate the guidance that has been given. In this sense, the formative spirit underneath all board reviews and services is clearly educational. All reviews are meant not only to assist authors with the qualitative maturation of their specific manuscripts, but to provide collegial assistance for future works as well. The services provided by board members not only serve first time or newer authors, but also those who have longer tenures in academic and professional publication. Ultimately, the process of learning and improvement is just that --- a process. Like learning itself, it is a never-ending, continual life experience. Ultimately, another goal that has been shaped by the Journal leaders is for all board members themselves to learn as much from the authors they serve as the authors will learn from them.

The Four-Stage Publication Review Process:
Concept, Content, Composition, and Certification

The Journal Editorial Board performs its authorship reviews in the four stages described below. The entire process is chaired and overseen by the Editor and assisted by the Senior Associate Editor. As stated above, each stage builds upon the previous one, ensuring that requirements directed from the previous stage are completed. Thus the Chairs of each board work with each other as a comprehensive whole to achieve a level of expert synergy. Of particular importance, save for the initial receipt and review of any manuscript, the Editor essentially recuses himself/herself from the process. This recusal avoids, as much as possible, any sense of favoritism, bias, or conflict of interest. At the end of the process, however, the Editor retains the right of possible delay or refusal to approve for publication. This right, while never having been exercised to date, is retained for the interest of greater concerns or circumstances.

The following are brief descriptions of the four stages.

Stage 1: Concept Review

Authors are permitted to submit initially a full draft manuscript, or a one- to two-page proposal for a manuscript. Either is acceptable. All submissions are sent to the Editor. The Editor makes a prudential judgment as to whether there would be a reasonable applicability of the proposed topic or initial draft content for eventual publication in a future edition of the Journal. This judgment is usually made in concurrence with the Senior Associate Editor. Both the Editor and Senior Associate Editor, including Intellectual Property Counsel if necessary, review the text for any regulatory requirements such as human or animal research approvals. If applicability and interest are present and no regulatory non-compliance issues are found, the Editor then sends the submission to the Senior Associate Editor for initial assessment by the Associate Editors Board. The Senior Associate Editor leads this Stage 1 review, which is performed by any number of Associate Editors who determine if the proposal or draft is relevant to the mission of the Journal and applicable to the profession and its allied arts and sciences. The Associate Editors further assess the
academic and professional depth of the submission’s potential. This stage is clearly central to maintaining the Journal’s academic nature. Associate Editors normally will provide comments and recommendations. These are anonymized and shaped in language that is helpful for prospective authors. If mission relevance and applicability of content are determined, the Senior Associate Editor advises the Editor, who then conveys to the author any comments or recommendations from the board. Likewise, if a submission were not felt to be content relevant, the Editor advises the author accordingly. Presuming acceptability, the Editor then informs the author of final compositional requirements in accordance with Journal and APA standards. Authors then must submit a final full manuscript to the Editor for the beginning of Stage 2 review. However, a final point must be made. It is at Stage 1 that the Journal’s leadership makes the commitment to the author for publication of the final work. It is a commitment to engaging with the author in a journey of quality improvement. The next stages are never conducted as a type of “thumbs up” or “thumbs down” activity. In fact, it is at Stage 1 that all members of the boards make a commitment to publishing the work barring the unforeseen or barring the decision by an author to detach from the process. It is also at this point that the Journal clearly will not engage any proposal or draft that is being submitted to any other entity for publication. Stage 1 content review is a stage of honored mutual commitment.

Stage 2: Content Review

The respective first author of an acceptable proposed submission now has the responsibility for shaping the text in accordance with all Stage 1 requirements. This includes shaping the final draft of the manuscript in near picture-perfect compliance with all Journal Author Guidelines per APA style. When all has been accomplished, the author sends the final draft directly to the Editor. The Editor, while copying all leaders, sends the draft to the Chair of the Academic Review Board for content review. The Chair assigns the text to any number of board members whose areas of expertise are aligned with the subject matter of the draft. The Chair provides reviewers with the standard review form and details appropriate timeline requirements. Unless a reviewer were to agree, authors are never told who provides the review. (Note: Some authors have suggested that future academic reviews be done as a double-blind experience where reviewers are not aware of the identity of the authors either. This is an important suggestion that is being evaluated for the future.) However, above all, the Chair guides Stage 2 review to avoid at all costs any engagement of practices and attitudes in peer review that have been excoriated by scholars and authors over time. This includes any type of “inquisitional judgment” or “academic arrogance” wherein a reviewer’s intentionality is mired by a desire for power rather than collegial assistance. In fact, over time it has been decided to eliminate the categories of “accept” or “reject” from reviewer forms. Academic review of content is clearly part of the scholarly and professional journey process. There is no room for arrogance or power. However, academic reviewers must be honest, forthright, and clear about needs for improvement before a text can be recommended to the Editor as ready for possible publication. Ultimately, academic reviewers must be persons of professional and mature balance. They can never sacrifice the highest standards of academic excellence. Yet, the commitment to academic excellence must be provided in a way that is collegial and understanding of the authors. Authors likewise must have the maturity to accept all revisions
for the sake of quality improvement. In the spirit of providing an enhanced publishing experience and mentorship, Stage 2 review often provides authors with both “required” and “suggested” revisions. Required revisions would include obvious editorial revisions such as not adhering to the author guideline format or not addressing revisions directed during Stage 1 review. Suggested revisions simply provide the author with thought provoking ideas that may provide clarification or offer a different perspective that could be helpful in improving the final publication. The author is empowered to determine whether or not to accept suggested revisions. When Stage 2 reviews are complete, the Chair works directly with the author to make all required changes. When such changes have been made, the newly revised draft is sent back to the Chair, who forwards a copy to the Editor and to the Manuscript Editorial Board for Stage 3. The Chair communicates what has been accomplished to date from academic review requirements.

Stage 3: Composition Review

The Chair of the Manuscript Editorial Board assigns the newly received draft to one or more members of the board. Members provide their expertise on a rotating basis and as available. The Chair leads the board in the critique of the text in light of Author Guidelines that are themselves in accordance with APA standards. Such standards are adapted for Journal purposes. The Guidelines are updated by the Chair of the Manuscript Editorial Board and then approved by the Editor and leadership. This updating process is performed every other year or more frequently as needed. For manuscripts received, board members and the Chair work directly with authors to help ensure that expected norms are followed. They also work with authors to make important improvements to the style, readability, and compositional refinement of the overall text. Authors work back and forth with board members either directly or via the Chair. In the end, the Chair works with the author directly to ensure that all requirements have been met, and that all suggestions for improvement are made. Of particular importance is the collegial assistance that the board and the Chair provide for international authors when English may not be the authors’ first language. International editing requires an immense amount of skill and technical expertise. For the Journal this is particularly important, as it is published only in English. American English is normative, but other standards are acceptable. More deeply, however, board members are clearly advised that any form of international “second class citizen” bias is unacceptable. Engagement of such less-than-acceptable attitudes would result in an individual’s no longer being a member of the board itself. To date, this has never been in evidence at any time in Journal reviews. Clearly, board members embody the highest ethical respect for authors of all nations and cultures who look to the Journal as the forum in which they entrust their scholarship. Once editing is complete, the Chair sends the final draft to the Editor noting that it is now certified and ready for potential publication.

Stage 4: Certification and Finalization

Having received the final manuscript edition as certified and ready for potential publication, the Editor forwards the text to the Senior Associate Editor, who asks one or more members of the Associate Editors Board to provide a final quality assurance review.
Those Associate Editors who had performed the first stage are not always involved in this fourth stage. Regardless of who performs this final stage, the respective Associate Editor(s) is/are apprised generally of what has transpired to date. They communicate their final assessment back to the Senior Associate Editor. If there were any final items still needing to be addressed, the Senior Associate Editor works directly with the author. The Editor is apprised of these final issues also. Presuming there are no final issues (or when such are completed), the Senior Associate Editor sends the final text to the Editor with recommendation for final approval. Barring the unforeseen or any larger mitigating circumstances, the Editor writes to the author(s) formally to indicate final approval and notification that the manuscript will appear in a future edition of the *Journal*. All authors/co-authors then complete Author Agreements and provide brief author biosketches. A copy of the text is then saved for forwarding to the publishing house for the edition of the *Journal* in which it will appear.

These are the four stages of review required of each submission to the *Journal of Research Administration*. Many have cited the uniqueness of this system. Many have cited the entire process as immensely helpful for author development and continual improvement for publication practices. By and large, the experience has been cited as growthful, wise and collegial. Yet upon reflection, it is clear that the system is predicated upon an internal, rather subliminal foundation centered upon a set of experiences that the authors of this article have found quintessentially vital to their own development as scholars, professionals and growing persons serving the public trust. This foundation is best expressed in a living metaphor, namely mentoring. It is to that paradigmatic metaphor that our attention necessarily is now drawn.

**A Metaphor for Publication Review Excellence: Mentoring for Authorship**

As evidenced in history, authorship and publication are essential to academic life, scholarship, and to the development of the professions. They are one of the clearest markers used for certifying growth in a particular field, especially in academic life. Publications are nearly always used in universities for determinations regarding faculty tenure or promotion. Authorship and publication advance the common good and the public trust, and are central to the processes of innovation and discovery.

In recent time, problems have emerged with plagiarism, falsification and fabrication in the publication of research. Termed commonly as “research misconduct,” these egregious activities undermine the highest caliber of academic inquiry and human discovery, and have potential for harming individuals and society itself. There is no need then to understand why various agencies of the United States Government have enacted regulatory requirements, investigational procedures, and potential sanctions for those who would violate the central commitment of academic publication to public truth. A review of such regulations (e.g. 42 CFR 50 & 93, and 45 CFR 689) reveals the immense seriousness with which these matters are and should be taken. However, such regulations only address one particular part of the reality at hand. Regulations are intentionally aimed at preventing or dealing with the worst
that can happen. Yet, common sense dictates that something larger is needed. Indeed, in the search for preventing the worst one must promote the best. Something more is needed.

Over the last several decades, there has been an increasingly important movement to have scholars of all fields and disciplines be committed to a deep sense of ethics. In research, this is often termed “research integrity” or, alternatively, adherence to the standards for the “responsible conduct of research.” This area is itself an advancing body of knowledge and expertise. In part due to immediate needs in the physical and biomedical sciences, research on research integrity has developed exponentially over time. Such inquiry has led to an ever-deeper understanding of research integrity as a positive force that impacts individuals and institutions on both the personal and professional levels. (Institute of Medicine, 2002). This in turn has created a positive appreciation for the development of new understandings of integrity and depth in all forms of academic scholarship and professional development.

But how are such depths reached effectively and for the long term? How does one dig deeper than regulatory formalism and compliance? Clearly, responsible authorship and sound publication practices are integral to sound academic and professional development. Their impact on so many levels is unquestioned. Yet does one inculcate responsible authorship and sound publication practices by only providing compliance lists or author requirements? Are truly gifted authors developed because of the development of behavioral rules? (Atkinson & Butler, 2012).

It is clear that something far deeper is required to educate authors and to help them to grow in the contributions they can make to their fields of inquiry and service. Such is important for all authors -- whether seasoned and mature or much newer to the experience. The “something deeper” that is clearly required is to approach authorship assistance and qualitative improvement under the concept of mentoring as a type of metaphor or paradigm.

Metaphors and paradigms are not things. They cannot be reified. They are, in fact, living experiences into which one enters. For those who have dived deeply into these experiences one knows that change always occurs. Metaphors and paradigms are portals through which one enters into profound experiences that confirm one’s personhood and talents, bolster and refine those things that need revision, and catapult one’s talent and self into the quantum leap of unprecedented horizons. Mentoring is, in fact, a living metaphor. It is the paradigm for the growth and development required for true scholarship, academic life, and professional service. However, it is important to understand what mentoring is and what it is not.

There is a bias among some areas that mentorship is the same as apprenticeship. In some respects, that is perhaps true. In others, not so. In some ways, in the ancient world apprentices were taught to imitate the technical skills of their masters. They were meant to learn a trade and to learn it extremely well. In this way, they carried on the service of excellence and the solid development of products out of a particular guild. Yet the apprentice may not have been led to discover and innovate necessarily. Mentoring is different
substantially. Additionally, it might be well to imagine something more. In our own time, mentoring is too often identified with supervision or academic advisement. There is no question that students and/or laboratory personnel need the highest quality instruction and assistance to learn the science and earn their degrees. Yet where does the student or technician necessarily become more versed in the professional codes and aspirations of academic life or research laboratory practices? Just as in the case of the apprentice, something more is needed.

All of us are well aware that mentoring has its origins in the literature of ancient Greece. Athena assumes the identity of the old teacher, Mentor, to guide and assist the young Telemachus during the absence of his father Odysseus. To mentor is to guide and to shape; to form the character and knowledge and abilities of another. Using another example from classic literature, mentoring is much like the experience of Dante in the Inferno. Dante enters into the experience of the Inferno and eventually is guided by Virgil. Dante is assisted in a journey that is truly his own. It belongs to no one else. Yet someone else who has traveled the path before him guides him, in all ways. The mentor is one who has successfully accomplished the journey and now assists one in the process. Mentoring is a mutual activity. It is always deeply impactful. It seeks to provide guidance based upon experience. Hopefully, it is accomplished in a mutually respectful manner. And in the end result, the mentor lets go and the one being guided owns the journey in the self.

In academic life and professional development, mentoring is essential to the formation of scholars. Historically, this has always been so. In contemporary society, the light speed of modern life requires with a sense of urgency the development of systems of careful reflection and evaluation that promote personal and professional growth. It is understandable, then, that the world of academic graduate study has called for a new and re-imagined sense of mentorship for students. (Walker, Golde, Jones, Bueschel, & Hutchings, 2008).

However, contemporary appreciation for mentoring is not confined by any means only to graduate studies. Mentoring is a living process of formation that is personal, social, cultural, and professional. It has great importance as a life-long experience for any and all persons in their professional lives. It is complex; and, as many philosophers would term it, it is “many meaning-ed.” It has many sides and many ways of being engaged. Recently, the first author of this article provided a lecture to new doctoral students on the concept of scholar formation. (Gabriele, 2012). The students were presented with what were termed the four domains of scholar formation. These may be helpful for understanding the interactive processes of mentoring. The domains are found on page 138 in Figure 1.

The domains are clearly shaped for graduate students. However, they are easily adapted for professionals and academics at any level and in any form of service or leadership. Individuals come to know an ever expanding and ever mutual interplay of the natural human experiences of discovery and curiosity. At the same time, a person is always in the process of character formation. These are very deep below ground realities that are part of our subliminal experience. They are most often subconscious. However, they erupt into the ways that we think, study, and engage in professional life and service. In turn, what we engage
academically and professionally impacts our human nature and our subconscious drives. All four domains are therefore interactive and develop over time. Ultimately, they together form a living experience in which character and values are developed as is often discussed in the research regarding positive psychology. (Peterson & Seligman, 2004).

For authors, these domains are clearly rich resources for understanding the “reviewer-relationship” of the Journal’s four-stage publication system. In ways that are adapted to each author and each instance, board members interact with authors to promote their sense of discovery and innovation, inculcate and promote the highest standards of academic and professional character, instill solid academic inquiry, and ultimately ensure that articles to be published result in works that make a clear and powerful contribution to the specific content topics, to the professional development of research administrators, and to the unending academic depth of the profession itself and all of its allied arts and sciences. When authors begin the journey into the Journal’s processes, they are joined by any number of “Virgils” who seek to guide and serve the needs of the author’s scholarship. They do so in the spirit of the formative character of mentoring as a process that truly is hammered out for all individuals over time, whether in one’s personal life or in one’s professional service. Ultimately, this impacts individuals and the professional community now and into the future.

The mentoring of authors in the Journal system is not just a familiar activity among persons of good will. It is a professional dedication that is required for the challenge of deepening the authenticity of authorship itself and the authentic viability of the profession of research administration. It is hoped that this system of mentoring can help to deepen the
profession of research administration as a community of service whose body of knowledge is itself ever growing for a community of scholars and professional leaders. To instill this requires far more than mere rudimentary “training.” It requires that mentorship for authors be truly an act of education. But might there be a price for engaging in this metaphor? If so, might the cost affect both authors as well as those who are called to be their mentors and guides on the journey to excellence in authorship?

**Conclusion:**

**The Experience of Companionship**

This article has been dedicated to a description and value of the unique four-stage process of publication review used by the *Journal of Research Administration*. Yet this article has gone far deeper than simple description. It has engaged in a more telling portrayal of the rich foundations upon which these processes are based. The *Journal’s* review processes have been conceived and implemented as a form of mentoring for authors both seasoned as well as new to the experience of publication. The purpose of this system has been to aid, enhance and enrich the processes of discovery, inquiry and academic scholarship relevant to the profession of research administration and all of its allied arts and sciences. Mentoring of this caliber, as discussed previously, is not a simple process. It is an experience into which individuals enter and in which individuals will necessarily face the experience of change. Sometimes change is welcome. Sometimes it is greatly uncomfortable. Yet, change is a constant necessary for personal and professional deepening.

Entering into the experience or metaphor of mentoring has its price for the protégé as well as the mentor. History attests to that clearly. In publishing and authorship, many individuals have cited review experiences that are less than palatable. Some recount experiences that are far less than fruitful or helpful. Some of these experiences are recalled as times in which one has suffered at the hands of arrogance, or pride, or even personal degradation. Such negative experiences are not mentoring. They also have no place in academic and professional life. There is, therefore, on the part of mentors or reviewers a need to resign the temptation to power and self-aggrandizement. There is also a need for authors to put aside resistance to revision and correction. Such resignation on the part of both also requires an alternative image or paradigm. Such might be found in the meaning of “companionship.”

In the preceding pages, the literary example of Dante and Virgil was cited. Virgil accompanies Dante on at least part of his journey into his inferno. The image is one very familiar to many of us. We all know the need for and have been assisted greatly by those who seem to be there to provide us with whatever are our needs at the moment. Such persons truly are our companions on whatever journey it is we are taking. But how is companionship, notably a mutual experience, understood?

Companion is an intriguing word. It comes from the Latin word, “*panis,*” meaning “bread.” The companion is one who shares your bread. Sometimes the bread might be stale
or even tainted. We hope that most times it is a delight to the palate. Regardless of the condition of the bread itself, the companion is ever faithful to its breaking, to its sharing, to its potential for nourishment. And in that fidelity there is delight. In short, one’s companion is one’s “bread-friend.” Mentors and protégés are bread-friends. Mentors and mentees work together for the delight of eventual success and discovery that is ever before them, even if it be stale or imperfect. The real commitment is learning to be called to the table to share the bread – and not to withdraw in fear when the moment may be difficult. Such is the reality that ensures growth and development for the mentor and the protégé. In terms of the Journal, such is a rich image by which authors and reviewers learn to engage with each other. And in the end, what results is not just the delight over an individual publication. What results is the delight of an entire profession to renew its members for the service of research and the service of the public trust. Such is what we research administrators do every time we are called to the table of our profession, called to assist one another that we might serve others well.

A few years ago, a small senior college class at a rural college was meeting. Spring break was near. It was a film study class, an elective. Often, they would meet in one of the student lounge areas for food and film. One evening, the film was the classic, “Moonstruck.” As the film reached a particular point, one of the students turned around and looked at the professor who was of Italian descent. This student had never been to “a big city.” He also had never encountered persons of Italian extraction. He uttered a loud “harumph.” All looked at him as he said to the professor: “Oh you Eye-talians. Do you always do everything around a table?” The smiles and laughter were loud and wonderful. Perhaps the image is one that helps us understand the process of mentoring at the heart of the Journal’s review processes. More deeply than that, perhaps it helps us to understand who we are and what we are called to be as servants of the community of inquiry we call research.

“Oh you research administrators.
Do you always do everything around a table of companionship?”

We certainly hope so!
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Voice of Experience

Toward a Truly “Next” Generation

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Author’s Note

Voice of Experience is a celebrated feature column in each edition of the Journal of Research Administration. It advances the Journal’s academic and professional tradition of service by fostering consideration of and reflection upon contemporary issues and concerns in research administration. In this issue, J. Michael Slocum, the Journal’s Intellectual Property Counsel, brings together a number of senior academy leaders to reflect upon the future of research, and the future of research administration leadership as a profession. The reflections that follow challenge the reader to consider the crossroads at which research administration is standing. Where have we come from? Where are we today? What are the horizons before us? What challenges do we need to face to succeed and advance our service on behalf of human society?

Facing An Uncertain Future

It is the business of the future to be dangerous; and it is among the merits of science that it equips the future for its duties.

Science and the Modern World: 1925 Lowell Lectures
-----Alfred North Whitehead

The profession of research administration, like many others, is rapidly evolving. The characteristics that define the profession – such as what professionals need to do, and what they need to know – are much different now than they were just a few years ago.

For better or worse, the die will be cast for the profession by those who have a strong interest and stake in what it will look like. Those who hold leadership positions in research administration and management are probably best positioned to envision what the profession will look like in the future. Because of this, I have asked several of the “old hands”
in research administration to predict the future, and to tell us what they see for the coming years in research administration. To guide this, I initially asked them to think about:

1. Developments in the economics, structure, and operational practices of research administration organizations;

2. Changes in the “curriculum” and educational path for new and mid-level research administrators;

3. The pressures on research administrators and managers seeking to find balance between their professional and personal lives; and,

4. The implications of technology on the profession.

Given the inherent difficulty in predicting the future with certainty, I asked my respondents to identify any particularly important current trends that are driving change. Understanding these trends may provide insights into the probable future in various areas of the profession and enable us to manage change as it unfolds. I also asked them to frame their reflections for us in light of the following three factors.

**Economic Situation**

Almost all institutions are seeking more efficient services, predictable costs, and increased responsiveness to the needs of principal investigators, sponsors, and the public. They are often willing to make dramatic changes in a research administration office or activity if they are not satisfied with the services they receive.

The economic downturn of the past few years has produced considerable economic fallout, including lower revenue, reduced hiring, more downsizing, and greater internal reorganization. As the economy recovers, it is apparent that the profession, and research in general, will not return to business as usual; and that to be successful in the post-recession era, research managers may well need to engage in long-term restructuring to maintain sustainability and meet increasingly complex demands. Research executives and managers also will need to rethink the model and methodology of educating and training members of the profession to deliver services in the evolving research environment.

Research institutions that do not understand and address these changes will have difficulty surviving in a world of “translational” research, rapid movement from basic science to commercialization, and a constant tension between open science and profit-driven innovation. Research institutions and their management will need to think more strategically, manage more effectively, and strive to be more results-centered than they have been in the past.

**Technological Acceleration**

Technology is a driving force for many of the changes in research and research administration. Technology is a double-edged sword that helps professionals to work faster and more efficiently, yet enables them to work constantly. It permits them to find better
solutions to problems, yet increases the expectations of investigators, sponsors, and senior institutional managers; assists them to serve more effectively in supporting the research enterprise, but opens the door to more accelerating demands for more service and shorter response times. Technology has revolutionized research and research administration over the past few decades. All signs indicate that technology will continue to affect the way professionals are educated and how they provide their services to their organizations. Additionally, technology will change the traditional skills associated with the management of the research activity and how administrators interact with their investigators, sponsors and others.

Balance Between Professional and Personal Lives

Finally, as the pace and complexity of their jobs expands, sometimes seemingly in an exponential way, many in the profession are finding it increasingly challenging to balance professional responsibilities with personal priorities successfully. The lack of balance between personal and professional life can cause emotional exhaustion, depersonalization of relationships and work, reduced sense of accomplishment, and impaired job performance, and poor health. This challenge is likely only to increase as technology, the economy, and the sheer amount of knowledge required to function as a professional continues to grow.

The impending retirement of the Baby Boomers, coupled with that of the Veterans/Silent Generation partners who may have delayed their retirement, underscores the importance of considering balance between the professional and the personal. As has happened since time immemorial, the older generations criticize younger generations for a lack of work ethic and commitment to the workforce. The younger generations feel older generations do not respect their ideas, leaving them feeling discouraged and undervalued. Younger generations are focused on getting the job done, and not on the number of hours they work. They highly value balancing their professional and personal lives. They are goal orientated and use technology and multitasking to achieve their goals. This attitude is particularly evident in the so-called “Millennials,” who are often quite impatient with the “time-clock” approach to work and a career.

So Where Do We Go From Here?

In light of the economy, the acceleration of technology, and the changing concepts of work and personal life, just where is the research administration profession going? The following capture a bit of the visions of some of our “best and brightest.”

Jerry Fife:

Who better to predict the economic future than Jerry Fife, Vice Chancellor for Administration at Vanderbilt University. In his position he faces the daily challenges of assuring that a major research institution maintains its funding for the research mission as well as its educational programs. With characteristic understatement, he takes notice of the “fiscal cliff” as well as the other arduous features of the economic landscape facing research institutions. As he says, “The next ten years will continue to be challenging for research
administration. Given the federal deficit, the prospect of sequestration, shrinking state appropriations, pressure on tuition increases and reduced endowment payouts, support for research administration will remain relatively flat over the next decade like most other administrative areas within colleges and universities.

He feels that, given the challenges of the federal budget, federal research funding will remain relatively flat over the next decade. According to him, the days of doubling research budgets, as has been the pattern in the NIH budget, will not occur for the foreseeable future. He sees only additional competition for funding, with universities attempting to make up some of the shortfall through industry funding.

Mr. Fife also sees federal regulations increasing as the call for greater accountability continues. He notes that this is already being seen in areas such as conflict of interest and audit activity. Despite attempts to achieve simplification in effort reporting guidance, he does not believe that research institutions are likely to receive much relief in this area due to pressure from the audit community.

Does this mean that Mr. Fife is painting a picture of “no hope?” He demurs, asserting that, while research administrators will be challenged to do more with the same or less, those who will be successful in the coming decade will view this as a challenge and search for ways to complete needed tasks successfully, provide excellent service, and remain complaint with applicable regulations. This will include a constant assessment of all work, searching for efficiencies, and assessing organizational structures. He concludes that, in this environment, research administrators who meet these challenges have an opportunity to shine.

**Bobbe Nixon:**

Bobbe Nixon, from the University of Virginia, is well known for her long involvement with the Small Business Innovative Research and Small Business Technology Transfer programs, as well as with the development of collaborative science and education programs. She too is concerned with the effect of budget cuts on research and particularly on these technology innovation programs. She notes that with limited funding we are likely to see even more collaborative projects between departments, schools, universities and companies. Thus, the research administration component is going to become more complex even though the dollars will be less. One partial solution she identifies is the advent of new, easier-to-use agreements between the parties (both between the government and the recipients, as well as among the various collaborators).

She predicts that the sciences and engineering will take on a more important role because they can produce a sellable product on a large scale in comparison to the arts. She cites her own institution, the University of Virginia, which is going with a new financial model where the departments and schools keep the money they bring in in the form of tuition fees and other innovative mechanisms. These funds will grow the sciences and engineering more.
She also sees the development of more master’s programs and innovative programs, with a likely focus on “translational research.” Technology-centered concentrations, such as biomedical engineering, nano-medicine and the like, will continue to attract large numbers of the best students. Similarly, concepts or medical needs will even more quickly be translated into commercial products, (e.g. “puzzle casts” for broken arms which has pieces removed as the arm heals to reduce atrophy of muscle). Faculty will create more spin-off companies and increase their “entrepreneurial” spirit. Students too will engage in educational activities focused on entrepreneurial endeavors. Ms. Nixon sees even undergraduates beginning routinely to produce provisional patents. It may eventually become common for students regularly to begin their own companies before or soon after graduation.

Ms. Nixon notes the particular importance of the emergence of new ways to reach and teach huge numbers of people. The online course revolution where one outstanding faculty member can guide millions of students could become commonplace. This very interesting experiment being led by the top universities in the country could lead to a true academic paradigm shift. She sees a more “virtual” university, with less need for people to provide face-to-face management of services, including research administration.

Ms. Nixon also cites the continuing push for university boards to try to run universities more like companies. Programs, projects, and people may more frequently come and go at the whim of changing philosophies thus eroding the stability of the institution. Long term, established research programs may disappear based on the newest “fad” in technology or teaching philosophy. On the other hand, the more entrepreneurial faculty may increasingly take “their” program to another university.

The continued emphasis on increasing entrepreneurial activities is likely to change both the SBIR and STTR programs. Large, powerful organizations are diverting funds to more Venture Capital oriented companies. SBIR and STTR vehicles (grants and contracts) are getting larger which means fewer grants will be funded overall. In fact, the SBIR/STTR program may just disappear as Congress diverts funds to supporting defense, social programs, or health care. This type of innovation may be forced to rely on private funding – perhaps using the “crowd-funding” model that is being seen as a model for small commercial startup ideas.

David King:

David King, at the University of Louisville also is focused on the impact of technology on research and research administration, particularly as it affects clinical research activities. Many of the big areas to watch for the future of clinical research involve the use of emerging technologies and the use of existing technology in new ways. One of the most important areas of interest is the “big data” phenomenon. Data mining in the medical field will increase significantly. The use of electronic medical records in clinical research could see much more involvement from IT specialists and biostatisticians in looking at massive amounts of Personal Health Information (PHI) and insurance data – both to improve diagnosis and treatment options. Other areas research disciplines could be similarly affected.
Mr. King also highlights the potential for increased smartphone applications which will assist the physician as well as inform the patient in improving treatment based on analysis/formulas derived from data mining. For the research administrator or clinical trials manager, similar techniques using smartphone apps will be used to conduct informed consent for clinical research.

Mr. King identifies another development that may have even more impact on clinical practice and clinical research. With linkages to one’s own medical history, insurance coverage, and information sources on the internet, individual patients and “subjects” will be better able to assess costs and benefits of participating in a study. This would include knowledge about actual costs, such as co-pays, and the potential adverse reactions and competing treatments and studies available. Mr. King sees the increasing use of technology as an aid or replacement for reliance on the memory of healthcare providers, subjects themselves, and administrators. For instance, he predicts that “apps” will help identify pre-existing conditions or other exclusion criteria in the subject’s medical history using the subjects’ own equipment (tablet, phone, or some replacement for both). The same kind of technology will provide video, audio, and text information, in the subject’s language, to ensure understanding of the risks and benefits of participating in the study; and real-time documentation of the briefings provided by the provider or research coordinator.

Lynn Chronister:

One of the most respected members of the research administration and management profession is Lynn Chronister. Her career spans many institutions, many disciplines, and many accomplishments. She contributed the following, which needs no editorial comment.

“Alice asked the Cat ‘Would you tell me please, which way I ought to go from here?’ ‘That depends a good deal on where you want to get to,’ said the Cat. ‘I don’t much care where’ said Alice. ‘Then it doesn’t much matter which way you go,’ said the Cat. ‘—so long as I get somewhere,’ Alice added as an explanation. ‘Oh, you’re sure to do that,” said the Cat, “if you only walk long enough.’

—Lewis Carroll, Alice’s Adventures in Wonderland”

The question posed to me for this article was: “What is the future of research administration in the next decade from the perspective of a smaller research institution?” I feel a bit like Alice -- I am not sure we really know where we want to be as a profession but we know we are going to get somewhere!

Last month, I was at the University of Washington, one of the largest research universities in the world. Today I am Vice President for Research at the University of South Alabama, a Carnegie 2 research institution that is growing rapidly. Has my perspective on what is needed and where we are going changed? Emphatically -- NO. The size of the research program does not change the responsibility we have as research administrators to...
support the faculty in their research and to ensure efficient, effective administration and compliance. If we analyze the trends, research administration is going to continue to be:

1. More data driven transparency built upon increasingly sophisticated electronic systems,

2. Despite the constant call for less burdensome regulations, research administration will be even more aware and responsive to building an ethical and compliant foundation,

3. The complexity and breadth of the body of knowledge will demand that we provide excellent learning skills and knowledge transfer for research administration professionals.

Throughout this journey we will be challenged to maintain our core value, namely facilitating the amazing research, scholarship and creative activities of our institutions.

Ed Gabriele:

Finally, I asked Ed Gabriele, who has just finished another of the highly regarded ethics education programs for the Smithsonian Institution, to weigh in on the future of ethics and compliance in research administration. Again, there is no need for editorial comment.

Over the years, it has always struck me that there is a difference between change and transformation. We all change. That is the nature of life. We move and rearrange our lives as we grow and develop. More often than not, the changes we experience in life are rather expected. Yet there are many deep instances of change that are more the catapult than the caterpillar. The physical sciences themselves well address these types of changes in the construct of “the quantum leap.” In this experience, the changes that result are vast and far beyond anything expected. In fact, the experience of the quantum leap is one of utter newness beyond all expectations. As we look at research itself, as well as at research administration and leadership, we see both types of change in our national or global importance, in our institutions, and in ourselves. We daily change and look to improvement. Yet at the same time, there is an experience of complete change that is transformative. Such is the case in one area of research stewardship, namely research ethics and compliance.

Due to the many infractions and tragedies we have seen over the last century, research leaders are not surprised at all by the issuance of many statutes, regulations, and prescribed standards of conduct for both individuals and institutions. The protection of human subjects in research, the proper use of research finances, and the need for honesty and integrity in publications and the reporting of findings are just three examples of the immense and critically important areas in which regulatory compliance is required. Without such standards, there is no clarity and there is therefore always the high risk of harms and injuries coming to individuals, to research efforts, and to the public trust itself. Yet at the same time, over the decades we have also seen the continuation of “creative non-compliance” that still
occurs despite the continuous unfolding of new and ever more demanding compliance rules and regulations. What might this be saying? What might be needed or at least helpful?

Of particular importance for us all might be a generous amount of time and effort to reflect carefully and critically upon what it is we mean by the word “ethics.” Is ethics defined by regulation or statute or even law? In the ancient world, the term ethics was defined as the fundamental character of a person or institution. Ethics is therefore about character --- both personal as well as professional and institutional. In recent decades, many academic leaders have called for “ethical formation” to be as much a part of initial and continuing education of professionals as is the ongoing acquisition of knowledge and skills. In listening carefully to what such academic leaders are saying, there is a need --- and at this period of history a very critical need --- to develop an ongoing and vibrant sense of “ethos education and formation” as the sine qua non context for any and all regulatory compliance efforts. In a simple image, one can train research and research administration personnel in compliance behaviors; but such training has little chance of adaptation and integration for the future unless it becomes grounded in a personal and organizational commitment to the values of ethics.

All of us are painfully aware that the proliferation of on-line slide shows can be viewed peripherally. Final quizzes can be gamed. It is easy to print out certificates from such ventures. Let us not be confused. These efforts in “training,” Pavlovian as they may have become, were not ill-intentioned. They served an important need at the time of their initial emergence. However, what is needed today is something deeper --- something grasped better by the idea of “education” as an act of learning, formation and growth. In a time when sponsoring agencies seem more enamored of the quantity of metrics or numbers of publications as opposed to their inherent quality or substance, we are standing before an invitation to a quantum leap in what we mean by ethics and regulatory compliance.

This is not about choosing between ethics education as opposed to regulatory compliance training. Not at all. What is needed is to see the relationship between the two. Ethics (or better yet, ethos) is the formative context that must pervade an organization and its individual members. It must become part of the air one breathes. Ethics formation is not just about teaching people what “not to do” and why. Rather it should also be as much about moving or pushing members to entertain new and never before imagined pathways of research opportunity that can indeed advance the mission of the organization and the betterment of the people the organization serves. Indeed, one must prevent the worst by promoting the best.

This, then, is a transformative moment. If a context of ethos formation can be built, regardless of what this might mean tactically on the local level, then regulatory compliance and compliance training are given their proper positive context. Compliance then is not just a nuisance-moment of checking off the boxes or fulfilling something that seems meaningless or bothersome. Compliance training is not then the swift look at numbers of slides, gaming a quiz, and then printing out a certificate. Rather, compliance efforts and compliance
“learning” become the visible expression of a set of deeply held values that give life and energy and promote the ongoing quantum leap of what the organization does for others.

There is an added need in all this. In Orwell’s famous work, “1984,” we read about a robotic culture. The Orwellian image clearly is something of which we need to be afraid. It was a society that reduced all manner of human activity to predictable, measurable, and non-intrusive behaviors that maintained a rigid uniformity. There is no one of us as research leaders that would want to do away with the clear need for regulatory guidance to ensure that we do no harm. To think that a commitment to values formation takes the place of behavioral parameters condemns us to a future of immature relativism that can only result in failure. At the same time, our future in research leadership requires that we advance, promote, and mature the depth of research ethics as the essential universal necessary for compliance efforts to have any real impact now and for all the tomorrow’s that will come.

The choice is clearly ours. We can approach ethics formation as a vapor that has no perpetuity. We can adhere to the present pathway of compliance training as a puerile method of check-list accountability. Or we can choose virtue’s middle path promoting both in their essential and robust relationship with one another. I suggest the latter is what is needed. And this is the quantum leap that helps us build a future that is filled with promise and the adventures of new discovery.

But beware. Such efforts, like all quantum leaps, will be resisted, Our 4G culture today wants quick and easy means to do things. Some would like to replace the human interaction of real education with quick and easy on-line, one dimensional visual observations. Others might think a simple “app” can replace the human contact of a healthcare leader toward those who caught up in life’s traumas. Yet truly human interaction, real change and substantive growth never can be done quickly nor peripherally. We need to be very careful that in becoming “app-like” we do not unwittingly become “ape-like.”

All truly human activities require time and energy and substance. The wisest of all research investigators know that research itself is the means whereby dreams become waking realities. And as Bruno Bettelheim once said, “Any dream worth remembering takes a long time to understand.”

Quantum leaps are like that. They take time and substance.....devoting time and realizing that real change affects not just simple behaviors but the substance --- the very character --- of who we are as well as what we do.

A Final Thought....

I have always been an avid reader of science fiction, good or bad. Most recently however, my science fiction stories keep turning into the headlines in today’s paper with details on how what was only speculation is happening now. On some days of the week, that
makes me smile. On other days, I feel caught off guard and alarmed. That is most likely a common reaction among us all --- especially as some of us grow older.

As we return from the speculations we have just read, perhaps it is wise for us to reflect carefully on Alan Kay’s advice as he stated in *Financial Times* on November 1, 1982 that the best way to predict the future is to invent it. We are reminded that we are part of the process of making the future. It just does not unfold on us without our participation in it, without our helping it to become a reality. The future does not just happen to us. We are part of the process of making the future become our today.

Experienced or new to the profession of research administration and management, we can mold the future if we seize the time, energy, and substance to make that quantum leap, or at least, as William Wordsworth put it so well:

> "Life is divided into three terms - that which was, which is, and which will be. Let us learn from the past to profit by the present, and from the present to live better in the future."
POSTLUDE
Into the Future
Dr. Edward Gabriele

When I was an undergraduate, one of my favorite pieces of literature was *The Lord of the Rings* by J.R.R. Tolkien. When the trilogy was cinematized these last years, I was delighted. Both the texts of the trilogy and the films are wonderfully creative. They are filled with exploits of heroes that capture our love of all things victorious. There are the lessons that are played out about human friendship for those who are members of The Fellowship of the Ring. There is the courage of battle against the forces of evil and destruction. There is the warmth of human care. There are tears of memory and smiles of camaraderie. Equally, there are the seething images of domination, power, and the corruption-of-self in the lustful preoccupation with The One Ring To Rule Them All. Tolkien’s work is so popular because it is a mirror of the base rhythms of what it means to be human. In the end, such is the measure of what makes for monumentally significant literature and art.

In the film version of Part III, *The Return of the King*, there is the final scene when elves and wizards, when Frodo and Bilbo, take their leave so that a New Age can dawn for all the citizens of Middle Earth. In the film Annie Lennox captures exquisitely well the poignant sensitivity and ambivalence of Frodo’s leaving Sam and Merry and Pippin in her sung ballad, *Into The West*. That ballad speaks to us all. Nothing is forever. Change is a constant. Though they must inevitably give way to new adventures, we can never discount or deny the journeys that friends have had with one another. Indeed, Annie Lennox sings so well that, though “all souls pass,” we indeed will meet again.

All things change. Nothing lasts forever.

In January 2013, my service as Editor of the *Journal of Research Administration* will come to an end after seven years. At that time, Dr. Timothy Atkinson will become the new Editor. I am delighted with his appointment and feel absolutely confident that he will bring the *Journal* into even newer heights of success and prominence. However, permit me to reflect at this time about my own tenure.

Since January 2006, we have known extraordinary success. The *Journal* has, in a sense, been re-imagined – perhaps even re-invented! We have had unprecedented numbers of submissions in wide and diverse interdisciplinary subject areas related to our profession and all its arts and sciences. We have become indexed in several prestigious resources. The Journal Editorial Board established in these past years a completely *de novo* four-stage publication mentoring process that has never existed anywhere. Its formation is the subject of the special feature article in this edition. Indeed, this four-stage process of author-mentoring is a gift that the *Journal* has given to SRA --- and that SRA has given to the world!

The *Journal* has indeed become a major success for the academy of our entire profession. It was recognized in 2008 with the *Publications Excellence Award* from the National Grants Management Association. This was a first in the history of the Society
itself. It was a sign of the maturity of our profession. It signaled clearly that we have become intricately woven into the very fabric of the process of research that has rightfully been defined many times in the *Journal* as “genius becoming innovation.” We are leaders and servants who midwife genius to innovative birth.

The *Journal* has become the foremost academic and professional publication for the profession of research administration and leadership. It has become a vibrant forum in which the voices of all of the allied arts and sciences and technologies relevant to our profession have been allowed to come together with extraordinary symphonic power. In a certain respect, in these last years the *Journal* has become something more than just a publication. It actually has come to sing. It has become a ballad of its own. And now the time has come for others to do the composing, the conducting, the singing.

These accomplishments were not possible because of any one person or group. Over the years, we have been truly gifted by an outstanding Journal Editorial Board of nearly 100 international *pro bono* experts in editorial leadership, academic review, copy-editing, graphic design, and publication management. We owe each of them, the many that they are, our thanks and gratitude for all of the work they have done together.

Now, in the spirit of Annie Lennox’s lyrics, it is time for this gray ship to take his leave. I want to thank those who have supported the *Journal* these past years. I wish all of you the very best with your future horizons.

May we hold with respect the memories of a journey that, with this edition, is indeed coming to an end.

*Well, it is time.*

*Into the Future.......*
Postlude

Into The West
...Annie Lennox

Lay down
Your sweet and weary head
Night is falling
You have come to journey’s end
Sleep now
And dream of the ones who came before
They are calling
From across the distant shore

Why do you weep?
What are these tears upon your face?
Soon you will see
All of your fears will pass away
Safe in my arms
You’re only sleeping

[Chorus]

What can you see
On the horizon?
Why do the white gulls call?
Across the sea
A pale moon rises
The ships have come to carry you home

And all will turn
To silver glass
A light on the water
All souls pass

Hope fades
Into the world of night
Through shadows falling
Out of memory and time
Don’t say: “We have come now to the end”
White shores are calling
You and I will meet again

And you’ll be here in my arms
Just sleeping

[Chorus]

And all will turn
To silver glass
A light on the water
Grey ships pass
Into the West