

EDITOR'S PREFACE

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It is with great joy and humility that I assume the role of Editor of the *Research Management Review*. Following in the footsteps of one of my long-time mentors, Bob Killoren, is an awe-inspiring experience. Having a paper published in *RMR* was a milestone in my own career, and working with Bill Sharp, who was then editor, was a completely positive experience. During my tenure, my goal is to make authors' submission of manuscripts just as positive an experience.

The Editorial Review Board has stayed almost completely intact. I am deeply grateful to those who have so selflessly given of their time and talent over the years in serving the research administration community by painstakingly reviewing articles and offering comments for strengthening articles before they go to press. I am also thankful to those who have accepted the invitation to join the *RMR* Editorial Review Board in order to lighten the burden somewhat by dividing the tasks among more pairs of hands. The Editorial Review Board stands ready to spot-check the experienced author and to shepherd the new author through the peer review process—helping a good manuscript evolve into a published paper.

As a new editor, of course I bring my own ideas into the mix of what *RMR* should be. In a word, it should be USEFUL. I want to see *RMR* be the source you go to in order to explain a task or concept, learn how someone dealt with an issue, see the results of research related to research administration, or review leadership theory as it exists in our environment. Also, as our profession is being legitimized by the birth of master's degree programs in research administration, I want to see *RMR* serve as a forum for the publication of thesis projects. In that way, we can all glean knowledge from the hard work and scholarship of these bright young thought leaders.

In this issue, we open with an article from **Jo Ann Smith** and **Laurianne Torres** on the process of developing the master of research administration program at the University of Central Florida (UCF). UCF was the recipient of the NCURA grant for developing a master of research administration program. This is an interesting read for those considering the development of such a program at their institution. It should also be useful for comparison purposes to anyone interested in enrolling in this or other MRA programs.

Many who have engaged in any sort of research or commentary on research administrators as an occupational group have referred to the past *RMR* article by **Dr. Thomas J. Robert**, “**Profile of a Research Administrator**” (2006). That landmark article, which used regional 2005 data, has been updated to use national 2010 data. Demographic factors include the predictable: gender, salary, educational level, CRA status, age, and ethnic group, as well as personal demographics such as children at home, responsibility for house-keeping duties, volunteerism, and much more. Those doing research with this occupational group and those with just a sense of curiosity will find this an interesting article to explore.

We all know much has changed in the research administration landscape over the past decade. **Linnea Minnema**, an MRA candidate from Emmanuel College, shares a review of the impact of historically significant events on research administration from 9/11 to the recession. This thought-provoking history of research administration over the past decade presents a fine historical perspective that documents the roller-coaster ride we have experienced since the aftermath of 9/11 and the increase in the defense budget, and with ARRA and the recession.

Drs. Tim Atkinson and **Tom Pilgreen** present an article on transformational leadership theory as applied in the context of the research environment.

Transformational leadership theory blends the different leadership styles in which we must engage while working in an environment where we must play multiple roles. I recommend this article to all research administrators who have a desire to improve their own leadership style in order to adjust to the schizophrenic environment of research administration.

I have attended **Dr. Robert Porter’s** “More Paper out the Door” presentations at national and regional conferences again and again. I learn from each one and always come away with fresh ideas of how to encourage investigators to write more and better applications. At my request, Dr. Porter has committed this highly popular presentation to the written word. I predict this article will offer some new insights and friendly reminders to those who have been in research administration for a while. I further predict it will become required reading for newly hired research administrators and development officers throughout the globe.

William Ferreria, J.D., offers a thorough treatise on collaborations between industry and academic institutions. This work clarifies some of the confusion and misconceptions concerning relationships between industry and academic institutions. As relationships between academia and industry become more frequent and more highly regulated, a good understanding of the nuances of these relationships is critical.

This issue ends with two media reviews. First, “**The Lab: A Positive Solution to Research Misconduct**”, is reviewed by **Miriam Campo**. This interactive film is a fun and dynamic way to offer responsible conduct of research training on your campus. It is a free resource provided by the Office of Research Integrity and well worth exploring further. Second, *Techniques for Monitoring Federal Subawards* by Thompson Publishing is reviewed by **Claudia Haywood, J.D.** This review provides insight into this resource—one that you may want to consider for your office library.

I hope you will enjoy reading these articles as much as I have. Moreover, I hope

you will find them useful as you facilitate the research enterprise and do your part in improving the quality of life of this and future generations. Please share your comments about these articles as a Letter to the Editor at jennifer.shambrook@stjude.org. RMR would love to hear from you.

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August 2011

LETTERS TO THE EDITOR

The following letters to the editor were received on two articles in the last issue of RMR. I invite you to visit the RMR archives to read or re-read these and other articles.

LET’S KEEP TALKING!

Bob Porter’s paper, “Can We Talk? Contacting Grant Program Officers” (RMR 17: 10–16 [2009]), highlights the need for pre-proposal, pre-award mentoring for authors of grant applications. So much of research administration is dedicated to the ever-changing post-award compliance issues that central administration does not see the forest for the trees. If grant awards are not made to an institution, there is no need for a post-award infrastructure. Bob and a now-growing cadre of proposal development supporters continue to stretch the traditional boundaries of pre-award

services to principal investigators or project directors.

No longer should the pre-award enterprise of an institution be: “We checked your budget for errors: Did you fill out all the forms correctly? Is this topic an institutional priority? We will get the institutional signatures for you.” Instead, the services might include: “Does your project match the funding agencies solicitation? What is the general perception of reviewers for this type of project for those funds? Have past reviewer panels been receptive to the application of specific new techniques to this discipline? Does the

application present a clear, concise explanation of the proposed project?"

Answers to these types of questions from program directors can shed light on how the reviewers might perceive a research project.

Often a program director, upon seeing an abstract of a potential project, will say, "My program doesn't fund that type of project, but I think that another program is a better fit." This is often followed by a referral to and contact information for that program.

The "Tip of the Iceberg" points were on the mark. Program officers can often predict how the presentation and components of projects have been received by grant reviewers. There are no guarantees of funding.

However, working with a program officer can be a win-win situation. The program officer wants to have as many high-quality proposals that address program priorities as possible. In this way, when budget allocations are made within the agency, the program officer can justify a request for an increase in future budget allocations by demonstrating that a high number of excellent applications were received but that only a percentage of these could be funded based on the current budget allocation. Every program officer would have like to have had a few more funded applications. Also, many program officers now have the authority to select a few applications from the "cusp" (the

bottom edge of funding) that address the agency's priorities rather than award by numerical value alone. Therefore, an eager young investigator who has submitted an agency-focused, well-written application with an "on the cusp" score can have that proposal moved into the funded award category.

Additionally, program directors can provide valuable insight into the unfunded application. Sometimes, investigators or project directors begin on an appropriate route in the beginning of the application but lead themselves astray during the process. A friendly, not accusatory, conversation with a program director can lead that application to funding on the second try. This can be a much easier way to obtain funding rather than by starting all over again.

As sponsored program personnel, we can offer to new investigators a portal into the mysteries of working with an agency, talking to a program director, and/or interpreting a review sheet. The rewards for faculty and the sponsored program personnel are unlimited! Let's keep talking!

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Missing Elements in University Technology Transfer Offices Hindering Successful Commercialization of Their Technologies

The results of a 2007 survey reported by **Abrams et al. [RMR 17: 18–50 [2009]]** of Technology Transfer Office (TTO) directors at U.S. universities, research institutions, and academic medical centers provide valuable data and statistical information about institutional processes, procedures, management, and financial return policies. The data reveal key objectives of institutional business philosophies and an alternative theme that intellectual property (IP) programs are not primarily driven by institutional financial incentives. The different institutions adhere to their unique motivational factors in promoting IP, as the study evidences. The main impetus for promoting IP in a smaller university is to advance knowledge and develop products for the benefit of the common good in society. Although no conclusive evidence surfaced from the study results, the survey suggests the existence of even further differences between public and private universities. A notable difference is that TTOs at public universities provide more faculty services while private universities emphasize intellectual property commercialization. Data reveal that 10% of the institutions are motivated chiefly by

financial return, 11.5% are driven by revenue maximization, and 2.5% adhere to their mission statements to maximize revenues. Understandably, mission and focus are the key factors; the data clearly suggest that many factors, including management style, philosophy, and accountability at each institution, need to be objectively reviewed to determine whether the TTOs run efficiently and effectively in managing IP commercialization.

The authors suggest that the requirements implications in the Bayh-Dole Act of 1980 may have been thrust onto academic institutions as an unfunded mandate. For evidence of such, the survey data indicate only 0.6% (0.01 to 8.0%) of the total available research budget is expended on patent protection and intellectual property commercialization. Research organizational business efforts have previously demonstrated that greater financial investment in IP commercialization was predicated on receiving a higher return on the investment and the greater probability for successfully commercializing the IP. Smaller universities may not be able to afford to invest their excess research revenue, if any, into technology transfer and commercialization. The data could further suggest that public universities may have the financial security of taxpayer funding and therefore not wish to invest in patents and intellectual property commercialization; they do not wish to be viewed as a business that may

suggest an inherent conflict with academic mission. A difference exists for the private universities, however, in that they perhaps account for and justify all of their research investments. Admittedly, these suggestions are speculative. Determining the exact reasons for these differences will require further research.

Despite underlying intentions of the Bayh-Dole Act, post-implementation data indicate that most TTOs function as cost centers at their respective institutions, not as revenue centers. Furthermore, research institution personnel are primarily compensated for their IP management functions and not for any revenue generated in IP management and commercialization. For instance, the data indicate that only 20% of TTOs are required to self-fund at least 50% of their expenses from revenues. In addition, fewer than 20% of TTOs have incentive plans that compensate for deal value.

On the contrary, the economic return, as defined by the AUTM Survey, indicates that roughly 18 institutions received \$3.4 billion in licensing revenues (AUTM, 2008). Further, the data on licensing revenues reveal that most product listings were pharmaceutical products, which generated a high sales volume and value. It is notable that in 2002, total U.S. licensing value is estimated to be in excess of \$500 billion (Invention Statistics), which far exceeded the national research and development-estimated expenditure of \$292 billion

(Shackelford, 2002). While the larger institutions show positive economic return from licensing revenues that appears to counter-balance the overall TTO expenditure, these data on IP commercialization, at least for smaller institutions, should be encouraging. While this survey captures the most essential elements of the TTO financial efficiencies, issues such as TTO structure, intellectual capital, and focus were not specifically addressed; doing so would have generated a clearer snapshot of the current situation in the TTOs.

Existing data show that 8% of all intellectual properties and patents are submitted or owned by academic institutions and 80% by private firms (OECD, 2011)—this vast disparity may have resulted from the focus and motivational factors between these entities. Furthermore, the current study indicated the existence of extant differences in philosophy, management, and motivations for IP commercialization among universities, academic centers, research institutions, and industry. Universities, academic medical centers, and research institutes are poised to advance fundamental knowledge and develop technology. It is not their main mission to focus on or independently develop and market IP products. Commercialization of the IP for these institutions requires obtaining a licensing partner and most often requires collaborative efforts with an industrial

partner(s). Our collective experience highlights primarily two factors, which determine the success of technology commercialization not addressed by this study.

(1) The technology development stage and institutional internal funding to support the attractiveness of the technology is a key issue. The technology development stage is extremely important in attracting a promising licensing partner. Second, the fit between a prospective company and licensing partner is highly important to commercial success. For industry, it is common for a company to examine the technology developed at universities and academic research centers and then later conclude that the IP may be at a premature stage for further development. They sometimes conclude that the IP needs further advancement before it is worth licensing, or extensive discussion. For the technology to be licensed, further development may be needed at the universities or research institutions. Funding mechanisms are often insufficient to advance IP technology to the proof-of-concept or prototype stage. The prototype stage is preferable so that a potential licensing partner could best evaluate a product's market potential and estimate the costs necessary to finalize the product. Without this stage, most IPs and inventions result in non-commercial patentability. Data clearly show that little funding exists to assist in technology

enhancement, or to pay TTO officer incentives, especially at smaller public universities, which may be prohibited from doing so, acting as a further disincentive to technology commercialization.

(2) Having a marketing plan and clear marketing methodology in place is another key factor to successfully commercializing IP technology. A successful marketing plan will take into consideration items such as availability of sufficient number of staff and expertise, availability of marketing materials, easily navigable and up-and-running website, availability of a technology list, personal contact information of the TTO officers at the institutions, and successful interactions between the willing licensing partner and the TTOs. All of these factors are important in generating interest in and successfully obtaining a licensing partner.

Establishing business arrangements and relationships at the onset of any commercialization plan may also be a key to finding the best licensing partner. It is important to learn whether the potential licensing partner's own patents intersect with the technology that are being developed or negotiated. Most institutional research is done for the sole purpose of scientific discovery, while private industry conducts research to generate the marketability of their product(s). If the technology interfere with the product(s) in the pipeline for an industry, it is most likely that a company would partner with the

researcher to develop the technology or to buy the rights and not to pursue it – shelve it to stifle commercialization and competition.

This survey adequately reviews how TTOs are currently managed and function. The survey addressed some specific areas of institutional management and organizational structure. The authors allude to the importance of making a financial investment in IP commercialization to enhance product development and technology improvement for universities and research institutions. The data show that U.S. institutions spend 55% of TTO operating budget or 0.6% of their total research budget on TTO. The authors also rightfully propose that smaller institutions that do not make an adequate investment in the commercialization of their IPs will not be very successful.

It is discouraging but not surprising to learn that TTOs spend more money on patent protection than on operations (ratio range, 6.4:1 to 3.5:1), which includes commercialization costs. It would have been most beneficial to glean from this specifically how much money, if any, universities, academic medical centers, and research institutions spend on technology transfer and commercialization, which are vital to the success of their intellectual property and patents.

Data show that 90% of efforts go to commercialization of a patent to ensure its success (Invention Statistics, 2011). It is clear

that universities and research institutions are not committing this level of financial or intellectual effort in this area. The data extrapolation from the current survey reveals that one FTE is employed for approximately \$27 million (for smaller institutions) and for approximately \$20 million (for larger institutions) in research expenditures. It is not certain whether the data support the implication that larger institutions are more efficient and smaller institutions are required to have minimum infrastructure in place before having the capability to produce commercially viable IPs. If the former is correct, it is possible that larger institutions have better intellectual capital to their advantage of and better royalty terms addressed in their contract language, as these may vary from 1% to 20%. If the latter is also true, the authors' comment concerning the Bayh-Dole Act having been an unfunded mandate further justifies the notion as evidenced by the fact that more investment brings in more revenue to the institutions from technology transfer programs. Of course, only larger institutions had proven to have the means to invest adequately and to be more successful with commercializing IP. The larger universities' IP successes are in direct correlation with placing higher investments on the development of IP and the capital it generates as excess revenue. In addition, they often operate with larger TTOs and staff capacity to support the research. It is debatable whether research universities

would follow this business model; however, it has been reported that more research investment would be necessary to the successful commercialization of IPs (DeVol et al., 2006).

It appears that the authors of this study have measured “success” strictly in terms of the amount of revenue generated as net revenue by a research institution on IP technology development. However, other non-financial factors were not measured, some of which may be influential factors in the success of IP, including publications, grants, and other associated but difficult to measure benefits inventors and the institutions bring to the table. On many instances, the research itself has been the primary goal and the intellectual property associated with the research resulted as a by-product of the research process, or even as a secondary outcome. It is not surprising that successful inventors are also successful researchers who often bring numerous grant awards to the institutions at which they are employed—grants that also contribute to the financial viability of their institutions. Moreover, evidence shows that “knowledge spillover” contributes to local and regional innovation (Fritsch & Franke, 2004).

We concur with the authors that universities, academic medical centers, and research institutes, especially the smaller institutions, lack the necessary operating budgets to commercialize IP technology. We find that unlike private industries, these

institutions’ missions do not focus on technology commercialization and are thus limited by not having the expertise necessary to license and successfully commercialize their inventions and technologies. Should the universities, academic medical centers, and independent research institutes follow the business model to optimize technology commercialization and to generate revenues in excess of their operating budgets, they must focus on this area and invest appropriately to reach this goal.

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