Enhancing Faculty Productivity Through a Centralized Communications and Project Management Infrastructure: A Case Study at The University of Kentucky Markey Cancer Center

Heather N. Russell-Simmons
Markey Cancer Center, University of Kentucky, College of Medicine, Lexington, KY, USA

Cathy Anthony
Markey Cancer Center, University of Kentucky, College of Medicine, Lexington, KY, USA

Marcia Ballard
Markey Cancer Center, University of Kentucky, College of Medicine, Lexington, KY, USA

Jonathan Coffman
Markey Cancer Center, University of Kentucky, College of Medicine, Lexington, KY, USA

Donna Gilbreath
Markey Cancer Center, University of Kentucky, College of Medicine, Lexington, KY, USA

Terry L. Keys
Markey Cancer Center, University of Kentucky, College of Medicine, Lexington, KY, USA

Danielle Story
Markey Cancer Center, University of Kentucky, College of Medicine, Lexington, KY, USA

Jennifer Rogers
Markey Cancer Center, University of Kentucky, College of Medicine, Lexington, KY, USA

David M. Gosky
Markey Cancer Center, University of Kentucky, College of Medicine, Lexington, KY, USA

Nathan L. Vanderford
Department of Toxicology and Cancer Biology and Markey Cancer Center, University of Kentucky, College of Medicine, Lexington, KY, USA

Abstract: *Academic careers and institutional reputations are closely linked with the ability to secure funding and publish work. In today's competitive environment, it is essential for research to be clearly communicated. In our experience, many researchers need assistance with communication skills, and institutions that offer professional services in grant, manuscript and project management have an advantage in the development of their faculty and trainees. A review of the literature shows that some institutions offer centralized proposal development resources and personnel to assist with grant writing, some institutions offer workshops and lectures designed to improve researchers' writing skills for grants and/or manuscripts, and fewer institutions offer departments focused specifically on editing manuscripts. In the fall of 2009, the University of Kentucky's (UK) Markey Cancer Center (MCC) developed an infrastructure, the Research Communications Office (RCO), to enhance faculty productivity. The RCO exists to provide: expertise in scientific editing of manuscripts for academic publishing; editing and management of research, training, and career development grants; project management for multi-component and institutionally complex grants; facilitation and tracking of all MCC pilot funding mechanisms; tracking all research outcomes; preparation of graphics for presentations, posters, publications and grants; marketing and design expertise for outreach endeavors; the planning and execution of internal and external communications; and MCC web content creation and maintenance. A successful and valued service for MCC, the RCO has totaled more than 1,400 projects over six years, growing from 189 projects when tracking began in 2010 to 294 in 2015. This article will discuss why and how the RCO was created at the MCC, and in doing so, provide a framework for how the RCO model can be successfully implemented at other institutions interested in offering professional editing and management of grants and manuscripts.*

Keywords: *research communication; faculty productivity; academic support services; editing; project management; pre-award grant administration; content management; professional graphics*

Enhancing Faculty Productivity

The research productivity of an academic department is primarily measured in terms of total publications and grants awarded (Souba & Wilmore, 2000; Souba, Tanabe, Gadd, Smith, & Bushman, 1996), making writing and publishing key to successful career development and academic survival for faculty and trainees, as well as for disseminating expertise and accomplishments (Derish, Maa, Ascher, & Harris, 2007). In today's competitive environment, where resources are limited and competition is fierce, it is essential for research to be clearly communicated. The burden of clarity rests with the author (Stephens & Campbell, 1995); the reader's job is to follow the author's thinking and to agree or disagree, not to decode and reconstruct the paper (Zeiger, 1999). The pressures of securing grant funding, conducting research, and publishing may be further compounded for faculty and trainees who were trained internationally or abroad, are nonnative speakers of English (Wang & Bakken, 2004; Pagel, Kendall, & Gibbs, 2002), or lack scientific writing experience.

Pressure to produce is not new to research institutions, and many have adopted resources to assist their researchers. Major medical centers across the United States, such as The University of Texas MD Anderson Cancer Center, offer a wide range of editorial, educational and publishing services for faculty and trainees (Stephens & Campbell, 1995). Larger institutions have developed entire departments for editing and teaching scientific writing skills to nonnative English speakers. Other institutions, such as the University of California, San Francisco, have developed courses in scientific writing for surgeons, individual writing consultations and editorial review with the objective to improve participants' ability to write reports of research and clinical observations for publication in scientific journals (Derish et al., 2007). More broadly, the William H. Welch Medical Library offers fee-based editing services for affiliates of the Johns Hopkins Medical Institutions (including the School of Medicine, School of Hygiene and Public Health, School of Nursing and the Johns Hopkins Hospital). These editing services are designed to address the lack of a central resource to help scientists develop and improve their writing skills (Stephens & Campbell, 1995). The School of Information Studies at Syracuse University offers a two-day intensive Grant Writing Workshop to support both grant writing and salesmanship of a proposal idea (Deitz & Stanton, 2016). Prior to this two-day workshop, a research administrator was hired to assist with proposal submissions throughout the school. This individual became a key facilitator of administratively burdensome activities, but there remained an expressed interest among faculty and students for instruction in the art of grant writing (Deitz & Stanton, 2016).

The individual programs offered at these institutions each touch areas of need for researchers: editing, improved writing skills, and grant writing and management. The University of Kentucky (UK) National Cancer Institute (NCI)-designated Markey Cancer Center (MCC) developed the Research Communications Office (RCO) as a crucial piece of infrastructure to help cancer researchers secure grants and publish their research by offering services in these areas of need. The office is staffed with experts in scientific editing, production of high-quality graphics, timeline management, grant guideline interpretation, publishing specifications, as well as grant and manuscript submission at no charge for all cancer-related work.

RCO Creation and Service Evolution

In 2009, physician-scientist B. Mark Evers, MD, accepted the role of Director of the UK MCC, and moved to Lexington, Kentucky, with his 32-member research team. In addition to increasing the number of MCC researchers at UK, his arrival also brought an increase in the number of multi-component projects, grants and research outputs such as publications, abstracts and presentations. With this influx of activity, a more efficient infrastructure - one that added to the suite of support services - was needed as the MCC grew and projects became more complex.

Before Dr. Evers arrived, cancer researchers at UK were directly responsible for preparing funding proposals and disseminating their own research findings. Two support staff were in place for grant support: one dedicated to pre-award administrative support such as budget preparation, biosketch collection, and the assembly and submission of the final grant materials; the other for post-award financial administration.

Dr. Evers envisioned an expansion of support services under the umbrella of a new office: the RCO. Initial personnel plans for the RCO included a scientific editor to ensure that research was well articulated and a graphics specialist to ensure the professional presentation of the images and layout of the grant. These individuals would also edit and submit research manuscripts for publication and create presentations and posters for scientific conferences. Demand for editorial and graphic services quickly necessitated the addition of multiple team members to serve as both editors and designers, and demand for MCC website maintenance necessitated the addition of a team member dedicated to refining content and regular maintenance of the site. The current scope of RCO responsibilities and sample staff descriptions are outlined in Table 1.

Table 1. MCC RCO Staff and Responsibilities

Position/Title	Responsibilities
Manager	• Daily management of personnel and budget • Serve as the key point of contact for the office, often helping initiate new projects and communicate RCO skills and expertise • Lead project coordinator and manager for proposal development, especially for multi-college and/or multi-department interactions • Manage the solicitation and peer-review process for all MCC developmental research projects/pilot funds • Lead tracking and routine reporting efforts for the cancer center (for example, membership and publication output)
Pre-Award Specialist	• Liaison between MCC and UK College of Medicine Sponsored Research Administrative Services and UK Office of Sponsored Projects Administration • Assist researchers in identifying funding opportunities • Ensure compliance with funding opportunity guidelines • Disseminate information about guideline changes for major grant sponsors • Budget development for large multi-component projects • Coordinate completion of data tables and institutional information components for training grant and career development applications
Editor/Designer	• Editing grants and manuscripts for grammar, content and compliance • Creation and editing of images and figures • Project management for small grants
Web Editor	• Maintenance and content creation for MCC website and social media • Design and distribution of newsletters • Web project liaison to UK HealthCare Marketing and Public Relations

RCO Process

Despite years of experience researching and writing for academic venues, many academics find grant writing especially challenging (Henson, 2004; Porter, 2007). Whether the challenge for a researcher is being unaware of updates to funding specifications, perfecting English writing style and grammar, limited experience with design software, or the need for project management, the RCO is trained to assist with cancer-related communication. In order to offer assistance to as many researchers as possible, RCO services are available at no cost to any UK researcher, clinician, instructor, or student with a cancer-related project.

Projects begin when a researcher contacts an RCO team member; for investigators, using RCO services is voluntary. Commonly requested services include: editing grants, manuscripts and book chapters; creating clear graphics; reviewing guidelines to ensure submission requirements are met; confirming correct file types and documents formats; and serving as the central point of contact for complex projects to provide consistency among drafts from numerous individuals (Table 2).

When a project is requested, special expertise, the amount of time involved and individual workloads are all factors that determine which RCO staff member will ultimately be responsible for project completion. The RCO team meets briefly every morning to discuss current and upcoming projects, much like an editorial team that meets to review and discuss daily topics and assign tasks for short- and long-term projects. Referred to as "whiteboard meetings," this informal, standing meeting obtained its name from the use of a dry erase board where assigned projects are listed and deadlines are tracked. Initially an experiment in managing incoming work, whiteboard meetings have become fundamental to the RCO teamwork approach. Discussions here allow team members to describe their work, request assistance and input from colleagues, plan for upcoming projects that may require detailed scheduling, and share news that may impact the type or amount of expected projects. The whiteboard meetings also serve as an opportunity to discuss RCO staff needs and expectations, including training, continuing education opportunities and administrative issues.

Most projects are returned to researchers within a week, but this may vary depending on the complexity of the project. For example, reviewing and editing a manuscript submission may take a single RCO team member one day to complete, while management of a complex grant application may require continued effort from the entire RCO team over the course of many months (and in some cases, a year or more).

Proven Value

It is exceedingly difficult to "quantify" the effect of editorial review on publishing or funding success. Whether a scientific manuscript is accepted by a journal, or a grant proposal is funded, is simply too complex to lend itself to a financial analysis, or to correlation with revenue-generating units (Derish et al., 2007). As Derish et al. note, there are many factors (e.g., track record, environment, mentoring) besides writing quality that determine publication rates and grant awards (2007). For example, publication of a journal article depends at least in part on the researcher's track record, notoriety and ability to select an appropriate journal. From the journal's

Table 2. MCC RCO Project Type and Services Offered

Project Type	Service Offered
Grants	Ensure all funding organization guidelines are met, review for correct grammar and spelling, check organization, confirm formatting consistency among the various components, including the budget, text and graphics. More complex grants require coordination among several university entities, with the RCO as a planning hub, providing timelines, organization, centralized communication, and acting as a clearinghouse for communication.
Manuscripts and Book Chapters	Review formatting for adherence to publisher guidelines, check grammar and spelling, check for consistency in heading styles, ensure that writing is clear and concise, verify reference style, review graphics for quality, improve or redraw figures as needed, provide figures in appropriate resolution and file format, submit text and graphic files to the selected journal or publisher, review proofs, and collect copyright forms as needed.
Presentations	Assistance with an oral presentation or poster by editing and submitting attendee abstract, reviewing preliminary slides or posters, improving figures, condensing text, adding animation where appropriate and ensuring consistent style throughout a slide presentation.
Internal Communications	Writing and distributing the Markey Minute, a weekly newsletter emailed to MCC employees and interested parties that provides a single, encompassing news source covering a weekly calendar of tumor boards, seminars, speakers and events as well as news specific to the cancer center. Writing and distributing the Markey Quarterly, a newsletter that provides a more in-depth exploration of the people and accomplishments at MCC. A PDF copy of this quarterly newsletter is emailed to the MCC distribution list and posted online.
Website	Maintain and create content for the MCC website and social media, a subset of the larger UK HealthCare Enterprise website. Serve as web project liaison for UK HealthCare Marketing and Public Relations.
Pre-Award	Coordinate submission of information requested by sponsors prior to award, work with researchers to ensure that IRB, IACUC, and biosafety approvals are obtained prior to award, provide revised budget or other information to the UK Office of Sponsored Projects Administration for account establishment.

standpoint, acceptance of an article may depend on the number of other researchers submitting on the same topic at the same time, the attitude or interest of the specific reviewers, and reader feedback on previous articles.

Despite these complicated realities, the RCO has systems and tools to track both projects and customer satisfaction. One internal tracking mechanism for output is a simple database of completed projects. This file, maintained and updated by every member of RCO staff throughout the year, includes the commissioner's name, project type (grant, manuscript, poster), project destination (pilot grant, journal name), work completed (edited, formatted, submitted, figures drawn), project title, initials of who worked on the project, and date of completion. This tool is

used by the RCO to show year-over-year growth, manage trends (such as yearly increases in web-related work), determine the needs of the MCC research community and identify the highest-volume users.

The RCO has experienced an increase in project totals each year. From 2010-2015, the RCO completed over 1,400 projects, with 294 projects in 2015 alone. These projects represent work from researchers in 35 departments across 9 colleges at UK. Of note, every project carries the same weight in total count, whether it is a single edit to a manuscript completed in a matter of minutes or the management of a 500-page grant spanning a year or more. The RCO breaks these projects into categories such as the more popular Manuscripts, Grants and Posters/Presentations; as well as the less used services such as Abstracts, Books and Dissertations that are combined into single category and Other, which includes projects such as advertisements, logo creation and promotional items (Figure 1).
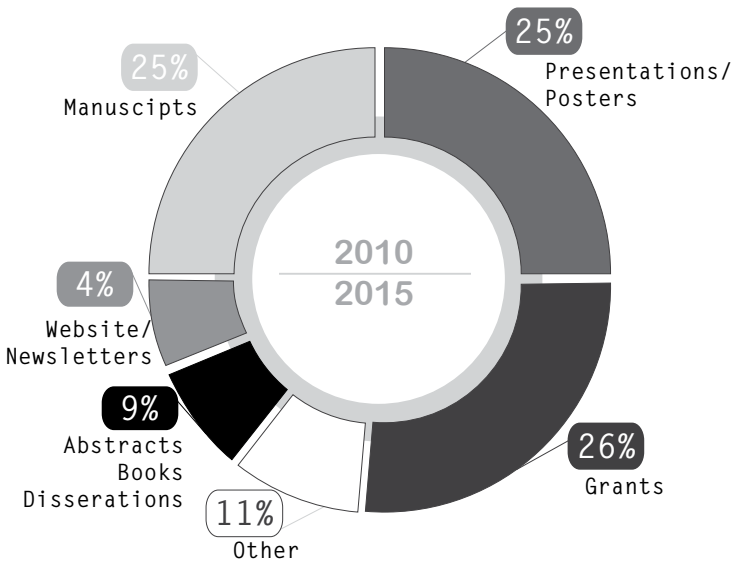

Figure 1. Break down of RCO projects from 2010-2015

Although participating in more projects each year is a critical measure of success for the RCO, equally important is providing excellent service. Customer satisfaction is measured via an anonymous, six-question survey created in and hosted by REDCap (https://projectredcap.org), a secure, web-based application designed to support data capture for research studies, providing: 1) an intuitive interface for validated data entry; 2) audit trails for tracking data manipulation and export procedures; 3) automated export procedures for seamless data downloads to common statistical packages; and 4) procedures for importing data from external sources. Once a project is completed, a RCO team member sends an email request to the researcher to complete the online

survey. Cumulative survey results show that 92% of all respondents are either "very satisfied" or "satisfied" with the work RCO completed. In addition, the RCO's highest-rated qualities were reasonable turnaround time and clear communication (77%) as well as the feeling that RCO made a positive contribution to the project (75%). Comments indicate that researchers feel the quality of their output was more professionally appropriate as a result of working with the RCO; that the RCO is collaborative and responsive; and that RCO editing for grammar is highly valued by those whose primary language is not English. RCO value has also been honored through programs at MCC dedicated to recognizing outstanding service. Individually, team members have been repeatedly nominated as Markey Difference Makers, an internal award given to MCC employees who go above and beyond in their work, as well being honored as Markey Difference Makers of the Year in 2012 and 2013.

The value of the RCO was also on display in 2012 and 2013, when the MCC was awarded the prestigious Cancer Center Support Grant (CCSG) and received NCI designation. NCI-Designated Cancer Centers are recognized for their scientific leadership, resources, and the depth and breadth of their research in basic, clinical, and/or population science. Patients at the MCC benefit from new drugs, treatment options and clinical trials only offered at NCI-designated centers. Instrumental in the project management of the CCSG, the RCO managed aspects of the proposal ranging from membership approvals to the tracking of hundreds of publications, maintenance of the grant's budget, and the shepherding of numerous grant drafts between four research programs and five shared resource facilities. Serving as a central repository for all files, the RCO edited hundreds of drafts for grammar and content as well as adherence to CCSG guidelines. In addition, the RCO was responsible for each graphic the grant required from start to finish; including monitoring the quality of every figure included in the 800-plus page application, the layout and construction of 50 binders, and the design of 269 slides presented at the on-site review. Successful RCO efforts were noted in the CCSG review critiques as: "This group should be commended for their outstanding preparation of the written CCSG application and for the well-organized site visit..."

Following the success of the CCSG submission, RCO gained university-wide recognition as a critical resource for researchers and was introduced to a larger client base in need of editing and project management services. In particular, the UK Center for Clinical and Translational Science (CCTS) approached the RCO for assistance with its own grant renewal. The major source of funding for the CCTS is the Clinical and Translational Science Award (CTSA), a major federal grant that is awarded to centers that enable the full spectrum of clinical and translational research at their institutions by providing services and resources to researchers. CTSA awards represent significant funding in infrastructure and research support, making it a crucial funding source for research efforts at UK and MCC. After many CCTS faculty participated in the cancer center's CCSG submission, CCTS leadership recognized a need for similar infrastructure and approached the cancer center about sharing RCO resources, expertise and time. Much as they did for the CCSG, the RCO managed written drafts of the CTSA grant and graphics and created timelines for document drafts and meetings to ensure the proposal adhered to National Institutes of Health guidelines for grant submissions.

The RCO also works in collaboration with public-facing organizations housed at UK. For example, Kentucky's most central cancer support organizations, the Kentucky Cancer Consortium and the Kentucky Cancer Program, each funded separate design services. When that arrangement was no longer feasible, both organizations turned to RCO for help completing a range of statewide public-outreach communications and design projects: a revised logo; brochures and pamphlets for local health organizations; and presentation materials used by staff to educate local officials and the general public. With assistance from RCO producing these materials, both organizations saved time and, most importantly, money that would have otherwise been spent on costly outside design services.

Key Lessons Learned

The creation and growth of the RCO shows that faculty value institutional support in the form of research communication services, and that such support is beneficial to researchers seeking to fund and publish their research. Over time, it has become clear that the RCO's evolution and expansion of services enhance productivity. In addition to what we have presented above, our lessons learned include the following.

- **Secure critical buy-in from leadership.** Long-term success of institutional research communication services is dependent on the support of leaders at the highest levels of the organization. Key leaders are uniquely positioned to recommend RCO-like services and set an example promoting the value of editorial review. Leadership must position a central communications office as a resource center and involve both editorial and project management staff as early in the process as possible. At the MCC, researchers have learned to value the importance of editorial review and feedback because faculty at the highest levels of the organization utilize RCO services with success. As those relationships build and work load increases, leadership must continue to invest in staff growth and financial support for research communication services.

- **Use metrics and quality measures to reveal areas of unmet need.** Metrics and quality measures provide important insight about services offered, as well as gaps in those offerings. For the RCO, faculty respond positively to the involvement of editors and designers. This positive response lead to increased workload and therefore the addition of new RCO staff. These increases allowed the RCO to carry more responsibility, such as more thorough reviews of materials and ensuring adherence to guidelines for nearly all grants reviewed. As staff members became increasingly expert at various facets of review and design, the RCO was able to provide a broader portfolio of services that have evolved over time.

- **Emphasize a team-oriented culture.** Early RCO projects were highly individual in nature. However, it soon became apparent that a large amount of coordination and collaboration was needed to successfully complete work. This required staff members to work together more often, sometimes in stressful conditions where critical funding dollars were at stake. Repeatedly revising the same documents resulted in long hours of demanding work. Discord among team members in these types of situations could have disrupted the successful completion of projects that maintain the high standards of the RCO. Therefore,

it is important to plan ahead for this evolution, from strong individual work to closely interlocked teamwork, and hire staff who excel with individual challenges but also fully embrace highly collaborative environments.

We have presented a case study of our infrastructure that successfully enhances research productivity at our institution. Based on our experiences, we believe the ability to provide research communication services, and to grow and meet identified needs among researchers, is a unique opportunity for other institutions.

Authors' Note

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Heather N. Russell-Simmons, MA, MBA
Editor/Designer
University of Kentucky Markey Cancer Center
800 Rose Street
CC415 Ben F. Roach Building
Lexington KY 40536
Email: heather.11@uky.edu

Cathy Anthony, PhD
Scientific Editor
University of Kentucky Markey Cancer Center
Email: catherine.anthony@uky.edu

Marcia Ballard
Pre-Grant Award Specialist
University of Kentucky Markey Cancer Center
Email: mlball1@email.uky.edu

Jonathan Coffman
Web Manager
University of Kentucky Markey Cancer Center
Email: jonathan.coffman@uky.edu

Donna Gilbreath, MA
Editor/Designer
University of Kentucky Markey Cancer Center
Email: donna.gilbreath@uky.edu

Terry L. Keys
Cancer Education Liaison
University of Kentucky Markey Cancer Center
Email: terry.keys@uky.edu

Danielle Story, MBA
Editor/Designer
University of Kentucky Markey Cancer Center
Email: danielle.story@uky.edu

Jennifer Rogers, MBA
Manager
University of Kentucky Markey Cancer Center
Email: jen.rogers@uky.edu

David M. Gosky, MA, MBA
Director, Administration & Finance
University of Kentucky Markey Cancer Center
Email: david.gosky@uky.edu

Correspondence concerning this article should be addressed to:

Nathan L. Vanderford, PhD, MBA
Assistant Professor, Department of Toxicology and Cancer Biology; Assistant Director for
Research, Markey Cancer Center; Assistant Dean for Academic Development, College of
Medicine
University of Kentucky
800 Rose Street
CC140 Ben F. Roach Building
Lexington KY 40536 USA
Email: nathan.vanderford@uky.edu

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