

A departmental initiative for clinical and translational research

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ABSTRACT

To encourage departmental research activities, the Department of Medicine of the Medical College of Georgia (MCG) introduced an internally funded Translational Research Program (TRP) in 2014. Patterned after the Vanderbilt Institute for Clinical and Translational Research, the program offers research studios for project guidance, research mentoring and the availability of limited financial support through research vouchers. Additional academic services include abstract reviewing, conducting research conferences, organizing departmental research programs for students, and offering courses in biostatistics. During the first 15 months of its existence, the TRP working group addressed 132 distinct activities. Research mentoring, publications, and the conduct of research studios or voucher approvals encompassed 49% of working group activities. Other academic services constituted the remaining 51%. Twenty-four per cent of TRP committee activities involved research mentoring of 32 investigators (25% faculty and 75% trainees). Mentored projects generated 17 abstracts, 2 manuscripts and \$87,000 in funds. The TRP conducted 13 research studios; trainees presented 54%. The TRP reviewed 36 abstracts for local and state organizations. Monthly research conferences and statistical courses were conducted and well attended. Our experience thus far indicates that a departmental TRP may serve to facilitate the growth of patient-oriented research with minimal financial support. It requires active engagement of volunteer faculty and departmental leadership willing to balance research with the other demands of the academic mission.

INTRODUCTION

The tripartite mission of academic medicine is to promote excellence in clinical care, education and research. Fostering interest in research has proven difficult. In this regard there has been a steady decline in the per cent of physicians engaged in research since a peak in 1985.¹ Financial pressures and increasingly burdensome healthcare delivery systems continue to drive trainees and faculty away from academic careers.² The National Institutes of Health (NIH) has helped address this problem with the Clinical and Translational Science

Awards (CTSA) program, funding 64 programs in 2015.³ The Medical College of Georgia (MCG) at Augusta University is among the majority of Liaison Committee on Medical Education-accredited allopathic medical schools without a CTSA, and has thus been faced with the challenge of promoting interest in patient-oriented research without significant extramural support.

To address this issue, the Department of Medicine used departmental funds to establish a formal mentoring program for junior faculty in 2006, and in 2009, introduced a research track for the medicine residency. Despite these initiatives, infrastructural and educational gaps in assisting investigators with design, implementation and execution of research projects remained. An initiative to improve research output, interdepartmental collaboration and interinstitutional activity, and to create a platform to successfully pursue extramural funding was implemented. Following consultation with the leaders of the Vanderbilt Institute for Clinical and Translational Research, we crafted a smaller-scale, departmental Translational Research Program (TRP) patterned after many of their successful platforms. This report documents the first 15 months of that initiative.

METHODS

In December 2013 a working group for the TRP was established and charged with crafting a mission statement, vision and outline for the general provision of research-related services. Administrative policies were developed to guide the program, a webpage for access to services was designed and launched, and funding from the Department of Medicine was secured. To monitor progress of the program, and facilitate reporting, a database was designed to track active projects, studios, vouchers, presentations, manuscripts and revenue generation through grants.

RESULTS

General facets of the program

TRP working group

In April 2015 the TRP working group consisted of 16 members representing 3 affiliated

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Research tools and issues

hospitals, 10 divisions, departments and support services, as well as community physician scientists (table 1). The group meets monthly to address standing agenda items as well as new business. Working group members also serve on studio committees, and support other scholarly activity as time and interest allow.

The Chair of the working group receives partial salary support from the Department; otherwise all members of the committee are volunteers and, through meetings and studio preparation and participation, commit approximately 30 h/year to the program. There is no protected time provided, however, a major benefit to involvement is access to other faculty with a common interest in advancing the research mission. Several new or existing collaborations have been developed or strengthened. Finally, most members of the committee enjoy the opportunity afforded by the studios to mentor young investigators.

Mission statement and vision

The mission of the TRP is to foster interest in translational medicine by faculty, fellows, residents and medical students within the Department of Medicine. The vision is to assist in the performance of successful clinical and translational research projects for individuals at all academic levels, with the ultimate goal to develop a sustainable platform engaging the next generation of physician scientists.

Provision of services

The MCG TRP and its provision of services are patterned after the CTSA program at Vanderbilt University,⁴ and supported by clinical dollars (\$90,000 annually) from the Department of Medicine. Statistical, study coordinator, and part-time administrative support, and 10 research vouchers (up to \$2000 each) are provided by these revenues. Other budgetary items include monthly lunches for the TRP study group, and support for one visiting professor per year.

Through the TRP website, investigators can request a research studio, find a mentor, or apply for a research voucher. The multi-institutional nature of the TRP is intended to support networking and collaboration in research and scholarly activity.

Table 1 TRP working group composition

Department or group	Count
Medicine	4
Physiology	2
Affiliated hospital	1
Biostatistics	2
Research development services*	2
Medicine residency	1
Emergency medicine	1
Family medicine	1
Community member	1
Administrative assistant	1
Total	16

*Assists with study coordinator services, Institutional Review Board submission support and study-start-up facilitation.
TRP, Translational Research Program.

Research studios

The research studio program is taken from the Vanderbilt model,⁴ and is designed to assist researchers in the areas of hypothesis generation, study design, grant review, study implementation, data analysis and interpretation, and/or manuscript review.

A fixed, 1 h time slot is reserved each Friday for conducting studios. Investigators requesting a studio do so via the website. The justification for the studio request and all necessary supporting documents are required in the TRP office before the studio can be scheduled. If the studio focuses on a trainee project, the trainee must supply the name of the mentor and attest that the mentor has reviewed and supports the project. The trainee and mentor are required to attend the studio. Members of the committee, which may include invited content experts, are asked to review all materials in advance of the meeting. Each studio begins with introductions, followed by the investigator offering a short synopsis of the work. Committee members are then free to ask questions or offer insights about the project. Studios are completed in 1 h or less. Within 1 day, a short synopsis of the session is emailed to the investigator and all committee members. Investigators completing a studio may request study coordinator services and/or statistical support. Further assistance is coordinated on a case-by-case basis by members of the TRP.

Vouchers

Investigators participating in a studio are eligible to apply for a research voucher. Voucher requests for a given project are then reviewed by the TRP working group. Vouchers of up to \$2000 may be requested, and if granted, vouchers may be used for most research-related expenses (eg, publication, supplies and equipment, biostatistics support), with the exception of travel. Vouchers are good for 1 year, at which time any unused funds must be returned to the TRP.

Mentors

The TRP assists trainee or faculty investigators in the identification of a suitable research mentor. Through the website, the requestor can list an area of interest or research preference, and the program will help with matching to a compatible mentor. Mentor matching is accomplished with the cooperation of the Department Chair and Division directors. Mentor requests tied to a specific area of study are referred to the appropriate Division director. More generic requests for mentoring are referred to the Chairman's office, which pairs the requestor with an appropriate mentor.

Academic services, conferences, and educational initiatives

Additional academic services include abstract reviewing for county and state medical societies, organizing departmental and institutional research programs for students, and facilitating research pairing between investigators. The TRP also organizes a monthly departmental research conference and sponsors educational courses in statistics for students, residents and fellows.

Academic output

In the first 15 months 87 projects or initiatives were facilitated by the TRP, generating a total of 132 distinct activities

(table 2). Research mentoring, publications and the conduct of research studios encompassed 49% of the TRP working group activities. Academic review of abstracts, conference sponsorship, academic services to the institution, and educational initiatives accounted for the remaining 51% of work conducted.

Research mentoring

Twenty four per cent of the TRP committee activities involved research mentoring. Mentoring was defined as any project or activity in which the TRP working group, or working group members, assisted an investigator with project development, conduct or analysis. Thirty-two investigators were mentored by the TRP. Faculty accounted for 25%, and trainees for 75% (15.6% fellows, 18.8% residents and 40.6% students) of the mentees.

Publications and revenue generation

Table 3 shows the results of mentored projects, including publications (17 abstracts and 2 manuscripts) and revenue generation. Revenues tied to mentored projects totaled over \$87,000 with the majority originating from a \$50,000 research fellowship award and \$33,000 in summer research scholarships for students, and the remainder in travel grants for investigators.

Research studios

The TRP conducted 13 research studios over the first 15 months. Seven (54%) were presented by trainees (4 fellows, 3 residents). Projects reviewed included clinical research, pre-clinical research, and public health. Six studios focused on study design and seven addressed the need for a study coordinator and/or statistical support.

Six studios were presented by faculty investigators seeking advice and/or access to resources. The topics included (1) advice for translating preliminary studies for a novel asthma treatment into an Food and Drug Administration (FDA) application, (2) resources for conducting a prospective, intraoperative renal biopsy study in living donors, (3) advice and resources for investigating the effects of statins in specific skin diseases, (4) advice for conducting a prospective study of gender in leptin-mediated hypertension, (5) resources for investigating cellular mechanisms of psoriasis, (6) advice regarding a study to investigate efficiency issues in screening colonoscopy.

Table 2 Activities influenced or conducted by the TRP

Activity	Count	(%)
Abstract reviews	36	27.3
Research mentoring	32	24.2
Publications	19	14.4
Research conferences	16	12.1
Research studios	13	9.8
Academic services	8	6.1
Education courses	7	5.3
Vouchers	1	0.8
Total	132	100

TRP, Translational Research Program.

Table 3 Publication and revenue streams resulting from mentored projects

Publications (N=19)	Count	(%)
Abstracts*	17	89
Manuscripts	2	11
New revenues (N=18)	Count	Total (\$)
Summer scholarships (students)	11	33,000
Travel grants	6	4200
Fellowship award (resident)	1	50,000
Total dollars	NA	87,200

*13 abstracts were trainee projects (fellows (N=2) residents (5), students (6)).

Academic services, conferences, and educational initiatives

The TRP provided the department and the institution with various academic services, including reviewing abstracts for the county medical society's research competition (totaling 36 abstracts during 2014 and 2015), organizing departmental participation in sponsored summer research programs for first-year medical students (totaling 30 students during 2014 and 2015), linking clinical investigators with epidemiologists or basic scientists, and facilitating the identification of research mentors for trainees.

The TRP also organizes and runs a monthly departmental research conference, has sponsored two statistics courses for residents and fellows, and offers four 1 h statistics lectures for all departmental summer research students at the beginning of the summer session.

Academic deliverables unique to the TRP

We would estimate that approximately 30% of abstracts, 50% of manuscripts to date, and 50% of student scholarships and travel grants resulted uniquely from TRP activities. The TRP was also solely responsible for facilitating two new collaborations between clinicians and NIH-funded investigators, the six faculty studios cited above, and, in 2015, supporting the first keynote speaker for the annual campus-wide Medical Scholar's Day (a poster program dedicated to the presentation results from over 100 mentored medical student summer research projects).

DISCUSSION

This work documents the 15-month progress of the MCG Department of Medicine's TRP. During this time, the TRP was engaged in a near equal split between research mentoring and provision of academic services. Metrics of success in the mentoring program included engagement of trainees and faculty in the conduct of research, the abstract and manuscript publication stream, an active studio program, and the generation of revenues as a result of these efforts. Academic services included abstract reviewing, sponsorship of student research programs, coordination of well-attended research conferences, and provision of statistical courses for trainees.

The TRP represents a third initiative to foster the development of research within the Department of Medicine, and was preceded by a formal faculty mentoring program and the establishment of a research track in the residency.

Research tools and issues

To date, the mentoring program has facilitated the engagement of 55 mentor-protégé pairs, with 64% of protégés attaining promotion on their first attempt, and over 90% recommending the program to other faculty. The 5-year research track in the residency offers one slot per year, and currently has three trainees and two graduates. Both graduates have moved on to subspecialty fellowship training programs. The TRP has filled many infrastructural gaps not met by these programs, including the provision of support and guidance necessary to take research projects forward. Additionally, the broad representation of the TRP working group adds the participation and perspective of members from other institutions, as well as the community, providing opportunities for departmental collaboration with outside investigators.

The Vanderbilt CTSA served as a model for our TRP. Relevant features of the Vanderbilt program that were easily duplicated at our institution included the development of the working group, and the studio, voucher and mentoring programs. We also copied their web-based access system. Our program differs primarily in size and scope.

The working group of our TRP consists of a diverse membership. The Chair of the committee, along with an administrative support staff member, help to organize all activities. Monthly meetings have proven crucial to open communication as well as identification of other opportunities relevant to the mission of the program. Despite the volunteer status of members of the working group, a common interest in research, combined with collaborative and mentoring opportunities, has helped sustain membership in the committee.

Email responses from investigators following each studio have been uniformly positive and appreciative of the feedback and guidance provided. These included two studios in which the committee was critical of the proposed work, offered extensive revisions, and suggested a second studio following revisions to the project.

The major challenges encountered in the studio process to date have included scheduling conflicts and suboptimal preparation. Issues with mentor schedules have at times necessitated last minute delays in a studio. Additionally, an apparent lack of advanced mentor involvement in some trainee projects limited the depth of guidance the committee was able to provide, as the studio time was taken up with addressing obvious revisions. To address this problem, all protocols are now prescreened by a committee member before scheduling a studio. Nascent projects requiring major modifications are returned to the investigator for revision prior to scheduling.

Our TRP is based on the highly successful CTSA program at Vanderbilt. We do not have federal funding to support this program, but instead rely on departmental funds to create an operating budget. However, the studio program and other services are not expensive, requiring only minimal administrative time, and benefits from the generous participation of all working group members. We anticipate federal grant funding successes in the coming years as the program continues with its efforts to facilitate ties between clinician investigators and basic scientists. Future impacts derivative of the TRP, already starting to be felt, include placing the sponsoring department in a research leadership

role and impacting collaborative scholarly activity of physician scientists at the state and regional level.

The MCG TRP has served as a gateway for investigators to initiate, and trainees to engage in clinical research. The studio assists investigators in some aspect of study-start-up, and has provided a focused review of a manuscript prior to submission. For the trainee, the MCG TRP has been a successful conduit to become engaged in research. It has facilitated collaboration in ideas and projects, and allowed trainees to actively participate in the research process and contribute to the deliverables, such as publication, presentation and revenue generation. Support for the program comes from the department. Resources for study coordinator time, statistical consultations and minimal administrative support constitute the majority of expenses. All members of the working group are otherwise volunteers, and are engaged and committed to the goals of the program. Many have benefited professionally from the networking and/or educational opportunities afforded by working group membership. In particular, there is a high level of enthusiasm by members to participate in studios. The feedback from the studio committee is overwhelmingly positive, despite the 2–3 h of time they must donate in preparation for and participation in each studio.

At this writing, the TRP continues with its mission, and has expanded services to include abstract reviews for the faculty research abstracts competition for the Georgia chapter of the American College of Physicians, a third wave of summer research medical students, and a new initiative to support undergraduate research. The latter is patterned after the TRP studios, and is sponsored at the university level by revenues from the Provost's office. All of these initiatives demonstrate an impact at levels above or outside the department, demonstrating additional intangible 'returns on investment' of department dollars.

In summary, a departmental TRP can facilitate the growth of research when other avenues are not available. The successful program requires minimal financial support, engaged volunteer faculty, and departmental leadership willing to balance research with the other clinical and educational demands of the academic mission. The program has the potential for substantial tangible (revenue, research productivity) and intangible (reputation, community involvement) returns on investment. The potential influence of the TRP may go beyond the walls of the sponsoring department, serving to include the institution, collaborating institutions, and other academic organizations at the state and regional levels.

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