Building a Culture of Curiosity / Inquiry in Family Medicine to Increase Research Capacity

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Historically, the culture of the discipline of family medicine emphasized education and clinical practice but deemphasized research. However, our field should value the acquisition of new knowledge at least as much as it values teaching (Saultz 2010). This change in the culture of family medicine can be accomplished by fostering curiosity. Curiosity is a basic human attribute that causes us to seek new information and explore novel possibilities. Much has been written on the benefits of curiosity in business (Gino 2018). By harnessing the power of curiosity in family medicine, these benefits can create a culture of inquiry, thereby enhancing research capacity in our field.

Transforming curiosity into inquiry and inquiry into practice-based research activities and scholarships have tangible benefits to both the institution and the individual. From an institutional perspective, supporting curiosity creates a learning health system, which quickly learns from experience and shares discoveries with others. It encourages organizational members to ask and answer questions that are aligned with patient and institutional priorities. Additionally, it fosters a widespread environment of continuous quality improvement.

From an individual perspective, curiosity benefits clinicians, faculty, learners, staff, and patients. As our innate curiosity is expressed, creativity increases, and burnout decreases. Our everyday work becomes scholarship, and our clinical practice improves. The dissemination of our practice-based research work produces appreciation and recognition. This process of answering questions produces a new kind of fun, and by partnering with others on this curiosity quest, it is a joy which we can share with our colleagues.

Exploring curiosity also enhances the experience of our learners. The authors define learners as students, residents, fellows, and any faculty who are new to research and scholarship. In a culture of curiosity, learners become adept at asking and answering questions. In addition to satisfying scholarship requirements of accrediting bodies and institutions, a habit of critical thinking is engrained which allows for enhanced future problem-solving. The joy experienced in discovering answers to questions that matter to patients and clinicians will draw more students to choose family medicine as a career and will produce a greater cadre of practice-based research-minded residents and faculty. All of which increases the research capacity of our discipline.

Staff also thrive in a culture of curiosity. They become team members helping to answer questions and find solutions to improve patient care and efficiency. They feel valued beyond immediate daily tasks and gain a larger sense of purpose and meaning. Team cohesion is enhanced, improving recruitment and retention (Rosen 2019). Additionally, staff explore their own curiosity by suggesting questions for the team to investigate.

Patients cared for in a family medicine clinic with a culture of curiosity receive better care. In daily patient interactions, questions arise that have a direct impact on their health and wellbeing. When family physicians are in an environment that fosters curiosity, answers to those questions are readily sought, allowing rapid application of patient-oriented evidence.

The combined impact of a culture of curiosity on institutions and individuals will also impact the communities we serve while enhancing the discipline of family medicine as a whole.

HOW TO BUILD A CULTURE OF CURIOSITY

A general strategy to build a culture of curiosity is to make inquiry through research, scholarship, and quality improvement broadly feasible and gratifying. The authors have experienced many positive benefits of working in cultures of curiosity, many of which are supported by empirical evidence. To accomplish this culture change requires simultaneous **top-down leadership** (Berge 2021) and **grass-roots, bottom-up approaches** (Seales et al 2019). From the top, leadership should make a visible declaration and announcement of this goal and how accomplishing this goal will benefit all the stakeholders above.

Whether you are part of an academic health center or private health system, harmonize your missions so that scholarship emerges from innovation in care and education rather than being squeezed out by competing demands. This should include incorporating curiosity and/or inquiry in your vision and mission statements (Berge et al 2021) if not already present.

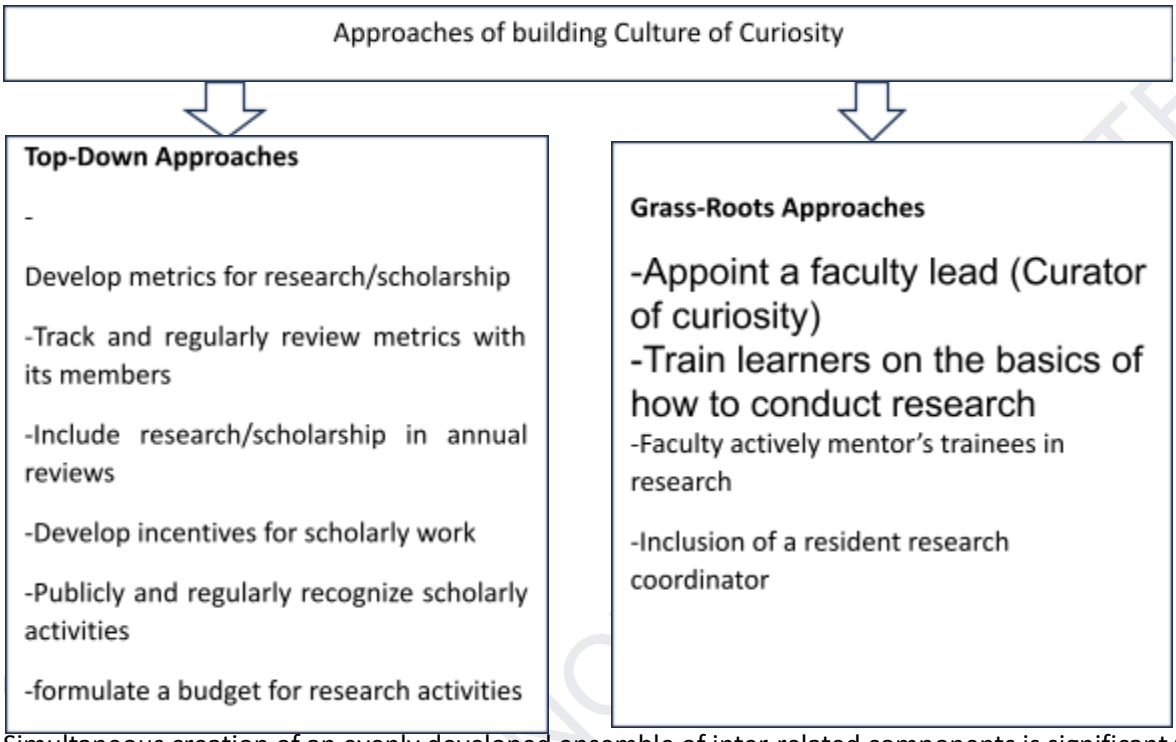
In the top-down approaches, leadership should develop metrics and track the organization's scholarship in family medicine. Initially, a small increase can be expected. However, as the culture of curiosity impacts the entire family medicine team, momentum will build, and an exponential increase can occur. From the author's experience, having each trainee or new faculty develop an initial area of interest is a key to their being successful in turning curiosity into a complete scholarly activity. For example, by creating a culture of curiosity, two authors (PHS, KH) have seen over 3275% increase in scholarship production in their department in the past three years.

The expectation for scholarship should also be incorporated into annual reviews as well as discussion for promotion and tenure. Additionally, incentives should be considered for success in scholarly activity. Scholarship should be included in job descriptions, and when hiring new faculty, in offer letters. Additional recognition of the victories in successful scholarship are recommended (Saultz 2010). These include celebrating publications, presentations, and grants at faculty meetings, posting accomplishments where faculty and patients can see them, and creating annual research awards for residents (Seales 2019, Seehusen 2009) and faculty. Leaders should budget for the costs of publication and presentations at regional and national meetings. Some organizations even create their own regional research meetings, resulting in increased scholarship (Weaver 2018).

Creating a culture of curiosity utilizing **a grass-roots approach** can work well in environments with learners. By instituting an organized research and quality improvement curriculum with a dedicated faculty lead (called the Curator of Curiosity), trainees learn the basics of how to conduct research, including how to formulate an appropriate question, critically appraise the literature, design studies to answer the question, meet regulatory (IRB) requirements, collect and analyze data, and how to publish and present the findings. The joy of discovery and having fun in the research journey are emphasized, which simultaneously improves internal motivation (Li et al 2018) and decreases the fear of conducting research. If residents are required to include a faculty mentor/advisor as part of the study team, there is an added benefit of increased faculty engagement in scholarship. One year after utilizing this curiosity curriculum at two different universities, the lead author noted a significant increase research and scholarship in both residents and faculty. In addition to a faculty lead, some residency programs have also included a resident research coordinator, resulting in peer-driven mentorship that successfully solidified scholarship into the culture (Seales 2019). Residents and faculty have ACGME scholarly requirements, and success in creating a culture of curiosity helps to fulfill them. The Curiosity

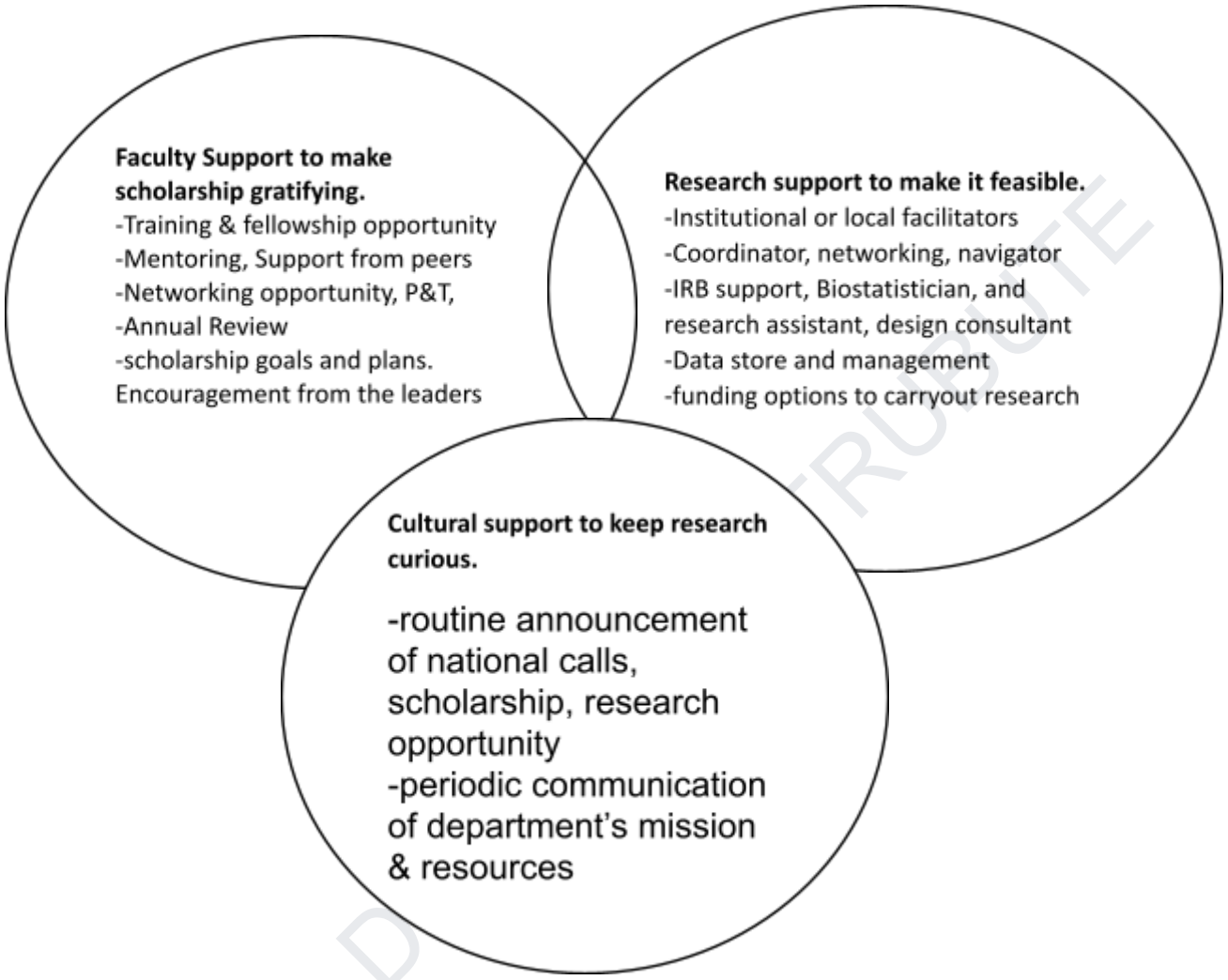
Curriculum has also proven effective in undergraduate medical education (PHS), increasing medical student research participation by 898%.

Figure 1. Summary of the Top-down and Grass-root approaches of building culture of curiosity



Simultaneous creation of an evenly developed ensemble of inter-related components is significant to sustain a culture of curiosity and scholarship capacity. This includes training resources, coaching, research tools, and mentorship with individual planning. Peer support, research affinity groups, and networks can be developed allowing individuals to link up with others who have similar questions they wish to explore. To assist with this effort, authors have used online methods to capture research and quality improvement ideas that arise during daily clinical operations. At LSU, a Google Doc was created called the "Curiosity Box" where ideas can be captured as they arise. The document is periodically reviewed, and people with similar interests form a team to refine the question and design a study to answer it. At the University of Minnesota, an online portal was created for the same purpose with functionality added that provides the ability to track project progress (Berge et al 2021). Figure 2 illustrates the components that are needed to work together to sustain a culture of curiosity in an institution.

Figure 2. Ensemble of related component to sustain a Culture of Curiosity



The operational dimension of a culture of curiosity is to make research and scholarship feasible and gratifying. From both the leadership and institutional perspective, understanding the shifts toward a culture of evaluation is needed to sustain the curiosity in the environment. One suggestion is to contrast the current culture with the desired future culture of curiosity via an illustration of "old rules versus new rules" (Peek 2018).

Table 1. Culture of Evaluation rules (Peek 2018)

Old Rules	New Rules
Evaluation is reactive: If facts arise, then evaluate.	Evaluation is proactive: actively search for the small facts to accomplish a large goal
Designs evaluation questions and measure later	Determine what questions are significant? What are the tools needed to answer the questions?
Setting up the survey questions by myself without having adequate experience and expertise	Ask for help from experts. Involve information technology to set up the surveys
I conduct the study only by myself	Get assistance from research fellows, colleague, residents, and students to collect the data
I analyze the data by myself	Ask for assistance, such as biostatistician, to analyze the result of significance.
Research faculty and general faculty work separately	Research and general faculty work under a common platform, which is shared across the departments
Department has a minimum threshold that needs to be fulfilled as a faculty or resident.	Reputable achievements will be formally evaluated for career advancement

Time is often identified as a barrier to conducting research in family medicine. To support a culture of curiosity by maximizing effort and minimizing time constraints, it is beneficial to have an accessible and organized research and quality improvement infrastructure that makes it easier to conceive, design, and carry out research and evaluation. From the institution's perspective, having an efficient support system or assurance to compensate for additional time required for the faculty is also important to build a practice-based curious research culture in a health system.

Individual mentorship and coaching will also help identify things that busy family physicians are already doing clinically and/or educationally that, with proper guidance and support, can become scholarship. Mentorship sessions can also uncover personal passions which, when combined with curiosity, can create research and quality improvement opportunities (Phillips 2018, Liaw 2019). Although time, research mentorship, and funding are the restraints that many departments and residency programs may experience, a change in attitude toward inquiry-based learning culture and proactive initiatives to practice-based learning through research are the crucial steps to launch scholarly activities in an institution.

CONCLUSION

Creating and sustaining a culture of curiosity throughout family medicine will transform our discipline into one that readily answers questions that matter to our patients and the medical teams that care for them. By discovering patient-oriented evidence, we will improve patient care, enhance professional

satisfaction, and create better work environments. By dually supporting leadership (the top) and learners (grassroots), we can transform our discipline into one that values and excels in research and scholarship.

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