

Advancing Global Health and Medicine Through the Energy of Youth: A Research Team Burning Bright

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Abstract

More than a decade ago, tasked with the creation of an undergraduate research team in the field of integrative health and wellness, the discovery was made that undergraduate study is the perfect venue through which to ignite integrative researchers and clinicians for the future. This research team has produced a lasting impact on our university and community, at the individual, local, national, and international levels. From meager beginnings to numerous funded research projects, programs, publications, and presentations, the students have obtained invaluable skills in the field of integrative health and wellness, equipping them to be effective clinicians for our future. Team members have demonstrated collaboration and commitment and brought a variety of perspectives to our projects, which has been critical to the success of our work. Being part of this team has served to both expand their knowledge of integrative medicine and to help the students develop personally and professionally, instilling in them a dedication to the scientific method, evidence-based practice, and an integrative approach to health and wellness. Ultimately, this research team has empowered the creation of future health professionals that will contribute to the advancement of global health and wellness.

Keywords

integrative medicine, young adults, mindfulness, holistic care, undergraduate research team

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Team Etiology

Michelangelo did it, Leonardo da Vinci did it, worked first as apprentices for master artists, infused themselves with the energy of the master's art, learned technical skills, and then grew beyond their teachers. The *bottega* was the workspace that allowed this to happen.^{1,2} I am in a parallel space (minus being a master artist) and I am thrilled to be surpassed. Over 10 years ago, as faculty, we were all required to invite undergraduate students to be part of a research team in our area of inquiry. The truth was I didn't want any more students than I already had, as they numbered in the hundreds in my courses at a large urban university in the United States. Integrative health and wellness was, and is, my area of expertise and I expected a few stragglers who couldn't get into the other research teams of established disciplines. I was wrong. The other research teams

attracted 5 to 8 interested students who dwindled to non-existence over the next year. For my initial research team, 19 students stepped up and had the energy and enthusiasm of a new fire burning bright. The spark was my focus area, as the students were interested at both personal and professional levels. They wanted to explore the current discoveries happening within integrative medicine because they personally wanted to live in a space beyond pharmaceutical answers to human struggle, and professionally, studying to be health-care

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providers, they wanted to utilize the knowledge gained with their future patients. Ten years and running, this research team has never been stronger.

Teaching is my real area of expertise, thus I wanted all 19 students of the initial student research team to be engaged and grow from the experience. I had a funded research project in process, teaching inner city children the value of yogic movement for their body, mind, and souls, blending these lessons with pragmatic nutritional instruction that children could understand, such as eating according to color as a way to get a variety of nutrients. The university students dove in head first, wanting to help with intervention delivery, data collection, and analysis. I utilized the principles of appreciative inquiry to determine which college student should help with which specific element of the research process.³ The dietetics students designed the nutritional aspect of the intervention, the pre physical and occupational therapy students helped design and deliver the yoga-based programming, called *Move Into Learning*,⁴ and the pre medical students helped with both intervention delivery and data analyses. Today those students are practicing physicians, psychologists, nurse practitioners, and occupational and physical therapists, among other health-care providers, delivering care in a compassionate and wholistic way. Their lens was changed as being part of the bottega. This is all any good teacher can do—offer a different lens for students to try on to see if it helps make their gestalt more clear, both personally and professionally.

Team Focus Clarified

After the first 2 years of managing a 19-person research team, with an eye to keeping all students meaningfully engaged with the work, I realized that a 5-student research team was more realistic given my other professional responsibilities. Since that initial research team was formed a decade ago, I have engaged 5 to 7 students annually to assist and learn from integrative approaches to health and wellness. When possible, I have employed the students as part of research grants, with the team typically being a mix of paid and volunteer learners. I have expanded the research team tasks to include manuscript writing and editing, project coordination, writing code for statistical analyses, and helping sculpt research presentations, to actually presenting at international research meetings. We are able to research a variety of integrative medicine topics by creating both specific and general research projects that range from interventions to literature reviews. For example, we have an ongoing mindfulness-based intervention program for cancer survivors to help with management of chronic pain. This intervention utilizes a great deal of mindfulness practices that include stress reduction and resiliency building

through a body–mind approach, giving survivors the tools to manage cancer, which in today’s world, thanks to scientific advancement, has become chronic disease management.⁵ This mindfulness-based intervention program for cancer survivors is a branch of our main mindfulness program called Mindfulness in Motion (MIM), in which we administer the mindfulness-based intervention to health-care professionals, busy adults, cancer survivors, and college students. The core intervention, MIM, is adapted for the participant type, emphasizing the importance of mindfulness meditation and elements of yoga which aim to improve the health and well-being of participants.^{6–8} The practices developed promote health and wellness not only on an individual level but also on the level of the organization, most notably the health-care field. The MIM program for health-care professionals shows participants the benefits of integrative medicine and equips them with mindfulness and resiliency skills that reduce burnout, contributing to the improvement of quality of care.⁹

In addition, our research team is constantly contributing to and examining the emerging scientific literature on Ayurvedic medicine, namely yoga. For example, my course *Yoga: Theory and Practice* is centered on yoga philosophy and practice, teaching students to connect mind, body, and spirit, enabling them to move toward self-actualization.^{10,11} This bolsters the impact of Ayurvedic medicine on the health of communities at the individual level, locally, nationally, and across the globe. Our research has even expanded from the laboratory to the undergraduate academic field with my creation of the minor in Integrative Approaches to Health and Wellness at our university. With this minor, students study the nature of integrating Complementary and Alternative Medicine into a western approach into health care, exposing students to a variety of approaches to health and wellness and preparing them for medicine in the 21st century.¹²

Undergraduate Study as a Formative Time

These types of research activities are not unusual for masters and doctoral students, but my passion has been for university undergraduates, to expose them to both the research process and excitement of conducting research on integrative approaches to health and wellness. This way, the seed is planted early in one’s educational career to pursue graduate studies that allow for this broader view of advancing health into the future. To date I have brought 10 students to research conferences, have had students win awards for research presentations, and coauthor research manuscripts.^{4,6,9,13–16} Together with my students, we have 12 published journal articles, 3 under review, and done 10 research presentations. Professionally students have landed jobs with the

Dean Ornish program for cardiovascular health, genetic counseling services, and medical study at Johns Hopkins University. These undergraduates burn bright with both enthusiasm and productivity. Undergraduate study may be an opportune time for involving students in integrative health research, before they are focusing on a specific clinical path or specialty, infusing them with enthusiasm for the wealth of what integrative approaches to health and wellness holds. Involving these students in publishing and presentation opportunities is critical so that they see that integrative medicine is growing in recognition and stature within academic medicine. Other research teams with undergraduate students also detail the benefits of involving undergrads in scientific inquiry, namely encouraging collaboration, developing research skills, encouraging professional development, and inspiring future career paths.^{17–19}

Interdisciplinary team make-up in the process of research teamwork, a community of inquiry has been formed, both personally and professionally, with information and discovery happening on both fronts. Each week at our team meeting we start with a prompt to ground the students in the here and now, exploring the boundaries of personal application of researched activities and long-term professional pursuits. The meetings also facilitate a cross-fertilization of ideas, for the students are from different disciplines and backgrounds, bringing a wide range of diverse perspectives to the table. The teams bring together students that otherwise would not have met, so it is a meeting place for like-minded, enthusiastic learners. Studies have shown that collaboration can not only broaden an individual's horizons but also leads to a broadening of perspectives, and researchers can transcend the limits of their personal knowledge while drawing from it at the same time.²⁰ The feedback students receive from each other make the work even more enjoyable, productive, and foster a more innovative and creative environment that helps the work progress to new levels. Team research is crucial for expanding the interpretive lenses of the members and the work at hand.²¹

Team Growth and Development

The process for attracting students to this team? There is none. Instead of the phrase “build it and they will come” from *Field of Dreams*, an American film about baseball from 1989, this research team has been more like souls flocking to the human desire to be in community with like-minded searchers, creating a different way to approach the future.²² Developing such an exemplary research team and promoting a culture of commitment and teamwork is, inevitably, crucial to the success of quality clinical research programs.²³ Why they come

and what they have learned needs to come from first-person voices.

Today, many funded research projects later, students articulate the value of being a part of such a team:

In regards to the impact on students' college careers and personal benefits, it has been a *defining aspect of their college career, adding colorful variety to the scope of experiences in college. It enabled students to connect with other students interested in mindfulness and mind-body medicine, study yoga and meditation, learn firsthand the research process, and generate new knowledge in the field* (R. Srinivasan, K. Zuber, O. Webster, e-mail communication, December 2018). *It gave students a new perspective on how they themselves handle stress, taught them skills in relationship building and self-care, and enabled them to develop mindfulness and yoga practices of their own* (M. Hausmann, K. Zuber, e-mail communication, December 2018). *The experience also enabled students to reframe stress and build resiliency skills, giving clarity and purpose for other academic endeavors and reinforcing aspirations for a medical career* (O. Gabram, e-mail communication, December 2018). *Students have learned collaboration skills as a result of all the different perspectives that each brings, and they are grateful for all the other team members and what they bring to the table* (O. Gabram, K. Zuber, e-mail communication, December 2018).

Students were also significantly impacted in their future and current professional lives. For example, for one student *being part of the research team helped her realize her love for scientific inquiry in the context of the human body and human wellbeing* (K. Zuber, e-mail communication, December 2018). *All students feel that their participation in the lab has pushed them to develop professionally and learn essential steps of the research process, such as grant writing, quantitative and qualitative data analysis, project management, IRB preparation, scientific writing; in short, how to work with an interdisciplinary team toward the same goal and how to spread information about mindfulness to different populations* (O. Webster, R. Srinivasa, M. Hausmann, K. Zuber, e-mail communication, December 2018). *In regards to their future careers in health care, students have expressed the ability to better communicate with professionals, be more flexible in the face of dilemmas, and to develop leadership skills. A student who plans on becoming a physician has a better understanding of the role of the physician-scientist as one with complementary facets: the scientist's methodical thinking augments problem-solving as a physician, while the physician's authentic human empathy is what drives research for the masses. Her experience in this research lab has led her to make evidence-based practice the foundation of her career* (R. Srinivasan, e-mail communication, December 2018). *A student who is in the process of becoming a Doctor of Physical Therapy plans*

on combining the knowledge and skills from the lab with the instruction from her physical therapy program to be the best clinician possible (K. Zuber, e-mail communication, December 2018).

Impact on Work With Patients

Moreover, being on the research team has significantly impacted the way in which students work with patients. For a Doctor of Physical Therapist student, *working with this research team has shown [her] the power of listening and observing rather than oversharing and reacting. This skill of listening has completely changed how [she treats] patients. During an initial evaluation, [she has] found that patients will share with you the exact information needed to properly diagnoses and treat. Additionally, they share information about their lives and the things that matter to them. These things are huge motivators for patients and [she uses] them to encourage improvement and compliance in [her] therapy sessions. [She feels] more empathetic and patient after working with our research team* (K. Zuber, e-mail communication, March 2019). This research team experience has also proven to be impactful in delivery of service for health students aspiring to be physicians in doing clinical work before their professional appointment, specifically helping with their communication skills: *Creating a dialogue within a safe space is something we practice on a daily basis within our research team, which is often mirrored in the work we produce and now a part of how [she chooses] to foster [her] relationships in and outside of work. Without this research group serving as a template for how sensitive [she] must be to those [she] intimately interact[s] with . . . the cancer survivors or [herself] wouldn't have benefitted in the way we did* (O. Gabram, e-mail communication, March 2019). This attunement to patient communication has even been impacting health care internationally, due to a student's experience working at a clinic abroad. When a student was working at a surgical hospital in Ukraine for a summer internship, *the skill of approaching research from interdisciplinary perspectives that [she] learned from being on the research team gave [her] a plasticity of mind that enabled [her] to confidently and compassionately interact with patients of different cultural backgrounds, by remembering to accept them as they are. [Her] work in mindfulness research also enabled [her] to share with patients how one can approach their treatment with more awareness, to take their health conditions for what they are, not what they think they are, without catastrophizing, and redirecting their focus on the positive, namely the progressive improvement in their health that treatment was giving them* (N. Marchenko, personal communication, March 2019). In sum, students on the team acquire skills that benefit them moving forward in

their actual clinical skills of interacting, being present with, and valuing their patients.

Moving Into the Future

In conclusion, the development of an undergraduate research team has led to significant progression in research on mindfulness, meditation, yoga, and Ayurvedic medicine. The collaboration, commitment, enthusiasm, and drive have allowed each member of the research team to make remarkable growth, both personally and professionally, in the realm of integrative medicine. The research team has fostered the expansion of scientifically focused integrative medicine scholars who will move on to have lasting impact in their respective fields. Stimulating such teams and preparing students in such a way for the world of global medicine, health, and wellness is a way of truly ensuring the advancement of integrative health and medicine today and into the future.

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