Team science critical to diagnosis, prevention, treatment of diseases

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Tackling complex biomedical research increasingly requires the development of new approaches to facilitate innovative, creative and impactful discoveries. A group of scientists from Boston University School of Medicine (BUSM) show that a team science approach is critical to solving complex biomedical problems and advancing discoveries in the prevention, diagnosis and treatment of human disease.

The findings, published in the *Journal of Academic Medicine*, showcase a research infrastructure BUSM researchers have created that has resulted in numerous publications, new research grants and training opportunities.

In 2009, the Evans Center for Interdisciplinary Biomedical Research (ECIBR) was established at BUSM as a new organizational paradigm to promote interdisciplinary team science. The ECIBR, made up of investigators from different departments and disciplines called affinity research collaboratives (ARCs), came together to study biomedical problems relevant to human disease not currently under interdisciplinary investigation at the university. Research areas were identified by investigators according to their shared interests. Proposals were evaluated by a peer review process and funded for up to three years.

Using a cross disciplinary team approach, BUSM researchers were able to obtain funding for 123 out of 222 grants, a 55 percent success rate. In addition, the investigators co-authored 421 highly cited scientific publications. Nearly 25 percent of the publications were in the top one percent of most cited articles in their respective research areas

"Initial outcomes of the first 12 collaborations showed the value of this model in fostering successful biomedical partnerships that led to publications, extramural grants, research networking and training," explained corresponding author Katya Ravid, PhD, founding director of the ECIBR and professor of medicine and biochemistry at BUSM. "The most successful have been developed into more sustainable organizational entities, including centers, research cores, translational research projects and training programs."

To further expand team science at Boston University, the Interdisciplinary Biomedical Research Office was established in 2015 to more fully engage the entire university, not just the medical campus, in interdisciplinary research using the ARC mechanism. "There has been a significant shift from an independent approach toward the multidisciplinary team approach. The guiding concept is that diverse teams lead to dynamic, connective thinking and bring to bear solutions that may not have occurred to a single individual working in isolation. This approach to promoting team science may be useful to other academic organizations seeking to expand interdisciplinary research at their institutions," added Ravid.

Provided by Boston University Medical Center