Letter to the Editor: It takes two to build a relationship for optimal integration of basic sciences in medical curricula

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As any relationship grows, trust needs to be developed and only comes from time and effort. This trust will become ever more important when the basic science educators realize that much of what they have traditionally taught is not necessary for training physicians. And clinician educators realize that there is critical basic science underlying their decision-making that they cannot recall. For the former, Dominguez and Zumwalt (2) nicely articulate the needed shift from graduate educator to clinical educator. Basic scientists often do not understand how their discipline is “translated” into patient care. This is also coupled with the trend in medical education to shorten the pre-clerkship curriculum (1) that decreases the amount of time for basic science education. Many basic science educators that I have encountered feel threatened and believe this is lessening the importance of the basic sciences. Many curricula propose to bring basic science back during the clerkship years, but arguably that has been difficult to actually implement. In my experience, one barrier for reintroducing basic science has been that many clinician educators have an inability to unpack their basic science knowledge due to encapsulation. They worry that their capsules of knowledge are empty! A nonclinical example of this is that many of us can tell you when something sounds right or wrong in conversation and writing. However, many times we cannot explain the underlying grammar because we have encapsulated that knowledge. Since much of the basic science knowledge has been encapsulated in physicians, sometimes it is thought that it is not important on a daily basis. Interestingly, the recent pandemic uncovered some of these issues, as a clinical colleague of mine e-mailed me an article about how doctors in New York quickly learned that it was beneficial to place COVID-19 patients in a prone position (3). As a physiologist, I immediately thought about compliance of the lung and ventilation/perfusion ratios to improve oxygenation. However, another clinical internal medicine colleague of mine stated that he never thought about putting a conscious patient in respiratory distress in that position. All of this makes both basic science and clinic educators feel vulnerable, and it takes a significant amount of trust and respect to overcome this over time.

Another way to build any relationship is to remain focused on a common goal. In medical education, it should be to prepare students for a dynamic health care environment to serve patients with the highest quality and safety. This is often recited in medical schools’ mission statements, but does the individual educator consider this? Many basic science educators are so focused on the content that they want to get across, that they fail to recognize what a future physician actually
needs to make a clinical decision. On the other hand, clinician educators are often focused on making future pathologists, internists, or surgeons, as opposed to what an undifferentiated medical student needs. We basic science and clinical educators have to continually keep our pride and egos in check for the vision of what we want our learners to become. Importantly, this should always go back to the patient!

The proposals in the Dominguez and Zumwalt article are critical to help basic science educators develop their career in medical education. However, administrators need to recognize that clinical educators also should have similar incentives and fair work assignments. A clinical educator colleague of mine and I recently gave a Ground Rounds at a university undergoing an innovative curricular reform that naturally included integration as a tenet. Our talk was focused on integration tools that emanated from a joint project of ours, the Aquifer Sciences Initiative. While the faculty at this university agreed that the tools could be helpful, there were concerns around the lack of dedicated time for clinicians and basic scientists to actually develop these tools. Much of these feelings are in contrast to what I have felt in my own integrated curriculum, where I have two clinicians actively involved in my module with offices less than 20 feet from my office. We work together. We know about each other’s profession, background, and family. We challenge each other. We have a relationship. This is critical for continuous growth of both professions. If integration is better for our learners and patients and that is what we are striving for, more attention should be directed toward protected time for basic scientists and clinicians. Only then can relationships be developed.

DISCLOSURES
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REFERENCES
1. Association of American Medical Colleges. Curriculum Reports. https://www.aamc.org/data-reports/curriculum-reports/interactive-data/curriculum-structure-during-pre-clerkship-years. [11 June 2020].
2. Dominguez I, Zumwalt AC. Integrating the basic sciences in medical curricula: focus on the basic scientists. Adv Physiol Educ 44: 119–123, 2020. doi:10.1152/advan.00172.2019.
3. Dwyer J. What Doctors on the Front Lines Wish They’d Known a Month Ago. New York Times, April 14, 2020.
4. Kulasegaram KM, Martimianakis MA, Mylopoulos M, Whitehead CR, Woods NN. Cognition before curriculum: rethinking the integration of basic science and clinical learning. Acad Med 88: 1578–1585, 2013. doi:10.1097/ACM.0b013e3182a45def.
5. Mylopoulos M, Woods N. Preparing medical students for future learning using basic science instruction. Med Educ 48: 667–673, 2014. doi:10.1111/medu.12426.