



Challenges Ahead

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Already disappearing in the rearview mirror but surely forever remembered, 2020 is no doubt a difficult year in recent history. As we are embracing various challenges to stay healthy – physically, mentally, and societally – the year may also serve as an echoing reminder that we need to advance the pharmaceutical sciences beyond what we routinely conduct and propose to do in the laboratory.

A recent conversation with Prof. Bruce Yu from the University of Maryland has led to a new initiative to publish a series of “Grand Challenges” articles in *Pharmaceutical Research*. A grand challenge epitomizes a set of obstacles in research that takes collective efforts and years to solve. It requires innovative solutions and unconventional ideas. Solving such a challenge results in paradigm-shifting a research field and ultimately brings about tremendous benefits in drug development and patient care. I am pleased to see the first article of this series penned by Prof. Yu and his colleagues, which appears in this Issue [1]. The Perspective, *Ridding the Cold Chain for Biologics*, discusses the need and benefits of mitigating the requirement of cold chain in transporting and storing biological products. The timing of the article cannot be overly stressed, as the currently approved mRNA vaccines – for emergency use – lack long-term stability at room temperature. The article also highlights some possible solutions in eliminating cold chain; the idea to learn from life forms that survive in extreme conditions is particularly noteworthy.

I would thus encourage anyone, especially seasoned researchers, to submit a short piece of writing that may shed

light on the breakthrough of an important area in drug development. You may not have a complete solution or a clear picture of the problem, but the suggestion of possible directions would surely stimulate new ideas and collaborations. And that is the purpose of publishing Grand Challenges.

A grand challenge comes with grand ideas. We should also be mindful that any great idea is accompanied by the so-called hype cycle [2]. While the early excitement and investment may be likely tempered by negative results and upsetting criticisms, science cannot advance without fresh ideas. For that, I would value your input and submission dearly.

Happy New Year!

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Editor-in-Chief

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