Forging Paths between the Academic Realm and Public Marketplace

I have been an active ASM member since I started grad school about a decade ago, and I continue to appreciate the enriching experiences that membership brings. I am writing to address the future role of ASM in blazing the path from innovative academic lab discoveries to commercial applications of these findings. As federal research support and academic jobs dwindle, while technology and data multiply exponentially, the entrepreneurial among us will be vital in keeping the life science industry strong. Looking ahead to the 2016 ASM Microbe meeting in Boston, I see several workshops and sessions on careers in industry and startup culture, and I would love to see more opportunities for strategic partnerships through ASM. In my home state of Connecticut, many universities are holding “startup weekend” competitions, while iGEM and Biomimicry design challenges are paving the way as well. I would love to see more initiatives from our vibrant society, from training programs and institutes, startup contests or seed grants, partnerships with business/legal/marketing coaches, and other initiatives to help small teams develop a discovery or idea into a commercial product or service. I hope that ASM can be a leader in forging paths between the academic realm and public marketplace, as our collection of expertise converges perfectly with the cultural rise of the microbiome, genomics, synthetic biology, and environmental sustainability. The time is ripe for a microbial resurgence in the private sector. I invite ASM members with more experience in business and applied microbiology to weigh in, and I encourage students, postdocs, faculty, and other researchers to look closely and hard at your findings to distill the ones that might be the most useful and marketable. Let’s keep this culture alive!

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Magic Bullets

I enjoyed reading Dr. Maloy’s excellent piece in Microbe (S Maloy, “Magic Bullets,” Microbe January 2016, p. 2). It’s great to hear that he was cured with an aggressive regimen, but not everyone is so lucky, and many chronic infections are caused by drug-susceptible pathogens. We had some success with acyldepsipeptide that eradicates a Staphylococcus aureus biofilm in the mouse (Conlon BP, Nakayasu ES, Fleck LE, LaFleur MD, Isabella VM, Coleman K, Leonard SN, Smith RD, Adkins JN, Lewis K, Activated ClpP kills persisters and eradicates a chronic biofilm infection. Nature 503:365–370, 2013), and this will hopefully be developed, but there is nothing against chronic infections caused by gram-negatives. Similarly, there are no new anti-gram negatives in general with a reasonable spectrum. The press did overreact to the teixobactin story. It is a promising new cell wall synthesis inhibitor, and we have not seen resistance so far (Ling LL, Schneider T, Peoples AJ, Spoering AL, Engels I, Conlon BP, Mueller A, Schaberele TF, Hughes DE, Epstein S, Jones M, Lazarides L, Steadman VA, Cohen DR, Felix CR, Fetterman KA, Millett WP, Nitti AG, Zulfo AM, Chen C, Lewis K, A new antibiotic kills pathogens without detectable resistance. Nature 517:455–459, 2015); NovoBiotic is developing it against drug-resistant gram-positive pathogens, including Mycobacterium tuberculosis. While this is a promising compound, it does not act against gram-negative pathogens. I think the problem is solvable (Lewis K, “Challenges of Antibiotic Discovery,” Microbe September 2015, p. 363–369); I refocused my program to search for new anti-gram-negative compounds. And then of course there are other approaches Dr. Maloy mentions, something will work out!

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