Three star scientists announce plan to solve biotech's 'missing women' problem

By Sharon Begley

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They are the biotech equivalent of the “missing girls” in countries with a skewed gender ratio: 40 to 50 companies that would have been spun out of research at MIT labs headed by women were it not for …

That’s the multibillion-dollar question: Why don’t women biologists found biotech companies at the same rate as men? For the last year, three prominent Massachusetts Institute of Technology scientists have been collecting statistics, questioning venture capital partners, and meeting with leaders in academia, science, and business to find answers.

Now, data in hand, the trio’s newly formed Boston Biotech Working Group has taken the first steps to remedy the gender imbalance in biotech, they announced on Wednesday — a pledge signed by five venture firms, including Polaris Partners and F-Prime Capital, “to do all in our power to ensure the boards of directors for companies where we hold positions of power are 25% female by the end of 2022.” (Women now hold 14% of board seats.)

“Service on a board creates access to a network of investors, leading academic scientists, and other key leaders,” said Amy Schulman, a Polaris partner and a current or former CEO or board chair of several Polaris-backed biotechs. “It’s a door opener and a credentialer.”

The pledge by the venture firms, however, did not include a commitment — or even a promise to do “all in our power” — to fund more women biotech entrepreneurs or to increase the number of women in their own ranks. In 2016, less than 2% of startup financing went to companies (across all sectors) founded by women, an analysis by the entrepreneurship-focused Kauffman Foundation calculated last year. And only 8.4% of venture principals (those who make investment decisions) are women, according to a Pitchbook analysis.

Such gender gaps have spawned heated debates about their causes: Is it due to a paucity of women, especially in academia, who want to start biotech companies and have the talent and gumption to do so, or are such women as numerous as men but thwarted by discrimination both overt and subtle?

The latter, according to a Harvard Business Review study, includes asking men seeking venture funding about all the ways their company could succeed but asking women about all the ways they could fail. More in-your-face bias includes a board member telling his female CEO that instead of seeking a new round of funding herself she should send her (male) chief financial officer to make the investor rounds, as a Boston biotech executive not involved in the working group told STAT.

Schulman acknowledged that pledging to fund more female-founded and -led biotechs “has the advantage that there’s no hiding.” She cautioned, however, that it might be perceived as a “two-tier system” if women-founded companies are seen as benefitting from quotas, they might be hobbled in later funding rounds or when they try to hire top talent. On the other hand, funding decisions now are based more on social connections (“we fund who we know and who we like”) than substance, industry veterans say.
Social connections first, science second: How biotech's recipe for success has its limits

“In my experience, men and women in senior leadership roles of startups are universally impressive,” said Collin West, a co-founding partner of the Silicon Valley-based entrepreneurship boot camp Kauffman Fellows Fund. But women, he said, are less likely to be funded because of “an over-reliance on pattern recognition. The faulty thinking goes: Most founders of the past have been men, so most successful startups are led by men, and thus the safe bet is to invest in men.”

Absent explicit funding goals, the working group hopes to increase the number of women founders through a side door, said MIT bioengineer and working group principal Dr. Sangeeta Bhatia.

“Our working hypothesis is that engagement [on scientific advisory boards and boards of directors] can help increase the number” of women-founded biotechs, said Bhatia, who in 2015 co-founded Glympse Bio to develop nano-sensors for drugs and disease biomarkers.

By giving women experience on such boards so they see how companies are run, added neuroscientist and former MIT president Susan Hockfield, “we think we can begin to change things so these 40 missing companies” — most but not all in biotech — “will no longer be missing. We want every good idea to make it to where it can have the greatest impact” on people’s health and lives.

Women’s representation at the top echelons of biotech, including as company founders, is still paltry. About 1 in 5 leaders at small or medium biotechs (by capitalization), and 1 in 7 at large ones, are women, and 1 in 5 directors of large biotechs are women, the working group determined.

Dr. Sangeeta Bhatia (left), Susan Hockfield (center), and Nancy Hopkins Courtesy MIT

The numbers were even worse when the idea for what became the working group hit MIT biologist Nancy Hopkins in September 2018, when she received a lifetime achievement award from Xconomy. (In addition to her research in cancer biology and genetics, in the 1990s Hopkins documented the marginalization of women scientists at MIT, including having much less lab space than men.)

Bhatia introduced Hopkins; Hockfield was in the audience. In her acceptance speech, Hopkins told the story of a woman at a venture firm who carried around a list of 100 VC-funded Boston biotechs from a few years ago; 99 were founded by men.

By digging through public records of local biotechs, Hopkins found that women had long been as rare as palm trees in Boston. In their early years, Foundation Medicine and Verastem (both founded by male MIT professors) had no women in top positions: Foundation had 18 men and zero women as founding advisers, directors, or top management; Verastem had 23 men and zero women on its board of directors, scientific advisory board, and management team. Other companies showed similar imbalances. Of 18 companies Hopkins looked into, their founders, directors, and SAB members totaled 223 men and eight women.

Bhatia, Hockfield, and Hopkins began to brainstorm about why that was and how to change it. At a working dinner at the American Academy of Arts and Sciences in Cambridge in December 2018 with 30 venture partners, university deans, CEOs, and others, the trio formalized their collaboration as the Boston Biotech Working Group.

Through a $175,000 grant from the Sloan Foundation, they surveyed academic-founder rates across seven science and engineering departments at MIT. From 2000 to 2018, current members of those departments founded 250 biotechs. Women founded or co-founded only 10% of them despite making up 22% of these departments’ faculty. If current women faculty had started companies at the same rate as their male counterparts in the same department, there would be 40 to 50 more startups, mostly in biotech. (A few would be in technology unrelated to medicine.)

A women’s health startup tried to drum up interest for a much-needed drug. Many men didn’t get it

The gender imbalance for entrepreneurship was less extreme in engineering — where company-founding rates are nearly equal for men and women but there are significantly more male faculty — than in biology, where gender representation in academia is nearly equal. (That discipline-based difference held true for companies founded by Stanford faculty.)

“Starting companies is part and parcel of engineering,” Bhatia said. When she became a bioengineering professor, her father demanded, “When are you going to start a company?”

In biology, for unclear reasons, women seem to be stuck in a 1970s mindset, Hopkins said, “when we biologists looked at ourselves as basic scientists and the idea of founding companies not only wasn’t possible, scientifically, but was considered nutty.”

Male biologists have recognized for at least 20 years that biology, too, is a translational science. The working group plans to launch several programs to get female biologists in academia to think that way, too. To start off, Bhatia and MIT biomedical engineer Harvey Lodish (a co-founder and SAB member of such biotechs as Genzyme and Millennium Pharmaceuticals) will lead a boot camp for women interested in starting companies or serving on biotech boards; 40 female scientists and
engineers at MIT have expressed interest. The group is also asking academic deans to allow their women faculty to take mini-sabbaticals at venture firms “to see firsthand how things happen and to get introduced to the basic concepts” of financing, Hockfield said.

“We hear from women and men that one reason for women not to [found companies] is that they haven’t been part of the conversations that introduce them to the routes and the people that would make navigating that path possible,” Hockfield said. “The projects we propose have dual purpose: to introduce the VCs and board and SAB members to women who are ready to engage in entrepreneurship; and to give women the vocabulary and network necessary for their success.”

The working group is winning support from some of Boston biotech’s longtime leaders. “I strongly support this effort,” said Eric Lander, president of the Broad Institute and co-founder of biotechs including Foundation Medicine, Millennium Pharmaceuticals, and Infinity Pharmaceuticals (the latter two had women as their first board-hired CEOs). “There are still far too few women in biotech, and the progress is still far too slow,” Lander said. “I’m glad to see initiatives like this one.”

Experts on entrepreneurship, too, praised the biotech working group’s efforts but questioned how effective they would be absent increases in women VC principals and explicit funding goals for women-founded biotechs. Moving the needle will take major steps such as one Goldman Sachs announced last week not to take public any company with an all-male board.

Programs like the boot camp and VC sabbaticals “could be successful if they demystify the funding process,” said Ross Baird, author of the 2017 book “The Innovation Blind Spot.” “It could also be helpful to people who make investment decisions to have more diversity in the room. But allocators of capital tend to invest in people who are like them, and most people who make investment decisions are men.” Unless that changes, women who catch the entrepreneurial bug will continue to face implicit bias from funders, Baird said.

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