

Biolab Sciences president and CEO Bob Maguire secured a grant last year from the National Institutes of Health to fund his lab facility in north Phoenix.

(Photos by Kimberly Carrillo)

Banking on Biotech

Science and Wall Street intersect at the Airpark, where biopharm firms are funding high-tech cures and medical innovations

By Jimmy Magahern

In his nearly 30 years as a research scientist, Hal Siegel has seen his share of miracle proteins, peptides and macromolecules – everything from compounds promising to promote rapid wound healing to stem cell-active immunomodulatory peptides primed to prevent pandemic bird flu.

But lately, the 64-year-old Siegel, a University at Buffalo-educated PhD sporting a healthy David Letterman-esque beard, has been focused on one single compound: NAS911, a treatment for flu patients shown to be more effective than Tamiflu that also exhibits promise in treating lesser-known ailments like idiopathic pulmonary fibrosis (IPF), a respiratory illness that claimed the life of Siegel's dad. It's the

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At BioLab Science's headquarters off the Loop 101 and Northsight Boulevard, researchers develop regenerative medicine products.

(Photos courtesy Biolab Sciences)

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main product marketed by New Amsterdam Sciences, the Scottsdale Airpark bioscience company where Siegel currently serves as chief scientific officer.

"It's a good question: How do you get behind, basically, a molecule that you decide to devote your life to?" Siegel says. "This hard-to-define thing that you believe can bring some benefit to humans. And you really have to look at the potential that it represents."

Siegel gamely expounds on the benefits of NAS911 while Michael Wilhelm, CEO of New Amsterdam Sciences, drinks it all in. "I learn so much every time he speaks," Wilhelm confides.

Wilhelm, a former Wall Street stockbroker who claims to have witnessed the lifestyle former stockbroker Jordan Belfort immortalized in the 2013 movie *The Wolf of Wall Street* ("It was exactly like the movie," he says), epitomizes the other half of the partnership necessary for a successful biotech startup. He's the "persuasive communicator and spokesperson," as he describes himself in his LinkedIn bio – "an expert in lobbying, public speaking and public relations."

It's Wilhelm's job to put all of Siegel's "science-speak" into language that potential investors can understand, a strategy that has placed New Amsterdam Sciences into the realm of promising homegrown biopharma firms for 2018. "It's always a challenge talking to people about what it is that you do," he says. "It's difficult, sometimes, to bring people to understand it without getting into the weeds."

Such is the nature of the biotech startup, a kind of firm that has been flourishing in the Scottsdale Airpark, where health sciences and venture capital investment options continue to intersect. At New Amsterdam Sciences, Wilhelm is basically the media-friendly Steve Jobs to Siegel's wonky Steve Wozniak.



Hal Siegel, chief scientific officer at New Amsterdam Sciences, has recently been focused on NAS911, a treatment for flu patients.

"You're constantly bridging the gap between the things that are really relevant, which is bringing care to people, with trying to raise money," Siegel says. "That's actually what got me out of being a research scientist, where I basically worked in a basement, to being engaged with the world."

"To me, healthcare and life sciences is something that always goes back to saving lives and improving the quality of life for people," Wilhelm says. "That beats being a retail stockbroker."

Not magic, science

In a \$2.3 million office condo previously occupied for brief periods by a design firm, a dental office and a senior-oriented financial services company, Lorenzo Bronson, VP of strategic partnerships at BioLab Sciences, leads a quick tour of the nearly 8,000-square-foot office suite just off the Loop 101 and Northsight Boulevard.

"This was originally home to an architectural firm," Bronson says, circling past 15 pristine, mostly unoccupied offices ("those we keep open for our distributors," he says) to lead the interview into a 36-foot-long conference room banked by floor-to-ceiling glass curved in the form of a cruise ship bow. "That's why the office makes such a nice first impression."

In this majestic meeting room, Bob Maguire, BioLab's president and CEO, and Jaime Leija, its executive vice president, take turns explaining the regenerative medicine products distributed through the new Airpark biotech startup, which basically involve amniotic stem cell injections.

"The FDA doesn't like to use the term stem cells," Leija quickly clarifies, acknowledging the ethical baggage attached to the type of stem cell extraction that destroys embryos, which differs from the technique BioLab's offsite lab facility uses, taking only the amniotic fluid that surrounds the baby and normally ends up on the floor when the mother's water breaks. "We call it liquid allograft."

"The amniotic cells are non-controversial, because they're from a live birth," Maguire adds. "So we say both the mother and the baby are celebrating the process."

"In all actuality it has nothing to do with stem cells; it's about leveraging the growth factors of proteins and cytokines," Leija finally says, steering the conversation away from the contentious debate. "So it actually works with the body's own progenitor cells to, in essence, heal itself."

A former VP for a series of office copier firms who only moved into the healthcare



New Amsterdam Sciences CEO Michael Wilhelm is a former Wall Street stockbroker.

field two years ago, Leija already speaks with the knowledge of a postdoctoral research scientist. "The primary use of our product is for orthopedics and wound care," he says. "It's injected into various parts of the body where there may be damaged soft tissue – ligaments, tendons, cartilage or muscles – and the product has the ability to go in and ignite your indigenous progenitor cells to repair, recreate and replenish damaged soft tissue."

Bronson opens up a laptop and projects onto the conference room's monitor some before-and-after photos of clients, illustrating the many uses of the product. The first one shows a rather grisly shot of a gaping wound left from a ruptured Achilles tendon, caused by what's called a non-healing diabetic ulcer, and the same wound healed after application of the amniotic membrane.

"This patient was a retired police officer from Chicago who had spent close to a million dollars in treatments over a five-year period trying to close that wound," Leija says. "We healed it for less than five thousand."

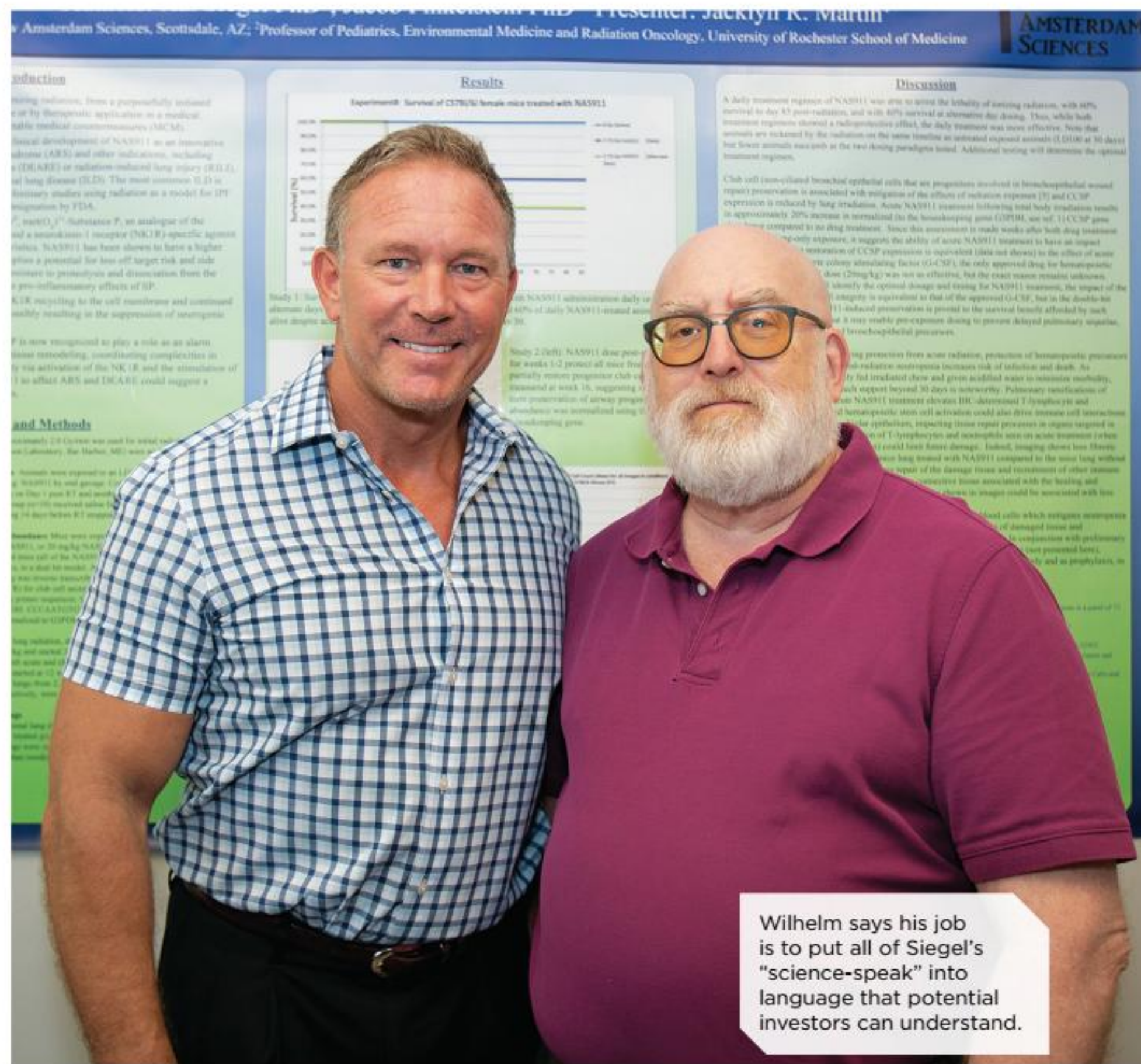
Debbie Rowe, who Bronson introduces as one of Biolab's best distributors, adds that the company's amniotic fluid has aesthetic applications, too.

"A lot of people are getting micro-needling done on their face with the amnio fluid, to get rid of lines and tighten the skin," she says, adding that she's gone through the roughly 15-minute process herself and considers it a healthier alternative to Botox. "It takes about six weeks to get the full effect, and then you can go back and get another treatment." Others have applied micro-needling to their scalps to stimulate hair growth, and Leija says some have even begun using it for "sexual rejuvenation treatments."

Maguire, who says he spent most of his career in the telecom and IT fields, admits that everyone entering biopharm has to learn some hard-to-understand science, but adds that venture capital people want more than breathless press release hype when considering an investment. Last October, Maguire secured a \$224,500 grant funded by the National Institutes of Health (NIH) for his lab facility in north Phoenix, Axolotl Biologix, where the amniotic stem cells are processed from donated placental tissue.

"In the end, all we're doing is creating a product that a physician can use to give our bodies more of what they already have," he says. "As we say, it's not magic. It's science."

For patient Michael Tucevich, whose doctor used the product to repair two torn foot ligaments from a sports injury, that's a good enough explanation.



"I don't know about the mechanics or the specifics," he told a FOX-10 reporter last May. "All I know is that it works."

Risky business

Bioscience is a growing sector not only in the Airpark but throughout Arizona, expanding at a rate of 58 percent between 2002 and 2016, according to studies published by the Flinn Foundation in Phoenix, and creating close to 1,500 bioscience firms.

But it's also a field littered with failures. According to The Independent Institute, an Oakland, California-based think tank, only three out of every 10 drugs investigated in pre-clinical studies ever make it to phase 1 trials, and it can take an average of between 11 and 14 years to get a drug approved by the Food and Drug Administration. Even then, drugs can be recalled for unanticipated adverse side effects, costing firms billions in settlements for failure to report safety data.

"It's not fun to have a failed drug," says Wilhelm, who notes that New Amsterdam Sciences is currently seeking \$20 million to advance human efficacy studies for its compound, which so far has been tested only on primates. "But most of our investors are aware of that risk. They're getting behind something new and, yes, they want to win and see a return on their investment. But

they're all very passionate about treating these particular diseases or conditions that our drug addresses. Most of our investors are actually physicians, because we like to tell our story to people who 'get' it."

Wilhelm adds that even if a drug fails in its initial focus (which, for his NAS911 compound, is central nervous system disorders and pulmonary fibrosis), it can often find success in targeting other areas. The company is already looking to test variations of the compound for treating cancer radiation side effects and Parkinson's disease.

"You know, drugs like Viagra and so many others were identified effective outside of their original indication," Wilhelm says. (Pfizer scientists originally intended the now famous blue pill to treat cardiovascular disorders.) "We could be pursuing these drugs as a treatment for one thing and find out that there's an unmet application we weren't even thinking about. And suddenly, it's a blockbuster in a whole different area."

"That's another thing that's exciting about this field," he adds. "Even if your drug doesn't necessarily perform the way you hoped in one area, you can shift. It's part of what keeps us so passionate about the work we're doing." ■