Employment in the Massachusetts biopharma industry hits all-time high

By Meaghan Casey

According to the latest annual Job Trends Forecast, released by the MassBioEd Foundation in June, the Massachusetts biopharmaceutical industry will remain in a prolonged period of expansion.

The industry reached an all-time high in employment in 2016, at more than 68,000 jobs in Massachusetts. The forecast projects that Massachusetts biopharma companies will add 11,600 jobs by 2022, at an overall growth rate of 17 percent. The greatest rate of growth within the industry (a 32-percent projected increase) will be in employment associated with employers classified as biopharmaceutical manufacturers.

Due to the rising demand to fill positions, 74 percent of surveyed employers in 2017 — up from 52 percent in 2016 — reported that the average time to fill open positions was more than 10 weeks. Similarly, 55 percent of employers reported that it is more difficult to find skilled employees now than three years ago. Job listings in 2016 increased at a rate of 6.1 percent. Geographically, the central and north regions of Massachusetts may have stolen the limelight from host city San Diego at this year’s BIO International Convention when Massachusetts Gov. Charlie Baker announced he would be filing legislation to establish the next phase of the life sciences initiative.

As the original program expires next year, this will be a new investment of up to $500 million over five years. The action is critical to the continued success of the life sciences industry in Massachusetts, and to patients around the world who continue to seek new treatments and cures.

The next phase of the initiative will focus on strengthening investments in human capital to fortify the state’s skilled workforce pipeline, expanding opportunities for companies to access both private investment capital and dynamic public infrastructure resources, developing new scientific innovations that deliver higher-outcome, higher-value treatments and cures.

By Meaghan Casey, MassBio

Gov. Baker launches a new, 5-year, $500 million investment in the life sciences

Massachusetts Gov. Charlie Baker announced he would be filing legislation to establish the next phase of the life sciences initiative.
Reflecting on tenure and looking forward

As we kick off a busy fall here at MassBio, with two of our signature events coming up, I’d just like to extend my gratitude to all of you who have supported this organization over the last decade. It’s hard to believe it’s been 10 years since I first accepted this role as president and CEO of MassBio. What a whirlwind it has been. Today, Massachusetts is home to more than 60,000 biopharma employees, 25 million square feet of lab space and companies with 1,600 drug candidates in the pipeline. We’re looking at another $5 million investment from the state in the life sciences, as well as 11,600 jobs expected to be added in the next five years. When it comes to life sciences, there’s no question: Massachusetts continues to be the world leader. But that doesn’t mean the motivation and drive of those who work in the industry has plateaued. We must continue to forge ahead to tell the story of our industry — from a business perspective, an advocacy perspective and most importantly: the patient perspective.

Part of that, on our end, has included working with the Network for Excellence in Health Innovation and other stakeholders to consider how value-based contracting could work in Massachusetts. With a strong commitment to universal healthcare, innovative payers and a leading life sciences industry, Massachusetts is an ideal place to test out innovative payment mechanisms. With many new treatments and cures in the pipeline, now is the time to consider these new approaches.

I want to thank all of you who came out to support MassBioEd in the recent golf tournament. You’re helping to mold the next generation of biotech employees by giving our students access to cutting-edge tools and training. I also encourage you to join us at this year’s CRO/CMO Symposium later this month to discuss and evaluate the best practices for biopharma outsourcing. We’re happy to be partnering with Biotech Week Boston this year to make it an even more successful event. I hope you’ll also join us for the Patient Advocacy Summit in October. It will bring industry leaders together with patient advocates and other stakeholders to examine ways in which life sciences companies can more fully incorporate the patient voice into the work they do — not just approaching regulatory applications or at commercialization, but throughout the drug development cycle.

We look forward to working with you throughout the remainder of 2017.

Robert K. Coughlin is President & CEO of MassBio.
There is power in numbers!

By aggregating the purchasing power of the member companies within MassBio, the MassBio Purchasing Consortium allows members to have a strong presence in the marketplace so they can bring more to their bottom lines. These case studies show savings actually achieved by MassBio members.

MassBio continuously evaluates the needs of member companies and the existing contracts to ensure the best value.


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Q&A

with

Rich Tester

Associate Director, Chemistry at Celgene Corporation and member of the CRO/CMO Symposium Steering Committee

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Based on your experience at Celgene, what should biopharma companies consider at a high level when they are considering outsourcing R&D or manufacturing?

The key to a successful collaboration is communication. It is important to understand who will communicate with you and what their commitment to transparency is. This applies not only to the CRO/CMO you are working with, but for your internal team. Often, organizations see outsourcing only as a way to save on costs or add flexibility to their workforce. It is important to understand that internal resources need to be committed to match and complement the strengths and weaknesses of your outsourcing partner. The best value is achieved when both sides understand the goals, react appropriately as circumstances dictate, and strive to bring the project in on time and budget. A robust exchange of information is needed in order to facilitate any important project.

What changes, trends or new challenges in biopharma outsourcing have you noticed over the last year?

I’m not sure I would confine it to just the last year, but I have seen a migration away from simple cost-based decision-making when considering outsourcing options. Time and time again, we have seen that making decisions based on cost alone can lead to a “you get what you pay for” outcome. It seems the industry has recognized the value of the expertise our outsourcing partners can bring to the table. Decisions are being made more and more on strategic alignment and longer term development of the relationships we have with our partners.

Lastly, in your opinion, what’s the best reason for a CRO or CMO to attend this year’s event? And what’s the best reason for a representative from a biopharma company to attend?

I believe that the sourcing groups are looking for strategic partners. It is very difficult for a sourcing lead to keep up with the ever changing landscape of CRO/CMO offerings as the organizations that provide services become more sophisticated. It is important to keep in touch with scientists and managers who are looking for these services. It not only provides the CRO/CMO with an opportunity to try and gain new clients, it also allows them to gauge the pulse of what industry is looking for in a strategic partner.

As this landscape continues to evolve, it is just as important to keep up with the incredible variety of services being offered. Many local companies can provide services that we may not be aware of. This meeting gives me the chance to meet with vendors that might not otherwise be on my radar. It also allows me to touch base with vendors I do know in order to see how their service offerings are evolving and to let them know about any future needs we think we may have.

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Now in its sixth year, the MassBio CRO/CMO Symposium shines a spotlight on the strength and success of the contract research and contract manufacturing communities in the Commonwealth. The event draws more than 300 attendees to discuss and evaluate the best practices that have evolved in shortening time to market. MassBio is breaking new ground by partnering with Biotech Week Boston to make this year’s event even more interesting and successful. A series of case studies, interactive panel discussions, roundtable/breakout sessions, one-on-one meetings and networking sessions will provide ample time to explore the various techniques and approaches being used by both virtual and established companies. For more information or to register, visit massbio.org/events.
Gov. Charlie Baker hinted at his forthcoming announcement to extend funding for the state’s life sciences initiative when he spoke at the MassBio Annual Meeting in March.

In his speech on the first day of the Annual Meeting, Baker addressed four elements that his administration can and will play a positive role in: investment in job creation; workforce development (particularly through STEM education); R&D partnerships; and convergence, or the merging of science, engineering and data. He also outlined plans for public transportation upgrades and adding more affordable housing as an important priority for the life sciences industry statewide.

“This is about jobs and it’s about success, but it’s also about discovery and inquiry and game-changing opportunities to improve the lives of so many people, not only in Massachusetts, but around the world,” said Baker.

“Gov. Baker understands the importance of a vital life sciences industry to Massachusetts’ economy and to its residents — from well-paying jobs to the development of new cures,” said MassBio President & CEO Robert K. Coughlin.

“More importantly, the Governor remains focused on how the state can improve the lives of its residents through an improved healthcare system.”

Baker’s support comes at a good time, as much of the conversation at the two-day meeting centered around the future of the life sciences.

“This is an exciting time for our industry, but also a time of uncertainty,” said Coughlin.

“The broader issue of healthcare access and costs remain at the center of the debate. We’ll continue to advocate for what’s right for the industry and, more importantly, what’s right for the patients.”

Patients played a dominant role at this year’s event. A handful of individuals living with conditions such as hypoparathyroidism, HIV and Gaucher disease shared their personal stories, and Dan Schorr, a cancer survivor, served as one of the keynote speakers. In 2014, Schorr was diagnosed with an aggressive form of lymphoma on the same day that his wife announced she was pregnant with their first child. He underwent six rounds of chemotherapy, celebrating after each one and sharing his progress through his blog called Humor with Tumor.

Schorr urged attendees: “Don’t lose sight of your patients. Go in to your companies and ask, how do we put the patient story into the work we do on a daily basis?”

Focusing on biotech in the era of real-world evidence, one group of panelists discussed how companies can plan for bringing new treatments to market at a time when scientific discovery is advancing faster than innovations in insurance and payment models.

“We’re working on a new strategic framework for how the innovation ecosystem might evolve,” said Gigi Hirsch, executive director of the MIT Center for Biomedical Innovation. “It focuses on delivering more value faster to patients, but in ways that work for all the stakeholders. Our model is anchored in how the downstream decision-makers define value – the payers, the patients and the providers. We think about innovation moving from right to left, starting by understanding what value means to each of these players and actually embedding these stakeholders and their inputs into the evidence, planning and production process across the life cycle of a product.”

Another panel tackled the broad scope of convergence in the device, diagnostics and digital space.

“We spend our time thinking about how we can get products to market faster, better and cheaper,” said Rachel Sha, vice president of central transactions and digital business development at Sanofi. “We see technology as playing an important role in that by filling in the gaps and holes in the understanding of a disease and a patient’s life. Today, patients go in and see their physicians periodically throughout the year, but we don’t have the full picture of what’s going on day-to-day. Technology, be it wearable sensors or diagnostic devices, fills in the blanks outside of the healthcare institution. That plays a role in how we think about developing drugs and serving our patients.”

Anne Deconinck, executive director of the Koch Institute for Integrative Cancer Institute at MIT, spoke about how the institute has brought together biologists and chemists with biological, chemical, mechanical and materials science engineers, computer scientists, clinicians and others to present fresh perspectives and an interdisciplinary approach to advancing the fight against cancer.

“The point was to merge these distinct disciplines and expertise into a unified whole,” said Deconinck, describing the convergence model as going beyond collaboration. “It’s so much more than the sum of its parts.”

“Just like when physical science and engineering combined to bring us computers, the Internet, tablets, smartphones and so forth, now is the time to bring together life sciences with engineering and computer science to overcome some of the global health challenges,” she continued.

A third panel focused on the continuation of the Cancer Moonshot, covering the Massachusetts-centric task force in this initiative, and discussing the landscape of the Boston/Cambridge ecosystem.

“What is more priceless than our health?” asked Dana-Farber Cancer
Institute President & CEO Laurie Glimcher, urging attendees to advocate for continued funding for the Cancer Moonshot. “We’re in a revolutionary time for research. We really can go from bench to bedside.”

Breakout sessions covered three tracks — better business, trends in science and convergence. Topics ranged from pain and addiction to aging, next generation diagnostics and more.

During a discussion on the challenges the future generation of the industry faces, talk turned to immigration laws and how the U.S. — and Massachusetts especially — can continue to attract the brightest minds from around the world.

“If that’s threatened, we’re going to be left behind,” said Johannes Fruehauf, co-founder of LabCentral. “We need to continue to be a magnet. The next generation might come here for studies, but also for a chance to reinvent themselves. We need to give them that opportunity.”

The Annual Meeting also included an awards ceremony, during which David Meeker, former head of Sanofi Genzyme, was honored with the Henri A. Termeer Innovative Leadership Award.

“To be honored with an award in Henri Termeer’s name is special,” said Meeker, who left the company at the end of June. “I learned a tremendous amount from Henri.”

He spoke at length about accountability and the future of healthcare.

“Our obligation is to be responsible partners in this healthcare ecosystem,” said Meeker. “We have to price our drugs responsibly, we need to self-regulate and we need to be advocates for responsible solutions. This healthcare system matters. Patients need access and they need to be able to trust that the system is making the best decisions in their interest.”

Pfizer, which recently broke ground on a new clinical manufacturing facility in Andover, was honored with the Leading Impact Award. Hingham High School, which was selected as a BioTeach school in 2009, was honored with the Joshua Boger Innovative School of the Year Award.

“We’ve performed more labs this year than freshman and sophomore years combined,” said Hingham High student Emma Chase. “The world of science fascinates me. I hope to take anatomy and physiology next year, along with advanced placement biology, and eventually put this to use in the medical world.”

“Hingham High’s biology and biotech programs have opened doors for me,” said student Conor Lowther. “Without BioTeach, I never would have developed such a passion for biotechnology and its application in the real world.”

Gov. Baker used the opportunity to outline his commitment to investing in job creation, workforce development, R&D partnerships and convergence.

Leadership expert Betsy Myers gave the closing keynote.

Cancer survivor Dan Schorr served as the opening keynote speaker.

MassBio President and CEO Robert K. Coughlin and MassBioEd Executive Director Peter Abair presented student Conor Lowther, teacher Livvy Kates and student Emma Chase of Hingham High with the Joshua Boger Innovative School of the Year Award.

Robert Coughlin, left, and board member Mark Bamforth, right, presented the MassBio Leading Impact Award to Pfizer. Accepting the award for the company was Morris Birnbaum.

David Meeker was presented with the Henri A. Termeer Innovative Leadership Award.

Panelists Anne Deconinck of the Koch Institute and Ryan Egeland of Medtronic discussed the broad scope of convergence.

Patrice Milos of Medley Genomics and Catherine Parham of Shire Pharmaceuticals participated in a breakout session on next generation diagnostics.

Chris Loose of Frequency Therapeutics, Bruce Mitlak of Radius Health, Ailis Tweed-Kent of Coocoan Biotech and MassBio’s Rakhshita Dhar discussed opportunities in research and treating disease of aging during one of the breakout sessions.
A legacy at MassBio: 10 years and counting

This September, Bob Coughlin marked his 10th anniversary as President & CEO of MassBio, and his accomplishments over the last decade for MassBio, the life sciences industry and patients are impressive, to say the least:

• MassBio membership has grown from 579 to 1002
• MassBio annual revenue has grown by more than 75%
• Industry jobs in Massachusetts grew by more than 37%
• More than 9 million square feet of lab space was added in Massachusetts
  • 18 of the top 20 biggest pharmaceutical companies in the world now have a presence here
Most importantly, since the inception of the industry in Massachusetts, companies headquartered here have developed therapies for patient populations of 232,434,000 in the U.S., and 1,507,722,000 around the world.

It’s clear Coughlin’s decade leading MassBio has focused on being a champion for patients by ensuring innovative companies have the best environment possible to research, develop, and commercialize breakthrough therapies and cures for people around the world who need and deserve them.

Massachusetts biopharma industry hits all-time high

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Massachusetts have seen job listings rise at the greatest rates – 35 and 47 percent respectively, outpacing all other areas of the state. Fortunately for the industry, Massachusetts public colleges and universities are increasing rates of graduation from biotechnology-related degree programs at a higher rate than national peers. However, the numbers still are not high enough to keep up with the industry’s rate of growth in entry-level positions. Associate degree programs are doing the best at meeting demand, increasing the number of graduates in biotechnology-related programs by 60 percent between 2011 and 2015 to meet a 76-percent rise in entry-level openings at the associate level. The greatest disparity between graduates and job openings was at the Ph.D. level, with just a 4-percent increase in graduates from Massachusetts public universities versus a 114-percent increase in Ph.D.-level job listings between 2011 and 2016. There will be a significant need to produce more graduates with the technical skills, competencies and know-how to drive growth and innovation in the coming years.

The research and analysis found in the Job Trends Forecast was conducted by Mark Bruso, Manager of Labor Market Research, under the direction of MassBioEd Foundation Executive Director Peter Abair. In addition to the Massachusetts-specific data, the forecast also includes comparisons on salary and hiring requirements with other life sciences clusters in the U.S. It was released at MassBioEd’s Life Sciences Workforce 2017, its second annual conference on life sciences workforce trends. The event was held at Northeastern University and featured 27 industry and higher education speakers, as well as Lt. Governor Karyn Polito, who provided keynote remarks.

Gov. Baker launches a new, 5-year, $500 million investment in the life sciences

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affordable therapies to patients, and leading the convergence revolution in digital health, biopharma, medical devices and engineering. The funding will continue to be managed by the Massachusetts Life Sciences Center (MLSC).

“We are committed to supporting the public-private partnerships and strategic investments that have made Massachusetts a global leader in the life sciences, research, development and medical advancements,” said Baker. “This proposal empowers the Commonwealth and the Massachusetts Life Sciences Center to continue that success, attracting world-class companies in innovation and technology, giving researchers the best available tools and educational environment, training our workforce and providing successful careers here in Massachusetts.”

MassBio President & CEO Robert K. Coughlin applauded Baker for his vision and commitment, while highlighting how the life sciences initiative and the MLSC has cemented Massachusetts as a global leader in the life sciences.

“Massachusetts’ unique combination of workforce, academic institutions, hospitals, infrastructure, and financing opportunities allowed us to develop, over the last three decades, a leading biotech cluster,” said Coughlin. “The addition of the initiative made us the best in the world. The announcement by Governor Baker recognizes that in order to remain on top, we must continue to foster a consistent and welcoming business environment for life sciences companies to grow and move here.”

With a $147,000 average salary, $9 billion in total payroll, and an expected 11,600 new jobs over the next five years, the life sciences industry is a huge economic engine for this state. “For Massachusetts residents, Gov. Baker’s actions mean more high-paying jobs in all corners of the state for years to come,” said Coughlin. “Most importantly, it means more breakthrough cures and treatments will reach patients faster.”

“The bill is a clear signal that the administration’s goals are closely aligned with those of the state’s most prominent industry,” said Travis McCready, President & CEO of the MLSC. “We’re looking forward to improving upon the first iteration of this initiative and continuing to support Massachusetts’ position as the global leader in life sciences.”

Included in the proposal is $295 million in capital authorization that will enable the state to strengthen the ecosystem through collaborations that maximize third-party investments. The proposal also extends and expands the authorization of a state tax credit, permitting the MLSC to award tax incentives for an additional 10 years, while increasing the total annual cap on awards to $30 million.

Since its inception, the MLSC has invested more than $650 million across the state, including more than $429 million in capital infrastructure grants, giving Massachusetts multiple state-of-the-art facilities that have improved research, manufacturing and administrative capabilities; more than $116 million to medium-to-large companies committed to growing jobs within the Commonwealth through the tax incentive program; $62 million outfitting lab space in middle schools and high schools, advancing scientific research, subsidizing internships and developing programs to educate the state’s workforce; and $33 million via grants and loans for small-to-medium sized businesses in the life sciences.

The announcement came at the start of BIO’s annual convention, which was held at the San Diego Convention Center this year. Two days later, on June 21, Baker addressed the more than 16,000 biotech leaders who attended the event, reiterating his promise to the Commonwealth and setting up a warm welcome for 2018, when BIO will return to Boston. Celebrating 25 years of innovation, the convention will be held June 4-7 at the Boston Convention Center.

Andra Stratton has become a strong voice in the rare disease community

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by the disease. The organization serves as a resource, increasing awareness in the general population, as well as in the medical and insurance communities. It advocates and acts as a catalyst for new patient diagnosis by assisting healthcare professionals in the understanding of lipodystrophy trends, physical attributes and clinical symptoms in order to aid in the advancement of knowledge, treatment and future research. Stratton works closely with lipodystrophy stakeholders and has been the patient voice in meetings and conferences with lipodystrophy experts in the U.S. and Europe. Earlier this year, she was named one of the 100 most influential people in the healthcare industry by PM360.

“My daughter is a part of our lives. They see my needles and they recognize when I need rest. I’m raising little advocates. For teens, body awareness is a big issue, but I’m teaching them to see that fat can sometimes be a real good thing.”

Because there are no cures for the disorder yet, management becomes crucial. Tools that vary in efficacy include diet and exercise, traditional therapies for metabolic syndrome such oral and injectable diabetes treatment, hormone replacement therapy, statin therapy and cosmetic options. Stratton was fortunate to have been raised by very health-conscious parents, who didn’t expose her to a lot of sugars and trans fats, which unwittingly helped her in the long run. That, however, is why diagnoses is so important. Stratton says there are a few hundred people in the U.S. diagnosed with familial partial lipodystrophy, but in reality, there are probably thousands living with it.

“What’s been exciting is that we’re getting new individuals reaching out every two or three weeks, so awareness is increasing,” said Stratton.

Treatment is also increasing. Stratton was one of the patients to participate in the clinical trial for Myalept, a leptin replacement therapy developed by Cambridge-based Aegerion Pharmaceuticals, a subsidiary of Novelion Therapeutics. It was approved by the FDA in 2014 for generalized lipodystrophy and further investment is being done in partial lipodystrophy.

“It’s been life-altering for me,” she said. “My health has significantly improved and it’s helped to normalize my appetite to some degree. I’ve also learned to balance and manage my fatigue.”

Another Cambridge-based company is also working to develop a protein target to lower levels of triglycerides in the blood. It would help to slow down the metabolism and/or remove triglycerides from the bloodstream.

In addition, three other pharma companies are close to opening or designing a study.

“That’s not bad for a rare disease,” said Stratton. “My hope is that in the next few years, we get closer to full diagnosis in the U.S. I’d also love to create full-service centers for patients who are currently seeing six or more physicians for their different symptoms.”

“It’s promising,” she continued. “A few years ago, all we had was advice and traditional therapies. It’s tough to hear a diagnosis and think, ‘now what?’ Now, we have information, physicians’ guidelines, clinical trials, therapies and continuing opportunities to try something new.”

Andra Stratton, co-founder and president of Lipodystrophy United, tries to live life to the fullest.
A LONG ROAD TO DIAGNOSIS

Patient advocate Andra Stratton has become a strong voice in the rare disease community

By Meaghan Casey

For nearly four decades, Andra Stratton lived undiagnosed with a condition causing an uncontrolled loss of fat tissue — which is much more alarming than it might sound. A rare genetic disorder, familial partial lipodystrophy causes a drop in an important hormone called leptin that helps to regulate energy balance by inhibiting hunger. With a person’s metabolic system out of balance, fat can accumulate where it shouldn’t — in the blood or organs — which can lead to life-threatening complications such as insulin resistance, diabetes, high cholesterol, fatty liver disease, pancreatitis and heart disease.

The exact location of fat tissue loss varies from person to person. Some people with lipodystrophy may have areas on their body that look very thin, while other areas might appear large. Some might have very little visible fat tissue anywhere on their bodies and may appear extremely muscular. The latter has been the case for Stratton.

Stratton admits that it’s been easy to recognize the signs in retrospect. As a child, she had asthma, multiple bouts of pneumonia and other health issues, and as she approached her teens, she became increasingly thinner and more muscular looking.

“People kept saying I was just losing baby fat, but it was more than that,” said Stratton. “My appetite became a problem and I had headaches every day. I remember thinking that everyone must have been just as hungry as I was, but they managed it better.”

Most patients with lipodystrophy have markedly increased appetites. Yet, it wasn’t until Stratton’s first pregnancy that symptoms revealed themselves. Doctors were alarmed when her blood sugar level topped 500 milligrams per deciliter. She was induced at 36 weeks and suffered eclampsia, a rare but serious condition where high blood pressure results in seizures.

“It was terrifying to think I almost died,” said Stratton. “Still, even after recognizing there was a bigger issue with my health, no one was delving any deeper. Outside of a physician I saw in college, who thought it might have been Cushing’s syndrome, but ruled that out, no one was able to give me a diagnosis.”

Partial lipodystrophy it is commonly misdiagnosed as Cushing’s or mistaken as problems associated with polycystic ovarian syndrome or metabolic syndrome while the rest of the health problems are ignored. Stratton’s second pregnancy, however, turned out to be just as dangerous, and her cholesterol, blood pressure and blood sugar levels remained high. Then, at age 37, she had an abnormal mammogram. She met with an endocrinologist, which turned out to be a turning point.

“He knew exactly what I had,” said Stratton. “It wasn’t what I was expecting, but it was a relief it wasn’t breast cancer. It was the last piece of the puzzle that I didn’t really know I was searching for.”

Stratton began to get involved with advocacy groups to learn more about familial partial lipodystrophy. Her first trip was to San Diego for an event in 2012.

“I finally met people who looked just like me and I heard their stories,” said Stratton. “After that, I just jumped right in to the world of rare diseases and put the wheels in motion to start my own foundation.”

Today, Stratton is co-founder and president of Lipodystrophy United, an organization of committed individuals living with lipodystrophy. Its mission is to provide an interactive community, facilitating support and education for anyone affected.

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