

# Biotech firm Aptagen thrives in rural York County



G. Thomas Caltagirone, center, president & CEO of Aptagen, LLC, with staff members of the biotech company he started in Jacobus 15 years ago. PHOTO MARKELL DELOATCH

## By Ioannis Pashakis

Investors were not interested in Thomas Caltagirone's new biotech startup in 2004.

The entrepreneur and neuroscientist wasn't surprised by the revelation, given that he wanted to start a laboratory in Jacobus, York County, where he would be competing for employees with companies in Philadelphia and throughout Maryland.

But in 2006, Caltagirone did it anyway, planting his company, Aptagen, in the tiny town in rural York County.

Over the 15 years since it was first incorporated, Aptagen has had to be creative with its capital and finding ways to save money without bringing in the regular funds that an investor provides. Caltagirone expected a lack of interest in the new venture because he wasn't only trying to start a laboratory in a region known for manufacturing, but the product he wanted to create was unknown even to most scientists.

Aptagen specializes in creating aptamers, synthetic antibodies made from strands of DNA that can bind themselves to targets specified by Aptagen's clients. Aptamers differ from antibodies — organic proteins that fight diseases — in that they can be more effective at targeting certain cells like the tissue of a cancerous tumor, said Caltagirone.

Aptagen is a service-based business that develops aptamers for clients that use the molecules in their own products. For example, if a company were to employ Aptagen to create molecules to attach to a certain disease, the client would then attach something to kill that disease after the aptamers found it.

The company's clients include other biotech and pharmaceutical companies. Aptagen currently has a \$1 million contract with the CDC.

"In this field right now, there is an inflection of growth like a gold rush. We have companies coming to us because they are prospecting and we are applying the picks and shovels," Caltagirone said. "We are one piece of the entire chain of development of

these products—an important piece."

## Intern scientists

Creating a laboratory in Jacobus meant that the budding Aptagen could save money on rent but the company was cut off from the east coast's largest tech centers that would generally provide the employees for a biotech company like Caltagirone's.

Aptagen's solution was to begin a six month internship program to attract students from some of the top colleges in the country to train at the laboratory, many of which have gone on to become full employees of the company.

The Jacobus lab employs 10 people and has three interns. Interns work as scientists at the laboratory, participate in meetings where they present scientific journals pertinent to the lab's work and meet with Caltagirone on a weekly or biweekly basis. Interns are given a paid stipend from Aptagen and are provided free housing in the area. The lab's location may be separated from larger cities, but the opportunities at the lab are enough to interest students to come to the region, said Jacob Shaw, a former intern and current project manager at Aptagen.

"An entry level lab tech position at a large company may pay well, but the work is usually repetitive and can only give you so much experience," he said. "While at Aptagen, we are always looking for new things to test and our staff strongly encourage branching out to learn new techniques or machinery."

The offer is particularly interesting to students because of the real world experience it gives them as scientists, making the internship a strong line on any CV.

"When I was an intern, I was assisting in research and development client projects along with grant writing, which is very unlikely for a senior in college," Shaw said.

The internships have been so successful in training Aptagen's interns, that Caltagirone has found the young mentees to be some of his best hires over the years.

among the interns proves difficult since most students want to continue on to graduate or medical school after their time at Aptagen.

Caltagirone is trying to solve that problem by partnering with universities like Baltimore-based John Hopkins. If Aptagen is able to partner with a university, the company could offer to sponsor its employees to take part time classes to get their Masters or PhDs, while still retaining talent.

## Aptagen's next steps

The past 15 years have been kind to the Jacobus laboratory, which is still managing to grow in size and completes around 10 projects a year.

With its current model as a service based business, Caltagirone said he believes he could grow the lab to employ a maximum of 20 employees. However, he sees an opening in the market for Aptagen to manufacture its own diagnostic or therapeutic products using the aptamers it makes in the lab, which could cause the company to grow much larger than the 20 employee limit.

"Right now we are 100% a service-based company. I would like to shrink that down to 20% custom services and 80% product," he said. "I am ready to pull that trigger but we need certain things in place and we are working toward that goal."

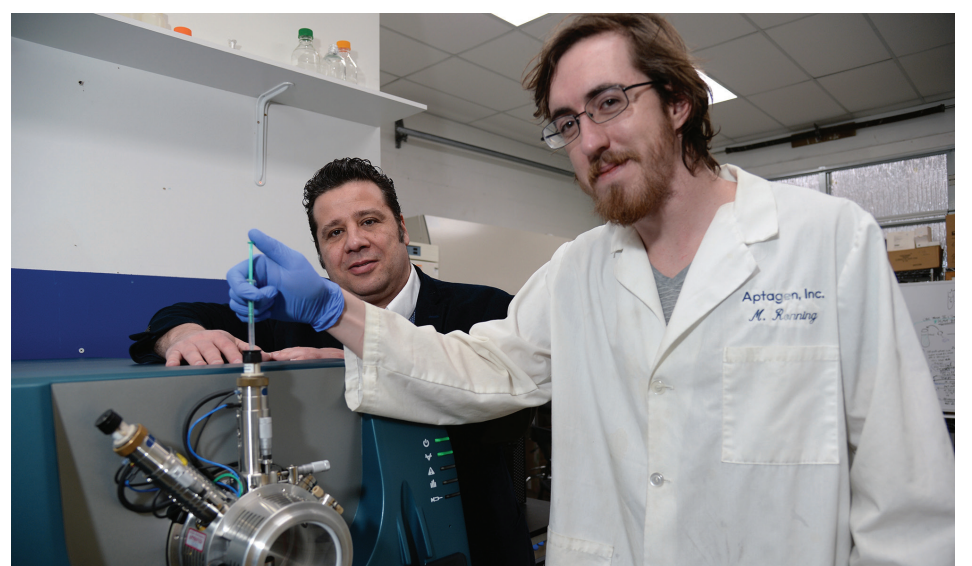
"I liken this to training the next generation of scientists—we rarely hire from outside," he said. "I do have two PhDs that didn't go through the program, but we generally go by the philosophy of hiring from within."

Aptagen's team of scientists, mostly in their 20's, proved to be a strength of the company, according to Caltagirone, who said that his staff is in its prime and is always coming up with new ideas.

While the program has been a driving effort in the company's success, retention



G. Thomas Caltagirone, seen Wednesday, January 22, 2020, is President & CEO at Aptagen, LLC. The biotech company is celebrating their 15th year at 250 North Main Street, Jacobus. PHOTO MARKELL DELOATCH



Adam Poff in the lab with Aptagen founder G. Thomas Caltagirone. PHOTO MARKELL DELOATCH