

APPENDIX

STATEMENT TO THE
N.J. SENATE ECONOMIC DEVELOPMENT TASK FORCE
BY CAROLE MATTESSICH, ESQ.,
CAPE MAY COUNTY ECONOMIC DEVELOPMENT DIRECTOR

February 23, 2017

Good afternoon, Chairman VanDrew, Committee members and Task Force members. Thank you for the opportunity to tell you about the promise that unmanned aerial systems – “UAS,” or “drones” – hold for Cape May County.

As you know, our County is the veritable “South Jersey,” a peninsula at the far southern end of the State. It’s sometimes referred to as the end of the world – a good thing if you’re looking for a great place to enjoy a vacation or restful stay, but a challenge when it comes to economic development.

The County’s unemployment rate, relatively low during tourist season, spikes during winter months to a level often the highest rate in the State. I’m attaching to the written version of my testimony a copy of the latest unemployment figures compiled by Dr. Richard Perniciaro, with whom you are all familiar.

Seasonal jobs in our area are just that – available only during particular months – and they are rarely high-paying. Meanwhile, housing prices have risen significantly in recent decades due, in part, to the spending power of second home owners whose average income levels typically exceed those of Cape May County residents. There are geographical constraints as well – for one thing, the County is almost 50% wetlands.

The upshot is that, for many years, we have found it difficult to attract new, non-tourism based industries in the same rate as our northern neighbors who enjoy more developable terrain, and thus more extensive infrastructure like rail access and multiple highways.

These factors leave our residents with a singular lack of year-round, well-paying jobs ... and, as this Committee already has recognized in its draft findings, ultimately that means that a large number of our young people can’t afford to stay, or return, home to live or raise families after graduation.

We are hopeful that drones will help to change this picture.

Four years ago, under the leadership of Cape May County Freeholder Will Morey, the County identified drones as an industry that might be a perfect “fit” for Cape May County. At that time, economic impact projections were high; AUVSI, the largest and highly-regarded trade association, projected an \$82 billion domestic impact, and more than 100,000 new jobs, in the 10 years after drones are permitted to operate in American airspace. Those estimates proved conservative. Within the past two months, Price Waterhouse Coopers (PwC) has estimated the current total addressable market for drone powered business operations to already be \$127 billion on a global basis, with the

United States having one of the largest potential markets for commercial applications of drone technology

Along with exponential industry growth and the functional promise of this new, disruptive technology, there are good practical reasons why drones “fit” in Cape May County. The industry will have a low impact on our natural environment; it will provide year-round, well-paying, STEM-oriented jobs; and those jobs will be varied, for example, including service companies (flying drones for specific customer uses); manufacturers of airframes, payloads, and parts; trainers, and more.

And ironically, drone-related companies are attracted to the very features that may detract with other prospective industries. Drone companies seeking to engage in R&D are thrilled that the County is over 50% wetlands, and surrounded by water; they can fly their drones in spaces where there are no people or buildings below. They also are thrilled with the airspace – complex enough to validate testing results, but not restricted as in many other parts of the Northeast. And they love the South Jersey lifestyle! We are close enough to three major metropolitan areas to make productive daytrips, returning to a homebase that provides great office space, good neighbors, and a lovely natural environment.

Once Cape May County set its sights on the drone industry, Freeholder Morey and I networked at industry conferences, and we reached out to establish relationships with educational institutions that were getting heavily involved in drone research – principally NJIT and Rutgers, and also, ultimately, our own Atlantic Cape Community College. We also encouraged the Delaware River & Bay Authority, which operates the Cape May County Airport, to join with us in these exciting new ventures.

With the blessing of our Congressman, Frank LoBiondo, who appeared as a key speaker, in 2015 we held our first Annual UAS Conference. It attracted people from throughout the East Coast and kept us talking with fellow New Jerseyans about how to get the industry started here.

Most important, we adopted an action-oriented agenda. We began holding monthly “Innovation Forums” that continue to this day, drawing drone innovators from across New Jersey as well as surrounding states. Through this and other activities, we have grown a core group of over 200 innovators and companies that feel comfortable traveling to Cape May County – from distances as far as Connecticut – to be with one another to share their excitement about drone technology. This group stretches traditional notions of competition, emphasizing spirited collaboration and innovation.

Our Action Agenda also has included activities such as:

- Drone camp for middle schoolers, which encourages STEM-oriented students; Cape May County Technical High School, NJIT and DRBA joined in this activity.
- We became the first public airport in the State to host actual UAS flight campaigns of high-altitude, long-endurance drones.

- Last summer, we hosted an event for United Nations representatives that addressed new U.N. guidelines for using drones in international disasters; our simulation of a UAS ship-to-shore rescue gained international recognition.
- OEM/First Responder exercises at Cape May County Airport
 - In Spring 2016, we held a user conference for OEM units from all New Jersey counties;
 - Last Fall, we hosted a flight campaign in which Verizon International partnered with First Responder agencies to test new technology that will enable cell coverage by airborne drones, in disaster areas where cell coverage has been knocked out; and
 - We currently are in planning stages for another, even broader First Responder flight campaign.

I cite these events not to be self-congratulatory for the County, but to report to you that we have found that an action-oriented, substantive approach results in the presence and significant engagement of drone innovators in our area. The owners and key players of start-up tech companies are remarkably talented, bright and energetic individuals who demand substance and are loyal when they receive it. Just like early Internet innovators, however, they frequently hold two or three jobs just to make ends meet even as they are creating some of the most intricate and useful technology in the world, and that made it particularly gratifying to learn that the State may now focus special attention on this industry.

Today, you'll hear from some of the innovators who share their efforts and enthusiasm with us in Cape May County. With your permission, I also will hand in for the record a letter from an innovator who would have liked to join us today but was committed to appear at a conference in the mid-West. Eddie Obropta is a former Cape May County resident who went through the Middle Township school system, then on to MIT, and now operates a very successful drone endeavor.

These innovators are the best evidentiary support you can get for the proposition that the State should be putting wind in their glorious sails.

Finally, we want to report to you that, buoyed by the response of innovators to our UAS activities, Cape May County recently has invested in several additional steps:

- We obtained our own "Public Use COA," FAA permission to fly in airspace above the County. (A copy of the airspace chart is annexed to these remarks.)
- We are launching an incubator/maker space at the CMC Airport. We have rented premises in a DRBA-owned building, and approximately eight companies soon will be using this as a boost for their growth. We are outfitting the space with open work space, a conference area, and tooling space.
- We also have reinforced and ramped up our partnership efforts with educational institutions; for example

- NJIT and NJIT, which attend our Innovation Forums, are offering educational and training resources to our incubator start-ups, as well as teaming efforts in our OEM campaign;
- We are in very early efforts with one University to explore partnering in the potential development of a "Tech Village";
- With ACCC, we are exploring formation of a new Entrepreneurial Institute that will focus on the UAS industry (among others); in May, we will jointly hold an all-day "pitch conference" at which UAS innovators can practice their funding pitches in a peer-reviewed environment, and get expert advice about the public speaking skills and the preparation of top-notch business plans that must accompany those pitches.

We've fully primed the pump Now we need incentives to help companies make the decision to settle here.

I must be frank with you: New Jersey is way behind other "test site states," which are pouring millions of dollars into attracting UAS start-ups. We have had not yet had the necessary level of focus and investment within the State, and this is a particular concern in an early market in which first movers have unique opportunities to assist companies in taking root.

We must be vigilant now in nurturing this opportunity while it still exists. Accordingly, I respectfully offer the following recommendations:

- (1) Establish UAS industry growth as a State economic priority; and
- (2) Support that goal with substantial, and varied, economic incentives for businesses that want to locate in Cape May County. In support of this prong, perform a very swift competitive analysis of the ways in which the other seven "test site states" have incentivized the growth of this new industry.

Thank you for the opportunity to appear before you.

Respectfully submitted,

Carole M. Mattessich, Esq.
Cape May County Director of Economic Development

COUNTY/LABOR AREA
Ocean City, NJ Metropolitan Statistical Area

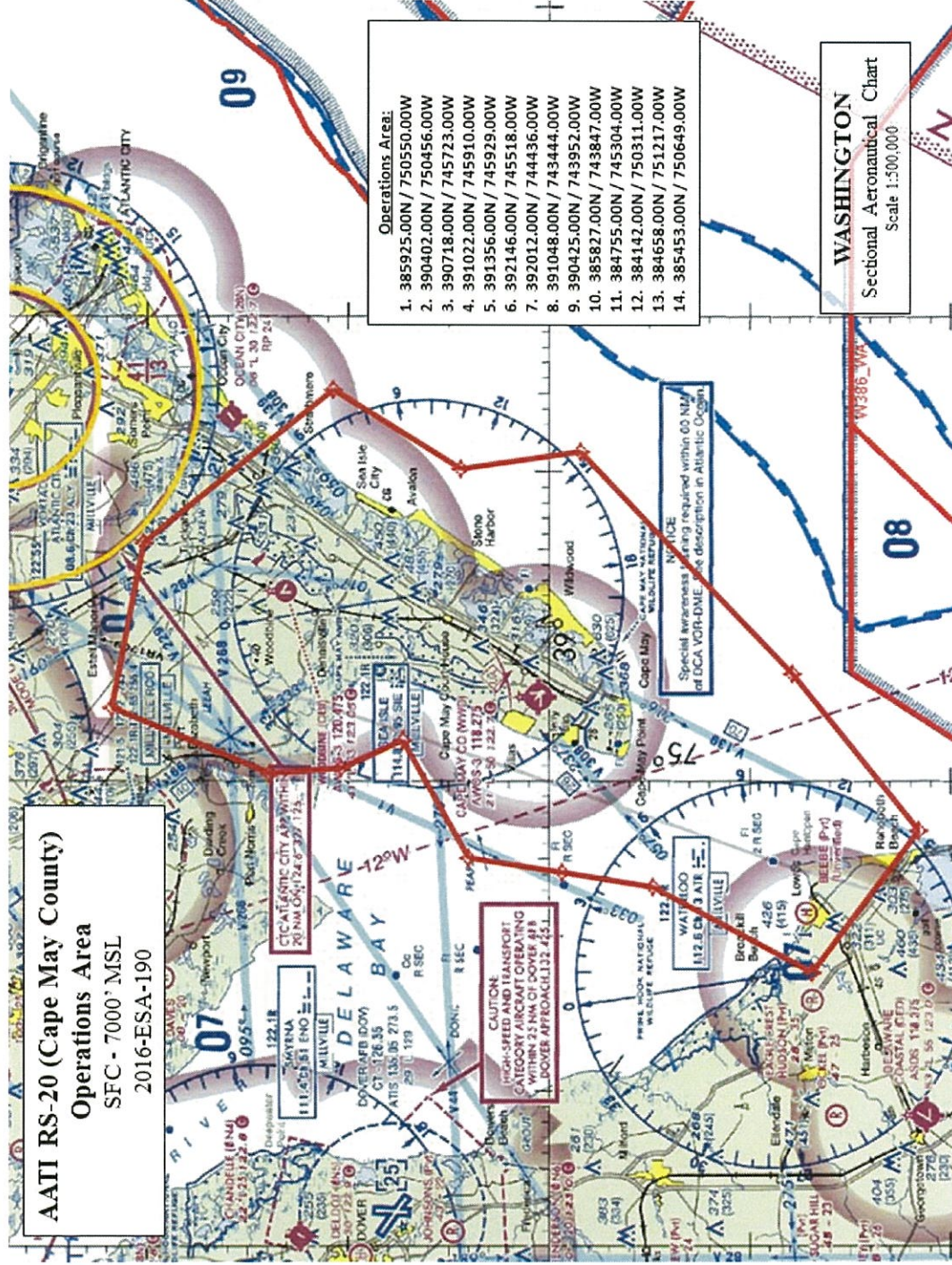
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	avg.
Cape May County - 2016													
Labor Force	43,700	44,300	45,400	46,700	50,600	56,600	60,600	59,300	52,400	46,500	44,200	43,900	49,517
Employment	37,700	38,400	39,400	41,600	46,400	52,800	56,800	55,900	49,000	42,700	39,600	38,800	44,925
Unemployment	5,900	6,000	6,000	5,100	4,200	3,800	3,800	3,400	3,400	3,800	4,600	5,000	4,583
Unemployment Rate (%)	13.6	13.5	13.3	10.9	8.3	6.8	6.2	5.7	6.6	8.2	10.4	11.5	10
Cape May County - 2015													
Labor Force	43,200	43,600	43,600	45,600	49,800	55,700	59,700	58,300	51,900	46,200	44,500	44,700	48,900
Employment	35,100	35,600	36,300	39,800	44,900	51,300	55,700	54,800	48,500	42,300	39,500	39,300	43,600
Unemployment	8,100	8,000	7,300	5,800	4,900	4,400	4,100	3,500	3,400	3,900	5,000	5,300	5,300
Unemployment Rate (%)	18.8	18.4	16.8	12.7	9.8	7.8	6.8	6.0	6.6	8.4	11.3	11.9	10.9
Cape May County - 2014													
Labor Force	42,900	43,200	43,500	45,200	49,500	55,700	60,000	58,500	51,600	46,300	44,800	44,400	48,800
Employment	34,700.0	35,000.0	35,900.0	39,100.0	44,400.0	51,100.0	55,200.0	54,200.0	47,200.0	41,300.0	38,200.0	37,500.0	42,800.0
Unemployment	8,200.0	8,200.0	7,600.0	6,100.0	5,100.0	4,700.0	4,800	4,300	4,400	4,900	6,600	6,900	6,000.0
Unemployment Rate (%)	19.2	19.0	17.5	13.5	10.4	8.4	8	7.4	8.5	10.7	14.7	15.5	12.3

Compiled by Dr. Richard Pernicliaro

2/22/2017

Source: http://lwd.doi.state.nj.us/labor/lpa/employ/ui/urate/fest_index.html

Cape May County, N.J. Operating Area



STATEMENT OF DENISE SPELL,
CO-FOUNDER OF LUFTRONIX, INC., AND OWNER OF CURRENT, INC.

Good afternoon. Thank you for the opportunity to speak about two things I am passionate about: New Jersey, and Unmanned Aerial Vehicles, or UAVs.

I am co-founder of a startup drone innovation company called Luftronix, which has created a precision navigation technology that enables drone to fly autonomously without the use of a GPS signal. Our navigation system enables a drone to know where to fly, including to the most intricate places; in my view, it enables drones to fly more precisely than any other system in the world. We have recently established a home at Cape May County Airport.

I have a degree in physics from Columbia University, and I am a native to New Jersey. I raised my family here and have founded my companies here because I believe this is a wonderful place to live and work and innovate. I am proud of New Jersey's long history of innovation, as well as the opportunity to be a part of its innovative future.

My hope today is that you each will gain an understanding of the unique opportunity that we have in New Jersey to foster a drone sector, and an appreciation of the potential role the drone industry can play in the future of Cape May County and Southern New Jersey.

I have been involved from the very beginning of Cape May County's drone initiatives. The New Jersey Innovation Institute, and Retired General Bill Marshall, sponsored a workshop here, led by the Purdue Center for Regional Development, and aimed at helping people understand the unique potential of this region and at helping people form a collaborative environment to accomplish common objectives. It was clear to all involved that a real opportunity existed to grow a net new industry around Unmanned Aerial Vehicles, based on the resources here in New Jersey.

Since that early workshop, I have attended the drone Innovation Forums hosted by Cape May County, spearheaded by the visionaries and passionate leaders in Cape May County. Innovators, educators, State officials, and FAA representatives regularly meet at these Forums. We network, learning and collaborating with other drone companies and experts in the field in both the public and private sectors. I also have benefited from the annual drone conferences hosted in Cape May County: this year we had a drone racing event , a presentation of short films by the founder of the New York Drone Film Festival, and a talk by FAA leader Hoot Gibson on the FAA's work on creating a regulatory environment that will enable drones to fly.

Along with these activities, I also work with the Field Innovation Team, and their founder Desiree Mantel-Anderson, to facilitate innovation after emergencies and disasters around the globe. Last Summer, we collaborated with our supporters here in Cape May – and with NJII – to bring a United Nations contingent to the County for a “Do Tank,” where drone technology companies and those U.N. reps came together to brainstorm how USVs might be used in humanitarian and emergency response. It was an incredible event where we witnessed the very first ship-to-shore delivery of blood samples and medications by drone.

For UAV companies like mine, Cape May County is a perfect place to innovate. The FAA's restrictions on how and where drones can fly are still very tight, and this inhibits where a drone start-up can successfully operate in its important formative years. Innovators need very specific conditions to do field test flights within those regulations. The airspace around Cape May County gives us access to great swaths of space and wetlands where no people live, as well as access to flying out along the seaboard.

Companies that come to Cape May County also have the benefit of cooperation with our research universities, and our State colleges and universities are educating students with the types of skills required by drone companies. In addition, Cape May Airport is an FAA-designated test site, which means universities and commercial entities can partner to accomplish drone flights that would be otherwise impossible. The area has unique airspace, with several classes including commercial and military. All of these factors make this area ripe to attract and retain drone companies.

My company Luftronix has R&D facilities in Ukraine, with headquarters in the United States. Luftronix was founded by myself and two co-founders, Roman Pavlak and Klaus Sonnonleiter. Our product enables drones to do precision aircraft inspections inside hangers at airports, and our potential clients are major airlines looking to speed up the inspection process.

When our company was looking for a place to put down roots for base operations, as well as a to create a test and demonstration site, we looked at several places around the globe, including France, the United Kingdom, and Poland, where governments are making heavy investments in the aviation industries. We decided to locate in Cape May County because we believe it has all of the right components to grow a drone company.

The County helped us to acquire a diHavilland Caribou aircraft to do our testing and demonstrations for potential clients. We have been bringing major airlines to the facility inside the Aviation Museum at the Airport, and demonstrating how drones can be used to more quickly inspect an aircraft and get it back into service. Acquiring the Caribou aircraft and the space to work is a tangible competitive advantage for us. We would not have been able to get this accomplished without the help the County, specifically through the efforts of Will Morey

who located the abandoned Caribou, and, from what I understand, even led it down the runway into the hangar!

There is always a moment in time in any new innovating sector where a new technology can birth an entire industry. Technology sectors are born, industries are created and jobs flourish around a technology ground swell. We are, right now, at that moment where the potential can be realized right here in New Jersey. We are dreaming big and creating amazing drone technologies that will shape the future.

Cape May County, and Southern New Jersey, could become the epicenter of drone innovation. But this industry is in its infancy and can survive here only with care, consideration and investment from our government partners. Other areas of the country, competing directly with New Jersey, have the backing and financial support of their government partners. They know, as you do, that drone technology will create businesses, sustainable jobs and economic growth. Other States have committed to shape the environment to support this burgeoning industry, but New Jersey is behind in its investment. The moment is now to become a leader.

Finally, it's well worth considering that the smaller start-up companies of today will become the big industries of tomorrow. You can act today to attract and support the drone industry by creating tax incentives, and allocating funding for infrastructure and drone projects. If we are thoughtful and act now, we can position New Jersey as the leaders of drone innovation, and the place where startup companies come to set up shop.

Again, I thank you for this opportunity to speak before you.



205 Route 47 South
Cape May Court House • New Jersey • 08210

February 23, 2017

Senator Jeff Van Drew
211 S. Main St. - Suite 104
Cape May Court House, NJ 08210

Attn: New Jersey Legislature - Economic Growth Committee

I would like to thank Senator Jeff Van Drew and his colleagues from the Economic Growth Committee for their time this afternoon. My name is Nathan Ernst. Mr. Senator, you may not recall but in April of 2007 you personally attended my Eagle Scout ceremony at the Lobster House in Cape May. As it was an honor to have you in attendance at my ceremony then, it is an honor to speak before you and your colleagues this afternoon.

I spent the first 18 years of my life growing up in Cape May County before I attended Monmouth University for my undergraduate and graduate degrees. I graduated from Monmouth in 2014. I am the Founder and now President of a UAS service providing company - Sky Scape Industries. Sky Scape focus' on implementing UAS technology in the infrastructure sector.

Shortly after graduating college and just before founding my company, I needed to make key planning decisions vital to my company's initial success; one of which was my company headquarters location. Circling back to my routes, Cape May County had the potential to be a

suitable location until further consideration proved to be less advantageous than other options. Currently the company operates out of Ocean County with a regular service area of 4 states.

Cape May County like many New Jersey beach towns, presents some interesting qualities that result in an atypical economic environment. Summer months boom with economic growth fueled by tourism while winter months consist mainly of a few healthcare organizations, residential contractors, and a small fishing industry that employ the relatively small year-round population that reside there. One of the factors that make Cape May County an outlier among other New Jersey shore towns is the geographical isolation due to the Delaware Bay and Atlantic Ocean. While this makes Cape May a hotspot in the summer, returning college graduates seeking year-round employment shy away from the area since the opportunity is so limited in the winter.

While Cape May County may not be suitable for other year-round industries, the area has already shown potential to be incredibly inviting to UAS technology. As you may or may not be aware, the FAA has authorized the Cape May County airport as an approved UAS test site which is admirable in itself. If you think about it, one of the major reasons other industries struggle year round in Cape May County is exactly why UAS technology would prosper; it's a peninsula.

If the county possessed the infrastructure and resources to encourage UAS technology, companies could conduct research and testing here very effectively. Flight testing can be conducted over water easily, virtually eliminating overhead incident risk. When regulations allow, over-population testing can be conducted in logical phases as population fluctuates throughout the calendar year. The geographical seclusion makes Cape May County private enough to

conduct UAS testing safely, but close enough to major transportation arteries like Philadelphia, Atlantic City, and New York to make company logistics convenient.

Figures vary depending on the source, but I have read consistent reports that the UAS industry will be worth over two billion dollars within the next five years. I cannot think of a more suitable location to capitalize on this opportunity than Cape May County. I envision the county to be a UAS technological center where business' of all sizes research, develop, train, and execute business operations. If the resources were available, Cape May County would become the leading UAS technology center in the *country*. With the presence of such companies establishing themselves in the county, the paradigm of college students leaving the county and never looking back would be broken. Instead of pursuing opportunities in hyper-competitive and oversaturated tech hubs like Boston or San Francisco, STEM and business professionals alike would flock to the new technological frontier of Cape May County. UAS business' would thrive, the year-round economy would flourish, and career opportunities in the area would boom.

I am privileged to have had this opportunity to speak before you all today regarding my hometown and what it potentially has to offer. We are witnessing a technological revolution in the present day unlike anyone in this room has witnessed before. If the opportunity presented itself and the operational environment made sense, I would certainly move my company's headquarters to Cape May County and bare witness to the amazing potential it has to offer to my industry.



Raptor Maps, Inc.
28 Dane St.
Somerville, MA 02143

February 22, 2017

Dear New Jersey State Senate Committee,

I am writing this letter to express interest and offer suggestions for incentives aimed at attracting innovative start-ups to Southern New Jersey. I am the Chief Technology Officer of Raptor Maps, a company I cofounded to empower the agriculture industry to use the latest technology in aerospace and computer science. I am originally a Cape May County native.

South Jersey is of particular interest to us, because Cape May County is making a concerted effort to enable research and development related to unmanned aerial vehicles. I believe the Committee has the ability to create a unique combination of resources as well as incentives to attract start-ups and build a vibrant and innovative community. I have three suggestions to offer from my company's experience:

1. Non-dilutive capital

Non-dilutive capital can provide necessary capital to get a new product to market. My company received a grant from the Maine Technology Institute to develop software to aid the potato growing industry in Maine. This attracted us to test our products in Maine and engage with the community (<http://bangordailynews.com/2016/10/12/homestead/drone-technology-computers-ushering-in-a-brave-new-world-for-northern-maine-potatoes/>).

2. Hiring credits

Labor is one of the largest costs for startups. Startups are hotbeds for innovation and expertise, which can offer an educational opportunity for new hires or interns. Offsetting the cost of intern salaries encourages start-ups to hire interns earlier on. Internships help the company and the broader community such as career initiatives at local schools. We participate in an internship program in Massachusetts that has helped us pay for interns (<http://masstech.org/innovation-institute/projects-and-initiatives/masstech-intern-partnership>).

3. Tax breaks

Tax breaks can allow startups to make the most efficient use of the capital they have by putting all money towards their product. New York offers a 10 year tax break for start-ups near universities (<https://startup.ny.gov/>). I believe a similar idea should be considered for innovation hubs in NJ.

I greatly appreciate your time to review my suggestions and your dedication to fostering the innovation taking place in Southern New Jersey. Please do not hesitate to contact me directly.

Sincerely,

A handwritten signature in black ink, appearing to read 'Eddie Obropta'.

Eddie Obropta
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