Dan Cornew
Lead mechanical engineer, Titan Aerospace
Mechanical engineering '11

Located in the desert an hour east of Albuquerque, the town of Moriarty, New Mexico, may not have the nightlife that some early-20-somethings are searching for. But it has everything Cornew needs for his work: plenty of sunshine, an airport, and a sparse population—making it easy to get flight clearance.

McCormick: What does Titan Aerospace do?
Cornew: Titan Aerospace is a startup that designs and builds solar-powered unmanned aerial vehicles, or drones. Our long-term goal is to build solar-powered UAVs that could stay in the air for several years, flying at 65,000 feet. We believe they could do much of the work currently being done by satellites—like telecommunications, weather surveillance, and military spying—at a fraction of the cost.

The company started just over a year ago and we’re still small. We have 14 people working for us right now. We have a hangar at the Moriarty airport, and that’s where we build these things. As the lead mechanical engineer, I’m in charge of all the design and construction of the aircraft. Right now we’re building a 10-meter-wingspan aircraft in order to validate the design. In the next few weeks we hope to do an overnight flight with it, and after that we’ll start on a 50-meter-wingspan aircraft that will do several weeks in the air. Then we’ll start looking for customers.

McCormick: What is a typical workday for you?
Cornew: Well, I live in the hangar. It has a separate apartment, though; it’s quite civilized! I roll out of bed around the time everyone else gets in, we sit down, discuss what we’re doing, and then we build. Since our aircraft need to be incredibly lightweight—our 10-meter bird only weighs 36 pounds—I spend a lot of time trying to figure out how to accomplish things without adding weight or bulk. It’s very much a prototyping shop; we try to figure out how to do something, build it, test it, then build the next one. Every so often we take a bird out to the field and go flying. Or rather, we sit on the ground. It goes flying.

Our aircraft are not very complicated. We’ve deliberately removed everything that’s not vital because we want them to stay up, and the more complicated the design, the more likely it is to fail. Electrically, it’s quite simple. We run on off-the-shelf laptop batteries and off-the-shelf solar cells. We’re trying to break a British company’s record for flight time for a solar-powered UAV, which is two weeks.

McCormick: What were your qualifications for this job?
Cornew: My current boss, who is Titan’s founder, was looking for someone with experience in aerospace and solar power. I had interned at SpaceX for six months and had been chief engineer for Northwestern’s Solar Car Team. He also wanted someone who was passionate about gliders—aircraft that run without engines. I have been flying them since I was a kid. That helped, because our aircraft are essentially gliders, but with an electric motor and solar panels. Anyway, I learned about the job through a solar car listserv. I contacted him and became the company’s first employee.

McCormick: What advice would you give to current McCormick students who want to be competitive in your line of work?
Cornew: Get on a project team like Northwestern’s Solar Car or Formula SAE Team. Be as involved as you can be. The skills you use there are really what you’ll use on the job. Plus, when you’re going for a job interview and you say, “I went to class,” it’s not all that impressive. It’s all the stuff you did beyond class that matters.
Brittany Martin Graunke  
Founder and CEO, Zealous Good  
Industrial engineering ’07

When Graunke graduated, she started consulting for Bain & Company, working with corporate and nonprofit clients. Knowing she wanted to work with nonprofits, she became United Way’s strategic engagement manager. Her experience in that job prompted her to found a social enterprise website that connects people who have items to give away with nonprofits that need the items.

McCormick: How did you get inspired to start Zealous Good?
Graunke: At United Way part of my job was working with donors to help them feel more connected to the organization. This was during the recession, and more than once I had corporate donors come to me and say, “We’re downsizing, and we’re getting rid of all our big-screen TVs, and we’d like to donate them to an organization that needs them.” On the other hand, I’d talk to nonprofits that desperately needed TVs for job-training programs or tutoring but didn’t have access to any. It seemed like there was no vehicle to help the two sides connect.

Well, the engineer and the consultant in me flared up, and I thought, there is a piece missing in the in-kind donation space. I realized that with some efficient processes and technology, we could leverage a solution. What developed was Zealous Good.

McCormick: How did you go about starting the company?
Graunke: I started talking with people who knew what I needed to learn: people who worked in tech, people who had started websites, people in the social enterprise space. And I started connecting with more businesses and nonprofits to see what their needs were. After nine months of research and coffee meetings in the evenings and on weekends, I decided to take on the project full-time.

I decided that I was going to start it in a bootstrapped way with a four-month pilot. I developed a basic website and assembled a small group of nonprofits. That process helped us to develop the model we use today.

McCormick: Tell us about that model. How does your business make money?
Graunke: Nonprofits are able to create profiles on the Zealous Good website, and they can request in-kind donations for free. When a donor responds with an offer, the nonprofit either can sign up as a Zealous Good member for a few dollars a month or can pay as it goes, remitting a small fee for each donation received.

It’s a low-cost model, and it’s dependent on the company reaching a certain scale. We currently have 220 nonprofit members, all in the Chicago area. I look at Chicago as our pilot city. We’re perfecting our model here, and then we hope to scale out to at least 20 other cities.

McCormick: Do you find yourself drawing on your McCormick education in your work?
Graunke: Definitely, especially when it comes to problem solving. I often draw on the skills I learned in the Engineering Design and Communication course [now Design Thinking and Communication]. Whenever I’m faced with a problem, no matter how big or small, I don’t just jump in and say, “Here’s what I think the best answer is.” It’s been ingrained in me that the first step is research. You want to be able to develop an inexpensive prototype. You want to be able to test, iterate, and fix it and enlist users to see how it works. That whole process has been integral in building Zealous Good.
David Evitt
Cofounder and CEO, Estufa Doña Dora
Mechanical engineering and Segal Design
Certificate ’09

Shortly after graduating from Northwestern, Evitt packed up and headed to Guatemala to volunteer with a nongovernmental organization. He planned to stay one year before returning to the United States and getting a “normal” job. Three years later, he still calls Guatemala home and has started a business that builds and commercializes safe, fuel-efficient wood-burning cookstoves.

McCormick: Did you always plan on working abroad after graduation?
Evitt: No, initially I wanted to study abroad during my undergraduate years, but that didn’t work out. So it was important to me to live outside the United States for at least a year before getting a traditional engineering job. After graduation I was looking for an internship or volunteer opportunity to use my engineering skills in another country, and that’s how I got started with an NGO in Guatemala working in appropriate technology development [a technological development model that focuses on sustainability and a culture’s unique needs]. One of my first projects was interviewing families about their cooking traditions to provide the context for developing a more efficient wood-burning cookstove.

McCormick: Why are efficient wood stoves so important in Guatemala?
Evitt: Guatemala is a country of about 14 million people, and 62 percent regularly buy firewood for cooking. There is a strong cultural attachment to cooking with wood, and the general impression here is that food cooked on wood tastes better.

But the current stove practices are problematic for many reasons. Most families cook on smoky, open fires—essentially campfires on the floors of their homes. The fire puts the whole family, especially children, at risk for disfiguring and disabling burns, and indoor air pollution from smoky fires is a leading cause of death of children under five. Also, wood is expensive. It’s typical for a family to spend up to 20 percent of its income on wood. It also leads to forest degradation, which is a big problem in this country.

McCormick: What is a typical workday for you?
Evitt: A typical workday has changed over time. In the beginning—after I finished the initial round of interviewing families about cooking—I worked on the stove design. I followed the process through prototype development, user tests, initial pilot, and manufacturing process development. We literally built the factory from the ground up.

During that time the NGO closed its Guatemalan office, and I helped found a Guatemalan entrepreneurship center called Alterna, and we built a business called Estufa Doña Dora around the cookstove model I had been developing. Alterna is now incubating the cookstove business. We received a round of angel funding in March 2012 to launch the commercialization effort of our stove that helps families save money, improve health, and preserve the standing forest.

Now there’s an incredible variety from day to day. Some days I’m in the office working on the 2013 budget, refining our sales process, scaling production, looking for mentors, reaching out to partners. Other days I might be out delivering stoves, which includes positioning the stoves in customers’ homes, installing the chimneys, and showing the families how to use the stoves. Another day I might be purchasing raw materials to make the next batch of stoves.

My favorite part of the job is definitely visiting people in their homes. I go all sorts of places far off the tourist track that I wouldn’t otherwise have the opportunity to see. For example, a few months ago we sold 25 stoves to a group in a really rural community in the mountains. It was an hour away from the nearest town by dirt road. I spent 24 hours with a tomato farmer and his family to see how they lived and cooked. It was an incredible experience—a situation where I was able to interact with the family and have a window into a completely different style of life, all through the stove.
Lourdes Solis
Vice president, corporate coverage and solutions, Deutsche Bank Securities
Civil engineering ’06

Although she studied civil engineering at McCormick, Solis found herself drawn to a very different field upon graduating: finance. Seven years later, she has worked her way up to become a vice president at one of the world’s largest financial institutions. While the connection between her education and her career may not seem obvious, Solis says the analytical skills she learned as an engineer help her on the trading floor every day.

McCormick: Tell us about your work.
Solis: I work in capital markets at Deutsche Bank in New York City. My job is a combination of traditional banking, serving as an adviser to corporate clients, and working on trading products. I work with the real estate industry, so my clients include about 70 major real estate companies, property managers, casinos, and hotels. My role is to deliver the banks’ markets products, such as interest rate hedges and foreign exchange hedges, to these clients, help them raise capital by issuing bonds to institutional investors, and help them grow by buying other companies.

McCormick: How did you get into the financial industry?
Solis: When I was at McCormick, I got a scholarship to work for General Motors. I spent two summers working with their facilities management group, the only civil engineering position they had in the company, which entailed managing reconstruction and new construction of manufacturing plants. I realized it wasn’t the right job for me. I’m an outgoing person, and I was more interested in managing projects and dealing with clients. The following summer I was recruited by SEO, a nonprofit that recruits minority students for summer jobs on Wall Street, and was placed at Deutsche Bank. That was my first experience on the trading floor.

When I accepted a job at the bank after graduation, I was surprised at how many of my new colleagues were engineers—probably 25 percent of the group. It’s not such a stretch, though. Traders have to build financial models, they have to understand how to solve problems, and they deal with math in every shape and form. Engineering fits well into that.

McCormick: When you began at Deutsche Bank, did you have any experience in finance?
Solis: I didn’t know anything about finance. No accounting, nothing. In fact, I told them, “I have never considered finance as an option; this just sort of happened. I’m a quick learner, though, so we’ll see where we get.” Seven years later, I’d say it’s gone pretty well. I’m 29 years old and CFOs and treasurers of multibillion-dollar companies are calling me for my advice. I’m the only Latino vice president in my division, which has more than 100 people. Sometimes it’s kind of surreal.

McCormick: What advice would you give to current McCormick students interested in following a similar path?
Solis: I heard a saying once: “An engineer can be an economist, but an economist can never be an engineer.” If you think you want to go a finance-related route, why not study engineering? It provides a really solid background, your ability to manage and solve problems is very strong, and because of how intense the curriculum is, if you can make it in engineering, you can pretty much do anything.
For people who don’t enjoy bricks-and-mortar shopping, online shopping has been a blessing. But while the Internet is great for cookie-cutter items, it can be difficult to find unique pieces like those in local boutiques. Just months after graduating from McCormick, Morris and his partners developed a solution to this problem: Walk.by.

McCormick: What is Walk.by?
Morris: Walk.by is a website and mobile app that allows local boutiques to put their inventory online to reach a larger customer base. With the snap of a photo, the item is sent out across all the merchant’s social networks with a link so customers can purchase the item on our website. Or a customer can come straight to our website and browse. Walk.by is free for the customer, and it’s a very low-risk arrangement for the merchant, because they don’t pay unless we sell an item. At that point we take a commission.

The company currently consists of 11 people, including six McCormick alumni and current students, and we work with about 150 merchants in Chicago. We got started last August with funding from Lightbank, the venture capital fund that supported Groupon and [the customer loyalty program] Belly. Lightbank has been with us from the beginning, so it’s been great to have that support.

McCormick: How did the idea for Walk.by originate?
Morris: The idea sort of evolved over time; there was no thunderbolt moment. We originally started with three people, and we threw around the idea of making it easier to buy things online that are only available locally. We eventually narrowed our focus to fashion.

Personally, I knew my junior and senior year that I wanted to do something related to tech and entrepreneurship. I was a teaching assistant for NUvention: Web, and that was an eye-opening experience for me, helping other companies get started, meeting entrepreneurs who came to speak to the class. It was the push I needed to decide that I wasn’t going to go work at a tech company after graduation. It was a risky decision, because I had already done an internship at Microsoft and had a job offer there.

McCormick: How does your experience at Walk.by compare with your experience at Microsoft?
Morris: Walk.by isn’t a typical 9 to 5, but for me, it’s fantastic. I worked long hours at Microsoft, but now I start my day earlier and work even longer hours, because I have this sense of determination that comes with working at a startup. One of the things I love most about my job is it’s actually fun to come to work. We have three interns from McCormick right now. They come into the office [in Lightbank’s incubator space in Chicago’s West Loop] during the week, then go home on the weekends and work some more, of their own accord. Every day is interesting, which makes it hard to step away. If you miss three days or a week, the company has moved on.

McCormick: What advice would you give to current McCormick students interested in following a similar path?
Morris: Chicago has a burgeoning tech scene and there are lots of people and educational events—go to them. 1871 [a co-working space for startups in Chicago’s Merchandise Mart] is a great focal point. Go in and talk and hang out with people, get diverse opinions on startups and technology. And take NUvention—it will teach you skills and methods that you need as an entrepreneur, and it will introduce you to people that can help you out later on.
Elif Koru

Structural design engineer, TAV Construction
Civil engineering ’12

Career experts often tout internships as the best route to a career, and so it was for Koru. After a summer internship with airport builder TAV Construction, she was offered an engineering position working on a TAV airport in her home country of Turkey. Less than a year later, she has had an uncommon experience: designing an airport waste facility.

McCormick: What does your job at TAV entail?
Koru: TAV Construction is one of the biggest airport contractors in the world. I primarily work on İzmir Adnan Menderes International Airport, which is on Turkey’s Aegean coast, helping with structural design for construction projects. This is great for me because I love airports; my family traveled a lot when I was young, so we spent a lot of time in airports. Although I work on the İzmir Airport, I’m actually based in TAV’s headquarters in Istanbul, so I’m exposed to a variety of other airport-related projects as well.

McCormick: What has been the most interesting project you have worked on?
Koru: I designed a waste facility at İzmir Airport, which was unexpected and exciting. My company was reviewing the architectural drawings for the waste facility, and my supervisor asked me to design the structural system. As I was looking at the plans, I started to question why the facility had been designed this way—how the trucks would get to the trash receptacles, how the cars would maneuver. I started questioning and trying to come up with a better design.

I asked my supervisor, and I was really surprised that he was open to my ideas. They sent me to the airport site, which is about an hour away by plane. I started talking to the workers at the waste facility, asking them what they were doing and how they were doing it. I ended up incorporating the workers’ input into my design.

McCormick: What Mc Cormick experience did you draw on for the waste facility project?
Koru: The process that I followed—researching, going to talk to the workers—was very similar to what we learned in Engineering Design and Communication [now Design Thinking and Communication]. I also used my experience from Architectural Engineering and Design, one of my civil engineering courses. On the airport project we had a client, of course, but just like we had done in Architectural Engineering, I came up with three different concepts and presented my ideas. Then they gave me feedback and settled on a final design. After that we did the structural calculations. Of course, a certified architect did the final drawings. But it was still the result of the design process I had followed, which is nice.

McCormick: What advice would you give to current McCormick students interested in following a similar path?
Koru: I think I was very lucky to be at a company like TAV and to be given an opportunity like this. But I think experiences like these can be created in most places. Start questioning things that you’re doing. Try to see ways in which you can improve the things that are being done. If I hadn’t questioned the facility, I wouldn’t have gotten the opportunity to do an architectural design. It’s really not a technical skill that led me to an experience like this—just an ability to question, be curious, and try to do things in better ways.