**Paul:** Friends. Lend me your engineers. Welcome once again to lend me your engineers. My name is Paul. I'm here with Kamryn.

**Kamryn:** Hi, Paul.

**Paul:** We're going to call this our season finale because this is finals week and everyone's going to head home next week. Enjoy the holidays. So everything's wrapping up. Everything's winding down. So we'll start fresh next year with a brand new season. But we'll wrap up today season two, the comeback season two, maybe another ten episodes.

**Kamryn:** Yeah, we're actually a Netflix original series.

**Paul:** That's the next step. We're going to turn this into…is it just cameras on us talking or is there like action?

**Kamryn:** See, I think it's kind of like we'll go into the field and do field investigations. So it'll just be like kind of like an SNL kind of thing except hard hitting interview skills with various students and faculty and staff in the department.

**Paul:** Well, so since it's the season finale and usually with the shows, you sort of don't put in a lot of effort into the final episode of the season. And you usually have a clip show.

**Kamryn:** We do.

**Paul:** You're familiar with clip shows in sitcoms and television. Do you take a look back at previous things?

**Kamryn:** Yeah, it's like a recap of 2017 fall.

**Paul:** Yeah, you find like a plot device where it's like, ‘Oh, remember that time that thing happened?’ It was very big on The Golden Girls. If you're a fan of that show.

**Kamryn:** I'm not that old, Paul.

**Paul:** Well…

**Kamryn:** I actually am. Just kidding.

**Paul:** It airs seven times a day, just five different networks.

**Kamryn:** Does it really?

**Paul:** Yes, it is on.

**Kamryn:** Why do you know that?

**Paul:** Because I am a huge fan of The Golden Girls, as everyone who's seen it is.

**Kamryn:** I will admit I am a fan of The Golden Girls. I was just giving you a hard time.

**Paul:** It's also not that old of a show just because they're old characters. I think it was like in the mid-90s. It was originally airing or maybe late 80s, early 90s.

**Kamryn:** You realize mid-90s is when I was born.

**Paul:** Well, now I feel not great.

**Kamryn:** I mean, yes, I've watched The Golden Girls.

**Paul:** I feel a little sad. But we got to move this past week. Last week was the Senior Design Showcase event, which is the capstone event for all of the engineering students where their groups present their projects that they've been working on. We have industry professionals come and observe. And one of the groups actually, several groups was, several groups were sponsored by Guard Dog Valves, which is a company that if you've been around engineering here at UCF for a little while, you're familiar with. And we actually were able to talk to the founder of Guard Dog Valves at the show. So we're going to play that audio right now.

**Doug Guidish:** My name is Doug Guidish. I graduated from UCF back in 2011 in aerospace engineering. And we actually have a company called Guard Dog Valves that's a water conservation products line. And what we've been doing for the last two years with UCF is actually utilizing these seniors who are pretty much at the level of an engineer and having them work on water conservation products in order to help us with our R and D processes. Since we're a small business because we can't do everything at once. So it allows us to have somebody working on our ideas and then see how those proof of concepts kind of work out. This particular year we originally started on indoor products so water shut-offs for toilets and whole house shut-offs. This year we actually decided to go to the outdoors and work on irrigation systems. There's studies that say the average homeowner over waters their lawn two and a half times of what is needed. So in order to do that we wanted to come up with some sort of moisture sensor that would be able to measure, monitor the moisture in the ground and then tell your irrigation system or sprinkler system whether or not to turn on and off. And the team did an amazing job. We'll have pictures and stuff up on our website Guarddogvalves.com to showcase it and if you're at the Senior Design Showcase be sure to check it out. But like I said they were able to actually create a solar-paneled wireless moisture sensor that communicates with the sprinkler system and tell it to turn on or turn off based on what the moisture levels are on the ground. So we think this is a huge innovation in water moisture control in the outdoors.

**Paul:** Now your company came together for a personal reason. Can you talk a little bit about what inspired you to create your company?

**Doug Guidish:** Yeah, absolutely. So it all actually started with a toilet leaking in, particular my grandfather's toilet. He is a snowbird so he spends half of his year in Naples and half the year in Chicago. And my dad came to check on his house one time and water was leaking out of the garage and when they opened up the doors water spewed out of the entire house. So there was I believe a foot of drywall had to come out of the entire house and all that it was was this plastic seal that connected the hose into the toilet, cracked and just started spraying out water. Over the course of a week it built up. So we started looking into water issues indoors especially with homeowners and stuff and just found some staggering numbers. I think over a trillion gallons of water are wasted each year in households that's over 10,000 per household. And so with all the crises that are coming out with like California and their droughts and that kind of stuff we started looking into if the droughts were just this conditional thing or if it looked like this was a long-term problem and it appears to be a fairly long-term problem. So we decided to look into any way to prevent the actual waste of water. A lot of people don't like using less water in the shower and stuff, so we tried to find places where they didn't even know they were using it initially to try and nip that in the bud. But, yeah, no, it's been going fantastic so far. It's our second year with UCF, and we've been in business for about three years now.

**Paul:** And you were actually the first company to come on for this new version of the Senior Design program.

**Doug Guidish:** Yeah, absolutely. And that was just, I'll say, more luck than anything. We had started the business, and since I was a fairly recent graduate, I had gone through Senior Design process and saw the benefits and the quality that kind of comes out of a UCF Senior Design project. So we had first joined the UCF Business Incubator. Program, and then in addition, we wanted to get tied in with the Senior Design program and the College of Engineering, of course, because I'm very particular with that and have just been blown away. And like I said last year, since we were the initial group, we actually were fortunate enough to have three groups work on three separate projects. Was fantastic. This year, luckily, UCF has gotten a bunch of extra partners with Senior Design group. So we had one group, but they were fantastic. I can't say enough good things about them. And if you have a business and you're contemplating using Senior Design, I can't say enough good things about it.

**Paul:** And then we had a chance to talk to one of the students from one of the groups that is doing a project that was sponsored by Guard Dog Valves.

**Brandon Halterman:** My name is Brandon Halterman. We worked on Triton, which is an integrated water monitoring system.

**Paul:** And what does that mean? How does this help humanity?

**Brandon Halterman:** Okay, so we designed a probe that measures the moisture level of the ground and sends that feedback to a base station, which determines whether or not to water the grass. And in addition to that, we're also getting information from the Internet about the percent chance of precipitation. And so we're using those two pieces of data to determine whether or not to water the grass in order to save water.

**Paul:** Did your project have a sponsor?

**Brandon Halterman:** Yeah, Guard Dog Valves is our sponsor.

**Paul:** And they've been with the Senior Design since the beginning. What was it like working with them?

**Brandon Halterman:** It was very easy to work with them, actually. They were kind of hands off. And I don't know if that's because that's how they normally work or if that's because they saw what we were doing and trusted us, but they were hands off, and it was very easy. They provided us with, I would say, proper funding and also guidance when we needed it.

**Paul:** Is your project something that's close to, is it close to going to market or is there a lot more work to do?

**Brandon Halterman:** I would say for home use, it's very close to going to market, but for agricultural or commercial use, there's some more work to be done.

**Paul:** What's the difference there? Why is there more work for that area?

**Brandon Halterman:** So there's a few things, I mean security protocols, things like that. Because we're all mechanical engineers here, this team and we, I don't think, designed a highly secure system in terms of the WiFi communication protocol. There are other wireless technologies that we were looking into and still are looking into for longer range. So that's another sort of issue with WiFi in general. We want to get like six, seven mile range wireless communication between the moisture probe and the base station and can't really do that with WiFi. So we're looking at sort of lower frequency radio communication.

**Paul:** So there were a lot of really cool presentations. One that caught my eye was they had a virtual reality where you put the headset on.

**Kamryn:** Yeah, that was in HEC right?

**Paul:** Yeah, it was in HEC.So we were able to talk to the person involved.

**George Muganis:** My name is George Anna Mugianis, and our project is endless learner.

**Paul:** And what is this I see? It's virtual reality.

**George Mugania:** So it is a virtual reality language learning game.

**Paul:** As the player almost bumps into us.

**George Muganis:** The goal is to do a little bit of research on how the Endless Runner format, along with virtual reality, affects second language acquisition. Those are research goals. We also have application goals. We hope that we can give a way for language students to actually practice their vocab terms here at UCF and to have professors get some important analytics back.

**Paul:** So are you a popular project here? Does everyone want to come and strap in?

**George Muganis:** Oh, yeah, we've had a lot of people that want to come and play. It's a lot of fun. Everyone ends up smiling. Everyone ends up smiling. And some people even learn a little bit of Portuguese, which is the end. So yeah, it's been a great experience. We worked together with the games research lab at UCF. It was a lot of growth and we're hoping that this project, when we come back in five or ten years, is going to be in as many language students hands as possible.

**Paul:** Why Portuguese?

**George Muganis:** So initially we were working with some Portuguese professors. We wanted to know what parts of speech we were looking for, any kinds of important tags along with is it fine to have a noun next to a verb when you're trying to choose? Does it make it easier, does it make it more difficult? But it has a comprehensive back end with a nice admin portal where professors can go in in the future and create their own packs. So they're going to be able to make a French pack, a Japanese pack, whatever is necessary, whatever they're looking for.

**Kamryn:** So the Senior Design showcase is super duper interesting and I'm really glad that we had the opportunity to kind of explore all of the different projects that are kind of out there because you really want to learn about the ecosystem for engineers going forward. But it's also just really interesting to see what people are doing and how varied it actually is in terms of their experiences and what they can kind of come up with.

**Paul:** Right.

**Kamryn:** You have everything from the Guard Dog Valve people to the VR people. And then I have a friend who just did his capstone, and they were working on regolith retrieval for a NASA competition. So it's like, all of these things are really interesting, and you get to see the spaces in which engineers, science, and that kind of method of just kind of solving problems comes into play.

**Paul:** And not everything was super high tech, either because one of the problems or one of the projects revolved around packaging mushrooms.

**Kamryn:** Oh, wow.

**Paul:** And the mushrooms that spill out of the container as they're being packaged, those are lost. So the the group was tasked with finding a way to preserve as much of the project as possible.

**Kamryn:** Wow. And see, those are things you rarely think about, right. These small problems where you're just like, I mean, of course that's solved, and it's like, no, these are still problems that occupy spaces, and we need people to solve them. We always have things that people don't want to do or can't really do in the contemporary spaces.

**Paul:** So we'll always need engineers. There will always be a need for problem solving.

**Kamryn:** There will always be a need for problem solving. I think that's a good thing.

**Paul:** That is a good thing.

**Kamryn:** That's a good motif.

**Paul:** Other good thing is that we had the first annual Grad Bash a few weeks ago. Yes, it was a really cool event put on by Amanda over in advising. And the idea was to celebrate our grad students and our professors, and everybody just they headed over to Lake Claire for a barbecue, play some volleyball, just relax..

**Kamryn:** Mix and mingle kind of event.

**Paul:** And we have some audio from that. We're going to listen to that right now.

**Paul:** We are out here on Lake Claire celebrating the first annual Grad brash. Amanda what?

**Amanda Barratt:** Barrett.

**Paul:** Barrett? Yeah, we're using last names now. Kamryn Lamons. This is Paul Kelly. And here comes Dr. Peles. But first, but first, tell us about Grad Bash.

**Amanda Barratt:** So Grad Bash. This is our first annual faculty/staff/grad student event. We're giving our faculty and grad students an opportunity to kind of mix and mingle, get to know each other outside the lab and classroom. We don't do that often enough, so it'll be a good time.

**Paul:** Good time will be had by all. Let's get Dr. Peles on the record.No, we're just kidding. We're not going to bother him right now. Dr. Peles, welcome to Grad Bash. Would you like to say a few words to the audience?

**Dr. Peles:** Thank you for coming. What else can I say?

**Paul:** That's it. All right. Thank you so much. We'll be back with some more excitement very soon.

**Dr. Gordon:** Welcome to the Grad Bash.

**Kamryn:** Yeah, I'm doing great. How are you? Great.

**Dr. Gordon:** I'm glad you guys could have this.

**Paul:** All right, so we should mention now that we're talking to Dr. Gordon.

**Kamryn:** Yes.

**Paul:** It was sort of like the red carpet where we were interviewing people as they entered the Grad Bash.

**Dr. Gordon:** It’s nice to come together as a department, as a collective group.

**Kamryn:** Pretty excited that we were able to get a lot of the faculty and students to kind of show up and interact together. We don't get events like this very often, if at all. It's a nice experience because there are certainly faculty and students that I've never talked to.

**Dr. Gordon:** Yeah, I heard that. There'll be soccer and volleyball.

**Kamryn:** There will be. We have all of the elements to do those. Yes.

**Dr. Gordon:** So it's time for the faculty to show the students how to perform in those areas.

**Kamryn:** All right. Yeah. All right. I'm excited to see I'm excited to see faculty show the students how it's done.

**Dr. Gordon:** Absolutely. I see Dr. Bai is here. I see Dr. Gou is here.

**Kamryn:** We have yeah, everybody. that's all right.

**Dr. Gordon:** Awesome, awesome. Well, thanks for putting all this together. This is you right?

**Kamryn:** No, it's Amanda.

**Dr. Gordon:** Amanda.

**Kamryn:** Yeah. So that's the lady that you want to speak to right there. She's the magic coordinator for this event. We were just her humble assistants in making her vision.

**Paul:** Right. This is Amanda talking. By the way.

**Amanda Barratt:** Feel free to grab a hot dog, some chips, grab some cookies, and grab drinks.

**Paul:** I want to mention that if you'd like to see photos from this event, do you know where you can go?

**Kamryn:** I actually do not. Please enlighten me.

**Paul:** Take a guess.

**Kamryn:** Is it the MAE website?

**Paul:** Well, yes, but I actually know you have to go to our Facebook, and it's on Flickr. I thought you were going to say Instagram.

**Kamryn:** Oh, you're right. Did we add these to Instagram?

**Paul:** No. Still one photo on Instagram. Back to the action.

**Amanda Barratt:** We've got cornhole, volleyball, soccer. We've got some of our amazing faculty out here. So I just wanted to give a big applause for Dr. Peles and Dr. Gou and Kassab for supporting us. Get a lot of opportunities to mix and mingle outside of the classroom and laboratory. So just a big round of applause for our department for supporting us. Have fun guys.

**Paul:** How are you enjoying the Grad Bash, so far?

**Dr. Dickerson:** I just got here.

**Paul:** I think this is Dr. Dickerson.

**Kamryn:** Yeah, it sounds like Dr. Dickerson.

**Paul:** He literally just got here. Yeah, but so far, so good, right?

**Dr. Dickerson:** So far, so good.

**Kamryn:** I think this is Dr. Cho.

**Paul:** Okay, so at this point, Dr. Cho just sort of, like, flies right by you. Because he's one of the cooks.

**Kamryn:** He is one of the cooks. So he's beelining had to get to work.

**Paul:** And if you'd like to see a picture of him in his very funny apron, head on over to our Facebook because it's in our gallery.

**Kamryn:** Photo gallery.

**Paul:** This is very enjoyable.

**Kamryn:** It's okay.

**Paul:** He zoomed right past you.

**Kamryn:** I was just saying. Yes, but it's because he's grilling. That's right.

**Paul:** He's got to get to work so that we can feed all these people.

**Kamryn:** Yeah, exactly.

**Paul:** I'm glad we have a good there confirmation.

**Kamryn:** Good turnout of faculty. That's really nice.

**Paul:** That's great. It's really good. So it was really loud. There was a DJ.

**Kamryn:** There was.

**Paul:** There was. And it sort of sounds like we're in the club, but we were outside. If you're familiar with Lake Claire, it's just a nice little area. People go canoeing there. Yes, a couple of volleyball courts. We were playing Cornhole, which I schooled you in.

**Kamryn:** It was even for the first half.

**Paul:** No, I was always winning, and then I won by, like, a million. And I think I got a Cornhole on my last throw, which means I win the next game automatically.

**Kamryn:** I don't know if that's exactly how that works.

**Kamryn:** Yes. See all of the presence of all the faculty who are excited to kind of meet, greet, and interact with their students. I mean, that, to me, is very exciting because as a student, you don't always get the opportunity to interact with faculty outside of the classroom. Right.

**Paul:** You get to see everybody wearing shorts and T-shirts.That's kind of cool.

**Kamryn:** Right? That's the really interesting part. It's not all dress rates, although a couple of them are keeping it business casual. It is a Friday, and we did.

**Paul:** Work, so some of us worked. Yes, some of us worked.

**Kamryn:** Yeah. Not Paul and I, as you can't see, but as defined by our attire, it certainly looks like we did not come to work today.

**Paul:** I guess technically we're working right now.

**Kamryn:** But depends on who you ask.

**Paul:** Right. And technically, we're working right now as well. We are. This is work. I unplugged our headphones. I think we're still being recorded, but.

**Kamryn:** Yes, I definitely was like, ‘What just happened? Because all of the audio cut out.’

**Paul:** Well, Kamryn, did you know that it's a great big, beautiful tomorrow shining at the end of every day and tomorrow is just a dream away.