Hello and welcome to the Rx Counter a podcast produced by student pharmacists at the University of Iowa College of Pharmacy where we help you stay informed about hot topics facing the profession. I'm your host, Matt Yates and with us today is Dr. Dennis Herb, the director of the University of Iowa pharmaceuticals trial abbreviate as you IP. talking to us about pharmacy industry and what it's like to have a pharmaceutical manufacturing plant in a college of pharmacy. A little background before we get into it. The College of Pharmacy here does have a pharmaceutical manufacturing plant right under its basement, a lot of faculty let alone the students don't know about it. We're really trying to bridge the gap between those two sections of pharmacy right now and just like to learn What pharmacy industry is because it's been shot out of our curriculum as students. So, Dennis, thank you for being here. Thank you for sharing some information with us. My first question to you is what is the role of a clinical pharmacist and pharmacy industry?

Okay, well, first, thank you for the invitation, Matthew and pleased to be able to speak with with your group and the rest of the pharmacy students. With regards to your first question in there are many opportunities for clinical pharmacists industry. Historically, it has been on the marketing and sales side of organizations. But the model that's out there and pharmacy right now how you can actually interact with physicians has changed quite dramatically. And because of that, I think the role of the clinical pharmacist has changed here. industry to what you'll see now is organizations. Big Pharma, for instance, will have a scientific affairs group where clinical pharmacists can play a great role in helping move products forward. So in these groups, they basically are looking at soon to be launched or new products onto the marketplace. And they interact with key opinion leaders and physicians around the world to establish programs that utilize the best value for the products that are out there. In the scientific affairs group. It's highly scientific. It's about running what's called phase four studies, where you do small control studies that further show the value of your product in the marketplace. Prior to that, in like a medical affairs group, it's more of just getting message out, suppose yours, getting engaging key opinion leaders about your product. And that's one that's big Pharma and everywhere I see clinical pharmacists Excel. The other though, when you when you look at industry, you also have to think about what the current model on industry is right now, many of the big pharmaceutical companies have started downsizing research. And what they've been doing is going to smaller biotech companies buying their products and buying the companies themselves. So a lot of the early stage research is now being done in the small bio tech companies. And one area that I actually see clinical pharmacist succeeding tremendously is in running those early stage trials. It's called clinical pharmacology, the industry language, and these are those studies that go from a pre clinical compound to first humans to look at safety profile to get an idea is going to be a proof of concept. Does it actually do what it's intended to? And I've seen in many of these biotech companies, most of the clinical pharmacology, people are actually clinical pharmacist. And I think that's a great role for the pharmacy.

Sounds good. I know that. Pharmacists have a lot to offer in terms of what we know about kinetics, how drugs work in the body. This be a great avenue for students that are taught and patient centered care, to go into the drug manufacturers, Big Pharma, and actually started kind of advocating for patient care almost, is in the past, you know, what we've been told as students and that kind of shut out Big Pharma in a way, how it's all about the money. But if we could really advocate for those patients and try to make sure that everything's going to be top level for them at the beginning, and maybe we don't run into these problems where you have carcinogens coming out later as products are in the market for a couple years and then have to get recalled and everyone's scared and your pharmacy about, oh, I take that medication, so I'm going to get cancer, right?

Yeah, so the pharmaceutical industry unfortunately, has a bad reputation. And much, much of that is actually due to a few players, I would say overall, and you know, speaking from my experience working at her company, which I find to be very ethical as well as GSK, Pfizer, the big name You hear their focus is really on the patient. And I think you have to keep that in mind aid at Merck. It's ingrained into us there was a lecture given by George Merck, who was our CEO in the 1950s. And part of the lecture he reminded, I think it was the Virginia medical school reminded that the graduating physicians that medicine is for the people and not for the profits, and that sinks into people's mind. But he actually went on with another line after that. This said, if we keep that in mind, the profits will follow because in the end and pharmaceutical industry, your business too, but if you keep focused on the patients, I think the industry can do a lot
of good. To your point about your background and education. I think it's perfect for the pharmaceutical industry because you'll find that you'll go to industry. And there'll be a lot of specialists, they'll become engineers in the manufacturing. They'll be sales and marketing people with MBAs and have very specific knowledge. And one thing that I saw and I think benefited me in my career is that when you come out of a pharmaceutical program, clinical pharmacists are my case, PhD and pharmaceutics from the University of Iowa. You have such a broad background, that you can talk across many different groups. And I think that helps you in developing a career and getting the messages across so that we do keep patients in mind patients to come first and can articulate that to decision makers within the company so that they understand very much what's the ethical. What's the best thing to do as we go forward programs and those I've been in those discussions and those are very difficult discussions. When you have one group who want to get the most value out of their product, and another group who wants to clearly make sure that we do everything that's fair and balanced. Yes. Could you talk a little bit about fellowships and pharmacy industry and pharmaceutical manufacturers and you know, what you might experience as a fellow at one of these companies? Yeah, I don't have that much experience with it. In my experience at Merck, mostly on the pharmaceutical development side of it, and then in manufacturing, it was more of a technical aspect, we would have summer interns where individuals will come in, learn more about the industry worked on a project or a component of a project. If you think about drug development cycle, it's multiple years. So somebody comes in for a summer, maybe they're trying to Assess pharmaceutics screw stability and products. Other areas, they'll just have a very small program, maybe look at a modeling simulation of what black drunk do in the plasma. So those are very difficult to get because you have to also realize that there are a lot of competitive students, you guys are top notch, but you're competing against a lot of other top notch people. So what I would suggest is that what you can do if there's if that's an interest you is go on LinkedIn, find somebody in the industry that is an area like and contact them and not just ask, Oh, do you have a fellowship or internship but ask them that you want to know more about your student you want to know more about it and get your name out there and like you're doing that get your resume or CV and front of them. And when an internship or fellowship opens up, at least you have that connection. So I think it's positive. I did an internship when I was in undergraduate, which basically formulated my career path from that standpoint.

Unknown Speaker  10:20
I guess, taking a step back going to the College of Pharmacy versus up. The bridge doesn't exist right now. I've talked at some game it is I've talked to some students, I tell them like, Oh, yeah, we've got this great manufacturing plant, the basement. They're like, I didn't know we had a basement. I've talked to some faculty and they don't even know about it. Yeah. So going forward. How do you think we can engage students and pharmacy industry specifically with you IP because we know that it's a very original idea to have a large scale pharmacy manufacturing plant within the confines of a college of pharmacy that's totally standing on its own.

Unknown Speaker  11:15
Yeah, yeah, I really do think it's a shame. We have a unique asset here at the university bond. And that's the university I have a pharmaceuticals which essentially is a contract manufacturing organization where we build product. For many startup companies are doing clinical trials, were able to do non sterile products, sterile products, and the sterile product aspect of it is totally unique to any college of pharmacy in the country. And maybe in the world, although I haven't researched it all the way. So not utilizing that asset to help people understand And what career opportunities there are or get a better understanding of what pharmaceutical manufacturing is or even clinical trial are, I think is a shame. And the organization, the dean, and I see that there is a need to develop a better program or programs is the ones that have been there sort of had disappeared. How to do that I don't have the specific answer open but I'll tell you what you have to balance you have to balance of what is going to be to the benefit of the students from an educational standpoint. And what do we need to do from a good manufacturing practices perspective to ensure that anybody who is in our facility is operating under GM pays and and if you spend time in industry, learning GMP That sounds very easy, but it actually takes months and months of practice. So how do you balance those two where it is a good education opportunity for students to learn and how much time and effort executive them to put into that educational opportunity versus how do we ensure that we maintain or good manufacturing practice and, and really a very good reputation with FDA that comes in space in our facility. So the dean has tasked me that's one of my objectives is to see how we can get that. Get a program like that together at many different levels, not just the professional level that you're in, but also at the graduate level to an even cross departments in the university, maybe something with the Center for bio fatalities, file processing. So it's not an easy solution to come up with what we're going to do, but it's one that I have to test test to do. As you mentioned before, I think you were pointing to is the new facility. And I know everybody's looking forward to getting
into the new facility classrooms are state of the art. It's going to really improve, I think, the educational value of university by education. Downstairs in that basement, we are building a sterile processing manufacturing plant. Two weeks ago you couldn't just arrived it's going to take about a year for us to get facility qualified that we can actually pay in clinical and commercial material out of it. But when we get to a stage that is ready, I would invite the students to come down and see and we'll have a discussion about what it means. I think you'd be fairly impressed from my perspective. It is a full fledged manufacturing facility, something that is similar to what you would see out Big Pharma or biotech.

Unknown Speaker 14:58
It's very cool. I know

Unknown Speaker 15:01
In the basement now there's just kind of some hallways with window panes that you could see in. That would be a start just letting students see what pharmacy industry and manufacturing looks like is I know we talked about Big Pharma and that's just kind of a couple words to some people. No one really imagines giant ovens giant freezers, I mean, that's what I think of because I love food, and that's why I was here, but

Unknown Speaker 15:37
just getting that exposure, well, that'll

Unknown Speaker 15:39
be one that can be one consideration that we have. Clearly, it is truly amazing that the facility that we have downstairs, the college Actually, its origins around 1970. And if you look at the facility, and I think It was surprised me what we can actually do from a capability standpoint. It would give you an insight of what we do downstairs to some extent but to be a very narrow view because all you wouldn't be limited to is just looking through the window. See people downtown Philly vials of medicine. I think the opportunity with the new facility, which is going to be open to the public, you'll be able to walk downstairs we have very large window so you can actually see the full manufacturing you will not need to be invited down there you can go down to your leisure, I think will give you a greater sense of what it really takes to manufacture. The other thing that may be helpful to and I haven't talked to any professors about this is just coming in and giving a lecture about what it is to do pharmaceutical manufacturing. is a complex task and it's one bag, even if you have no desire to go into the industry, just understanding what goes into give me a better sense. So the products that you are going with what they went through in order to get qualified, sure that they are the quality that you all believe they should have.

Unknown Speaker 17:25
I think it was during our P one year during our discovery class, all the different departments came in to talk about what research they do in their departments and what it means like what health services means or what pharmaceuticals mean. And so that seems like it would be a great time for a lecture for you to tell us a little bit more about what you do so we can learn earlier on rather than when we're late. p3 also can give you a good interview visited beginning of p3 year because a lot of people have opportunities to schedule on a PP appointments. And we're just we see it there, but we don't know what it is what it entails. So someone could give us some education on that before the time comes to choose the set

Unknown Speaker 18:09
those sites and I would agree with you, I think you have to get exposed to multiple times. When you're first starting out, you don't know why. In many different aspects and it will hit you very hard. But it takes a while for you to start deciding, okay, where your interest pharmacy, because there are many different interests in the hospital around the community or working at universities or in the industry. That takes it takes a little bit of knowledge and it takes a little bit of formulation of of what you really want to do and where's your purpose in life. And so I would agree coming not just that first year, but when you're in your third year and you bow Getting a little bit of sense of where what you want to do may actually be advantageous. And that may be the timeline. Take people downstairs, show them here. This is this is what it means and this is one.

Unknown Speaker 19:15
So with a couple students here with you here, Dennis, I'd like to just kind of go over what we've learned as students and industry where all their your students right now, or what we would want to learn about industry. You alluded to it, clinical trials happen right under us. That'd be great exposure to research.

Unknown Speaker  19:43
And we don't get a whole lot of

Unknown Speaker  19:48
exposure to how to do research and then how to process it. We get a lot of the end part of Let's read a paper and figure out what it's trying to powers but for the students now, what do we, what do we want to learn?

Unknown Speaker  20:07
I think it's important that we obviously know that, that the role of pharmacy industry, I mean, I feel like a lot of times, like you said, has a bad stigma towards it, talking to someone the other day and, and they were like, you know, big pharmacists, it's horrible. And I said, let's take a step back, you know, someone with diabetes, what do they need to live? insulin, what happens if you take insulin away from them? They may die. What happens if we took Big Pharma A long time ago, you don't have insulin. So advances in research and development is huge. And it's important for patient care and how it impacts patients lives, maybe not directly, but also directly because it happens outside of the pharmacy industry. But it's important that those aspects happen. And I think it's important to educate students, the general public, and everybody about You know, you know might be expensive for a reason, but we're paying for research and development.

Unknown Speaker  21:05
Yeah, yeah, it's it's an interesting point. I think the pharmaceutical industry and our lobbyists have not done a good job of really talking about the value that we provide. If we had a meeting at Merck, we're talking about what does it mean to have one worldwide quality because if you manufacture product and registered around the world, countries have different regulations, developing countries have higher standards, they're developing countries have lower standards then already developed country. And the question was, well, do we develop products to their standards or do we develop we had a biosynthesis on that committee, segoe manual You know, started out talking to us about, you know, I take, I take a stat and I take this drug and take this drug and it's helping me with my health and quality of life he goes, but I still think you guys are evil. And the reason was is because we have not done a good job of really showing the value of our products. And if you know, I, fortunately at 30 years of experience in the pharmaceutical industry, so I have seen these benefits from, you know, bringing drugs across that lower cholesterol drugs in people's lives, hypertensive drugs to Gardasil, which is a vaccine to prevent cervical cancer to one of the last products that I was involved in was key. Trudeau was changing how we do chemotherapy and extended people's lives. These are great and things that have occurred, yet you have one or two bad actors who are in it for making money and they just cloud the whole history. So Being able to get that message across I think, hopefully convince people that it may be worth their effort and career opportunities to to have a role in industry.

Unknown Speaker  23:14
How do you

Unknown Speaker  23:16
talk to a

Unknown Speaker  23:19
lay person general patient about Big Pharma. And when they have all these negative perceptions about pharmacists and drugs and all of that, how do you convince them when we are doing good for you or your loved ones and that they should trust us? It is it is very difficult because as most people see in the healthcare field, what they truly understand is costs what's the cost for the medicine and they look as close to the medicine

Unknown Speaker  23:58
hi and in many cases the pharmaceutical they're on doesn't have like immediate effect. It's you know, they're not all antibiotics or you know, pain relievers, you're on hypertension, your you get drug is working but you don't realize it
because you're not having any sort of adverse events. It is a very hard discussion to have. And I think we're it just comes down to is trying to not necessarily convince them but provide them the information so that they can make a decision about is this product valuable for them. And it's like if you try to just convince somebody else in the industry is is wonderful. Everything we're doing for you is good and you should find how much paid for it. That's a losing losing art, talking to people about the value that the product is having, how it could possibly be helping you. I think once people at least Make a decision of, you know, in their own mind. Is this the right thing? Is this the right product for me is the cost benefit. worth it? I think providing the information as well.

Unknown Speaker 25:14
I think sitting down with patients as it as a clinician, and telling them they're, you know, providing objective measurements, whether that be a blood pressure and a wincy cetera, showing the benefits that the drug did after be on it, and say, Hey, you know, this drug lowered your blood pressure by 20, over 10. I mean, this is good. And then we can compare it to someone who had high blood pressure and didn't get treated and they didn't have as great of quality of life. They ended up having a complication earlier in their life. So I think it's more than just putting someone on a drug and then saying, bye bye like you're treated now. It's following up with them on a monthly basis and explain to them the importance of adherence. What this drug is doing you if there are adverse effects. are other options, we can have those conversations if that happens. So I think it's just keeping the patient involved and engaged in their healthcare. And that will bring a new respect for them or from them towards you know, the drug pharmacists and industry.

Unknown Speaker 26:15
Yeah, I think the points that you were just raising is exactly that. provide them the information, let them decide as opposed to saying this is good for you.

Unknown Speaker 26:28
Well, it's always good that we end on value, right value for the patient. But that is all the time we have. Dennis, thank you for coming on. Thank you for sharing your insight with us. The rest of you, we hope you learned we'll catch you next time with Rx Counter. Thank you.

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