December 8, 2016 NIH Webinar

>> Hello, everybody. My name is Michael Weingarten. I'm the Director of the NCI SBIR development center. And on behalf of everybody in the NIH I want to welcome you to today's informational webinar for the I-Corps program at NIH. Before I introduce the others on the panel let me go over a few things.

Following this webinar today, actually from 2:00 to 3:00, we're actually going to have an NCI SBIR Twitter chat you can participate in. The information on how you can join this is actually on this slide here. And the key points are @NCISBIR and also #SBIRCHAT. So again, that's from 2:00 to 3:00 today. Particularly if you have any questions about potentially and hopefully applying to the I-Corps program I encourage you to join the Twitter chat. Christie Canaria, who runs the program jointly with myself, will also -- will be leading that Twitter chat discussion.

And we will be collecting your questions via the

chat box as part of this webinar, so please feel free to submit them throughout the webinar. And we're going to answer them as we go along also with more dedicated time at the end to address any questions that you have.

This webinar is also being recorded and closed captioning is provided. The recording and transcript will be made available in several days for you guys to see.

And all registered attendees will receive instructions on how to access the files from today's webinar.

So let me introduce the other members of the call today. We have again Christie Canaria, who is the joint program manager for NIH I-Corps. We also have Dave Charron, who is our lead instructor for the upcoming course.

And we have Brett Noel, who is the senior scientist at KinaSense. And Brett actually just went through our very last -- the last cohort that we ran over the summertime and he's had some very positive experiences from the program and some really exciting results that

we want to share with you so that you can see firsthand how your company can actually benefit from the program.

Let me just give you a little bit of background about I-Corps from the NIH perspective. I-Corps is a program that has been run by the national science foundation and created by the NFS in 2010 and they've actually run a total of 800 teams throughout the I-Corps program over the last six years. We first started offering the I-Corps program two years ago and just a year ago the president announced an expansion of I-Corps at the White House. In addition to the NIH, six other Federal agencies are also offering the program.

So what is I-Corps? I-Corps is -- it's really an entrepreneurial immersion course that's aimed at providing NIH SBIR teams with really the skills and the strategies to reduce commercialization risk. The way I really like to describe I-Corps is it's -- the program is all about helping teach start-ups and other small businesses how to build a business model around the technology that you're developing.

And we do that really through a focus on customer discovery. So a big part of the program is actually you and your companies reaching out to customers to teach hypotheses about the need in the market for the technology that you're developing.

So each team is actually expected to conduct over 100 customer interviews over the eight-week period. So the format is really focused on experiential learning. It's -- what I-Corps is not is we're not bringing in a set of consultants that are going to tell you what -- what your potential market is and who your key customer sets are.

What's really valuable and I think what separates I-Corps apart is it really is about you getting out in the community, you talking to who you define as your customer base, and really based on their feedback you develop and confirm a set of hypotheses around the technology that you're developing.

So the organizing principle for I-Corps is what we call the business model canvas. And there are nine different components to the business model canvas.

And this is again what you use as you're going

through the course. We focus on a different piece of the business model campus over each week of the course. So just to go through several of them, when you first come into the course we actually ask you to fill this out, all nine components. And again, answering these specific questions.

So as an example with value proposition, the key to value proposition is which of your customers' problems are you and your company, which customer problems are you trying to solve? And which customer needs are you satisfying?

And what are the key features that you're developing that match customer needs?

So typically that's the first key steps that -- the first key hypothesis that you develop around. And then you also are asked to identify who you think your key customer segments are. Who are you going to be solving or fulfilling a need for? And does the value proposition match those needs?

Some of the other key components of the business model campus include, for example, key activities. What is your regulatory strategy?

So one of the things you'll do over the course of the program is you'll actually interact with potential customers or consultants who could actually help you develop what your regulatory strategy might be.

Other key items, key resources, what is your reimbursement strategy and getting some feedback on defining how your reimbursement strategy actually might work.

Other key components include revenue streams as well as cost structure.

So again, you come into the class, you take it and initial cut when you're developing the course we develop hypotheses around those different key questions on the business model canvas and then over the course of the eight-week period you actually go out, you talk to customers and you validate or invalidate the hypotheses a you pivot in the overall strategy the feedback you're getting from the customers.

So it's really an iterative process that you're going through where you're modifying your business model canvas as you're going throughout the entire

course.

And the key is to get out of the lab, talk to customers and really focus on your overall business strategy.

So as you know, SBIR and STTR Phase II grant applications have two key components. You have the research strategy as well as the commercialization strategy. Phase II applications often focus on research strategy, but the real focus of I-Corps is to really help inform your commercialization approach. So one of the things you'll find in going through this program is that the companies who have already gone through I-Corps, it really helps them develop a much stronger overall commercialization strategy as part of their Phase II application.

And from one of the cohorts that has already gone through the program, we had a total of 19 teams in that cohort. Of those 19 teams, eight applied for a Phase II. And four were successful in getting funded on a Phase II SBIR. So they had overall 50% success rate.

So just to get based on the experiences of companies that have gone through I-Corps, it can really go a long

way in helping strengthen and inform your overall commercialization strategy.

So what is customer development and what is it not? It is not sales. These are not sales calls that you're going to be going on. So you're not actually supposed to go out and pitch your product or your technology. Rather what you are doing is you're going out and you're listening to potential customers and stakeholders and you're learning about what that customer wants and needs, what are their key pain points in their daily routines. And based on that information you can then incorporate those pain points and needs and actually identifying and improving your overall value proposition.

You're also learning about what key features of your technology would provide value based on direct feedback from customers.

We've had a total of three cohorts to date over the last two years at the NIH. When we first started this program we had four institutes that participated, including ourselves, the Heart, Lung and Blood Institute, NCATs and also the National Institute of

Neurological Disorders. And we've grown that from those four initial institutions to a total of 17 now that are participating in the program. Of the 57 teams that have gone through I-Corps, they have conducted over 6,000 customer discovery interviews, which goes a long way towards informing their future strategy and their future approach.

We surveyed the companies at different points when they're going through the program. We survey them at the beginning of the program, at the middle of the program and then when they've also completed the program. 90% have found the program to be very good or excellent. And 90% would recommend I-Corps at NIH to other companies.

We also surveyed what the learnings were coming from the program, and as you can see from this slide here, those are the nine key components of the business model canvas. Very little knowledge when companies first came into the program about each of those different components, but when they completed, as you can see, almost 100% knowledge across each of those categories.

A couple of other important items to note, companies also gained a great deal of knowledge in terms of developing their medical reimbursement as well as their regulatory strategy and also gained a lot of knowledge in areas such as preclinical development.

Finally, this last slide just gives you a sense of some additional key feedback. By the end of the class companies that went through had identified a viable commercialization for their technology and also had developed a scalable business model. And a number of them plan to apply for a future Phase II award based on going through the I-Corps program.

I just wanted to share one metric slide from the National Science Foundation. As I mentioned, they've had over 800 teams that have gone through I-Corps and they've had a longer track record in participating in this program.

They assessed companies that had -- companies and other teams that had gone through their I-Corps program and out of the 800 teams, 324 have gone on to start companies. Typically it's academic teams that

go through the NSF program. And those 324 companies have actually been successful in raising over $93 million in external private sector funds. And there have been three acquisitions.

I wanted to give you one sense of an I-Corps case study. This is a company that went through our first version of the program, a company called Novoron. They came into I-Corps developing a new drug to restore function after spinal injury. That's what they were funded for on their Phase I grant from NINDS actually. But based on their customer discovery and interaction with customers, they learned there was low interest at early stage spinal injury drugs, but the customers were actually very interested and in actually the company pivoting to focus on drug development for multiple sclerosis, and as a result the company changed their strategy, they decided to apply to the NIH for a grant for new treatments for multiple sclerosis and they received a new NIH award a year ago from the NINDS and are now pursuing that application.

I already mentioned the number of ICs that are participating. The due date for applications is

January the 9th.

The eligibility criteria that you have to have a Phase I SBIR or STTR from one of the 17 participating entities. That grant has to be active through the end of the course. So the course closes out in mid June.

You are able to apply to I-Corps using ASSIST. So I encourage you to look at that resource.

And don't forget to join us again for the office hour -- office hours from 2:00 to 3:00 today on Twitter.

And I'm going to go ahead and turn this over to Dave Charron, who is going to again talk about how the course is taught.

Dave?

>> And for everyone who has joined us today, please be sure to send in your questions to the question box and we'll be happy to answer those as we go through.

>> Thank you, Michael. That was a fabulous overview of where we are today and the activities of the NIH using I-Corps.

I'm just going to give a brief follow on to that from a faculty perspective. I'm the lead faculty on

the NIH I-Corps program. And just to give a little bit of context, if I can get my buttons to work here. There it is.

I just want to say welcome from the I-Corps faculty team. When you join I-Corps you're going to be involved in a very interactive program, and this picture shows the last -- oops, I went too far. This picture shows the last session that we had in D.C. where we had a team up in front of the room, we're interacting with them regarding their interview strategy and giving them the skills they need to go out and do the 100 interviews that Michael mentioned before.

When I say I-Corps team from a faculty standpoint, what you're going to interact with are really six entrepreneurs, people who have been in your position before. Faculty range from individuals like me who teach at an institution and have taught in the NSF I-Corps program to practitioners to people who have raised capital or been involved with capital formation on the venture capital side.

So the goal of the faculty is really to bring that

expertise to you, but not in a way that we're directing what you do. Our job is to help you find that commercialization plan.

And your job is to interview the customers that are relevant to your technology and your marketplace to really understand how do you take what you have in your SBIR Phase I to the Phase II or to the market in a way that makes sense from a business standpoint.

So that's why we have instructors that are focused on the business side.

How do we come to this? We came to it in a particular way. This represents in front of you a team that was in the last cohort, Albus imaging. To me it represents the challenge that we see often times as faculty. So Albus Imaging is a Phase I recipient. And the team that came in has three people associated with it. Yaorong is a Ph.D, industry expert in bio informatics, great person. The logistician, they actually give themselves names, this is Holly. She's got an MBA. She's the person really kind of driving the team. And the consul is Greg Hundley, who is the quote, unquote, the C level executive. He's the

person who really came up with this idea.

The idea is really in the middle of this slide. It is a solution, a diagnostic tool that identifies who is susceptible to cardiotoxicity. And that cardiotoxicity is associated with cancer survivors.

And so the problem that they saw was today's cancer patient becomes tomorrow's heart failure patient. How do we prevent that? How do we help the surgeons? But they had no idea really where the customer was.

And this is pretty typical of Phase I companies. They've got a technology that they're rolling out from an institution or an idea that they've come up with, they've gotten to Phase I, and when they get to the transition point it's kind of, well, where's the customer? Who's going to pay?

So what have we learned over time? We certainly know that the SBIR requires a plan, as Michael had said, there's a commercialization plan as a requirement there. But the founders themselves want to go beyond that SBIR. The SBIR is not the end game. And the SBIR program also wants them to go beyond the SBIR.

And we recognize as instructors having been in the entrepreneurial position, that those skills, entrepreneurship, are required to make that happen. And often times the teams are coming together and they need to understand those skills.

So we've got a set of customers, SBIR people. We've got a set of issues that we've got to attack, and the question is how do we do that?

One thing I want to recognize is that the lifetime of an entrepreneurial activity is pretty long. And we are really attacking the first phase of this cash flow diagram where the company has been set up or the project has been set up and it is consuming capital that has been given to them via grant, maybe has some small angel funding, and is trying to understand does the technology work, can we actually move this thing forward? And our job as faculty is to get you to the next phase.

That next phase comes to that customer development piece. So instead of being solution oriented, now we're going to be customer oriented and we're going to set you off into a search mode. And that search

mode is about customer discovery.

The reason why we do that is in order to get that commercialization plan correct, we need to be in consistent, tight understanding of your customers' needs. And sometimes your solution is going to have to change in order to get to that marketplace. And that's okay. That's the way the entrepreneurial activity works. You're not in execution mode and part of the challenge here is to get you to recognize that execution is when you're actually building the company. You understand your business model and our understanding watching these companies is that almost none of them have the right to go on to execution. They're really searching for the business model.

So I can overlay this cash flow diagram on the search phase, you're all burning capital, you're all going to go for Phase II, and our job is to get you to understand who your customer is.

The business plan is not the commercialization plan, however, the commercialization plan kind of gets you towards that business plan. But the key and fundamental piece of how we link these two things is

through the business model. We use the model and run through its entirety with you. We test at every stage of the opportunity of this seven weeks that we're with you where you are in understanding and validating your business model. And we realize when you start that you're starting with guesses. Sometimes those guesses are pretty good guesses. Sometimes those guesses are pretty wild guesses. And things will change over time.

But the key is to understand that the business plan that you're aiming for is getting you to execution. The business model is what we're focused on, and that business model will link you to the commercialization plan that will allow you to start to execute downstream once you've got your Phase II and you've got clinical validation and you understand how your revenue streams work.

The combination of the course that you're going to take is really the business model canvas, customer development and the third element is the lean start-up.

The lean start-up is important to us as faculty

because this is not about going out and using extraordinary amounts of capital, extraordinary resources to build product. And our job is to go out and figure out what the customer needs and then integrate that back into the product development plan so that you can develop what's appropriate for your market and the customer's problems.

And that's what the lean start up is.

So the three elements of the course, business model, customer development, and this understanding of how you build the company, how you build your products.

Once you join you're going to join a very big network of activity. And this is one of the benefits and you will hear this from a lot of teams is just the interaction with all of the other teammates in a cohort is quite exciting. It's exciting to see the team in progress. It's exciting to see teams pivot, change their ideas and move to a different idea, and you will become part of this innovation fabric in the United States.

I can't emphasize this enough because this fabric

is a very rich fabric for you. You're going to meet a lot of people who have understanding of markets, you will get a lot of cross-pollination. Customers will come from other companies in your cohort and other mentors in the cohort.

So what you're going to do is you're going to get trained in this lean start-up method. You're going to develop answers to your business questions, not the technology questions, but the business questions. And at the end you're going to summarize this altogether in a final presentation or a final video.

Our goal, though, is to get you to the validated business model. And that's going to come through using a tool called launch pad center. It's going to give you an opportunity to see how your business model changes over time. And you're going to be the judge of whether you really have a valid business model or not.

As instructors, while we've all been in your shoes and in your seat before, our job is to give you criticism and comments on the business model, but your job is to understand how you validate your own

technical business model. Your activities, your company is unique and you are responsible for that final understanding of what your business model is.

This is all part of an evidence-based entrepreneurship activity where we frame hypotheses. We go out and do customer discovery. We look at MVPs and how you do simple tests around what your product might be.

We bring mentorship to bear. That's the faculty and the other people involved in the course. We bring this community together and we finally put that together in lessons learned. We call this evidence-based entrepreneurship because we're trying to apply the scientific method to the problem that you have, which is translating from SBIR Phase I and Phase II to a successful company.

We're going to be relentless. We want you to be relentless.

We're going to be very direct with you because we don't have a lot of times. Seven weeks is not a lot of time to spend with the different teams so we'll be very honest and we expect that honesty and clarity from

you.

We'll be very hypothesis driven. We're going to ask you every week what are you testing, what are your results and what are you going to do next? And that 100 interviews where some of you might be saying well, maybe we'll only do 40, our experience is that the it 100 gets you to a point of fidelity of understanding in the marketplace, where opportunities begin to open to you, instead of driving the opportunities and selling, you're listening to the customer and to the marketplace.

It's really a powerful tool, and the best teams do more interviews than fewer interviews. So expect us to be relentless and direct. All of the instructors will be this way, but we're really not being relentless and direct about you personally, we're being relentless and direct about your business model, about how the business model works in the marketplace and how you might be able to change that business model to make it better.

So we started with Albus Imaging. I want to say that they completed the course really well. One thing

they did is they developed a very healthy team and they worked exceptionally well together. And Holly put together these rules, which I think are very important for every team coming in. They all participate in the interviews. It's not one person going out and doing the work on the interviews. Everybody hears the customer. They're open and flexible in thinking. State representative of coming in with preconceived notions they're coming in with, they're going to be open to what the customer has.

And they critique the heck out of their ideas. This is because we all come in with confirmation bias. We all believe we know what's best for our customers.

That confirmation buy as are the things that the -- bias are the things that instructors are going to take away from you. Don't believe in so much you have, hold on to it, but listen carefully to what the customers have and critique your own thinking based upon what the marketplace says.

This team did a fabulous job interviewing. They did over 111 interviews with cardiologists and oncologists and all over the United States. It was

really remarkable in their effort. They averaged 20 interviews per week. That's really exceptional.

And what they found is that they were wrong. They thought they had a particular marketplace and they realized that the customer in that marketplace was really someone different. And they're a fun team, so this is what they said they were going to do at the end of the program is go sit on the beach, but in fact they were kidding, right?

They continued to do interviews and they continued to work this opportunity today.

So those are my comments and I'll hand it off to Brett.

>> Dave, thanks so much for sharing those thoughts. I want to take this time to also say that in the question box we had a few people wondering about the whole concept of 100 interviews. And I think it's great that you showed how particular teams actually utilized that time in I-Corps to go through the program, but it's not enough for instructors at NIH to talk about this. It's really great for you to hear from the actual companies who go through the program.

So next we have Brett Noel. Thank you.

>> Thank you, Christie.

So my name is Brett Noel. I'm a senior scientist at a company called KinaSense and we participated in I-Corps over the summer.

So KinaSense develops research tools that aid preclinical researchers in accelerating drug candidates from preclinical development to clinical trials faster than gold standard tools can.

So I want to give you an idea of our experience in I-Corps and the framework of this presentation is our final project, but I'm going to kind of go through it kind of fast and get to the real key points that I want you to take away from today.

So we did 102 interviews during I-Corps and that was on the low end of the spectrum. Mostly with scientists and bio tech and big pharma companies and professors, but we also were surprised that we could get in touch with a lot of executive leadership in these bio tech and pharmaceutical companies.

So our team consisted of Steve Ouellette, our chief technology officer and co-founder. And myself who

both completed our Ph.D in the same lab where we did this technology at Purdue. And Isaac Schumman, our business development manager.

So I wanted to show off by showing you our business model canvas on day one of the program, which was quite half baked and very vague.

Three areas I want to draw your attention to are the value proposition initially. So if you look, the things that we thought we could bring to companies was increasing their physiological relevance of their tests, predicting biomarkers and saving money, which we found in the end to be far too vague for any sort of business model canvas that would be worth it.

Secondly the customer segment, you can see we had drug discovery and clinical diagnostics, which are incredibly vague in very different markets.

And finally in the bottom right if you see the revenue streams we thought that the way we would reach these customers is by licensing our technology to them and they would just pay us for the tests that we developed.

So our original hypothesis is that there's a market

need for technology to measure cell-based endogenous tyrosine kinase activity in preclinical drug development and clinical diagnostic markets and you will see that is a very basic hypothesis. To see where that came from, KinaSense incorporated in 2013 -- that's when we filed for the LLC. And up until that point there had been about three years of research going into this business model. So by the time that we began I-Corps we had been reading technical literature and market reports for about six years. And we had actually conducted some of these types of interviews on our own with oncologists.

So our core competency is the design, validation and optimization of a specialized reagent which we thought would be of interest to companies interested in clinical diagnostics or drug discovery companies. And that if we could just focus on our core competency and perfecting our product, they would be interested in partnering with us or just licensing our technology.

So the very first day of I-Corps we learned that we needed to focus on one of these markets. So five

minutes into the mixer event the day before the kickoff, Nancy, who was our industry mentor, told us that there would be no possible way that we could focus on both of these markets because there would be far too different and the business models wouldn't complement each other. So that was quite a surprise right off the bat.

And luckily our third interview while we were on site was with a man named Scott Patterson who is the Director -- is the V biomarker sciences at Gilliad. And we learned that clinical diagnostics can a huge barrier to entry due to FDA regulations and almost every company interested in this wants to see your research tool validated in drug discovery for five to 10 years before they would even be considering using it as a clinical diagnostic.

So within the first day we made a major pivot in our thinking.

So we decided to put the clinical diagnostics on the back burner for now and expand our drug discovery customer segments into academic researchers, bio pharmaceutical companies and CRO development managers

in what we used.

So my mouse isn't going on to the next -- there we go.

Oops.

Sorry.

So anyway, we learned that there's -- there's technical difficulties here.

So anyway, we learned that there are very different business models in between drug discovery and clinical diagnostics and you need to focus on one before you with get to the other.

So the next thing I had spoken to you about before was we thought that we would be able to just license our technology to companies and they would be interested in it because it's interesting scientifically and presents an advantage over what's currently out there. And through a couple of our interviews we found out that that is not true and the vast majority of companies don't actually license their technology from other companies.

So through a couple of our interviews we found out that we needed to shift our revenue model. We have

to actually build our company from the ground up and show that we are competent and can stand on our own. The way that we would do this is by creating a standalone product or a kit that companies with buy off the shelf and we found even more important we'd probably be providing assay services so that we can take a compound from a company that we're partnering with and actually perform the tests in our labs and give them the data.

And then in this way it would lead to more revenue and place the customers' confidence that we're capable of doing what we say we can do.

Okay. So now that we know who our customers were and how we would get them to pay for our product, how do we actually reach them?

So if we build it, how will we get them to come? And this is one of the most interesting insights that we had during I-Corps.

So we mapped out this ecosystem in one of our lessons and I just want to focus on the three boxes in red.

On so we found out that academic labs and bio

pharmaceutical companies will probably be our main customers and how do they find out about new technologies and who influences what type of technology do they use?

So we found out that that's mainly through the opinions of key thought leaders in the field and these key thought leaders were partnered with assay development companies to give them feedback and also publish on the technology that these companies are trying to develop.

So we found out through I-Corps that there's a very small tight knit community effort driving adoption of new technologies. So through I-Corps we're actually able and forced to identify who the key opinion leaders in our field are and we actually interviewed pretty much everybody what was named and these three people as well and found out that they are often consulting with assay companies that we would view as competitors and helping them with their technology and they'll publish on them and endorse them and this is the way that companies find out about new technology and drive the ecosystem.

But one of the more interesting things we found out is when we would interview somebody at say Discover X, they would say oh, these are really interesting questions. I know somebody at Promega that you should talk to, and in turn we would have already talked to this person. And somebody at promega would find out what we were doing and say oh, go talk to somebody at Cell Assay Innovations. So we found out the main way to get into the ecosystem is through the key leaders, but you really need to participate collaboratively to survive.

So in summary, we learned that we need to focus on the drug discovery market by developing products that companies can buy themselves and use our offering services, fee for service assays and that we need to integrate ourselves into the broader community in our field to drive market adoption.

So in the end our final company hypothesis a rounded out that kinase researchers need the assays to develop the activity in cellular models for reducing the time to takes to move a candidate drug from preclinical development into clinical trials. So that's a

considerably more well thought out company hypothesis.

So our future plans after -- immediately after I-Corps were to continue building our platform as a research that tool and establish these relationships and collaborations. And we found that this customer discovery and interview method was absolutely paramount to our success. So I think David was mentioning you need to eliminate confirmation bias, and that ended up being I think one of the biggest lessons that almost everybody takes away because if you go in and tell somebody what your product is, of course they're going to think it's great, but that doesn't really mean they'd buy it.

And then we also were encouraged to explore some larger market opportunities of our technology. And I'm going to come back to this in a second so we can move on.

So we have to acknowledge the teaching team, David, Aileen, Edmund, Nancy, Todd, Bob are fantastic. Or TA Lauren was very prepared and made it easy on the teams. And I would also like to echo the thought that

you learn so much from your cohort teams. You know, you might not get the same experiences they do, but you can certainly learn from their experiences and you have so much contact with them, it's really like going through a very intense boot camp.

I want to thank Michael and Christie and venture well. And I want to just briefly touch on what's gone on since then.

So these are our future plans. So our Phase I activities -- our activities, we wanted to submit a Phase II. I-Corps is intense active sieve, but we are -- intensive, but we are still on track for that. We also had a Phase I that we had submitted in May, and we went and reworked it through the learnings that we attributed directly to I-Corps and resubmitted it after I-Corps in September and we scored eight points higher on our resubmission. And we directly contribute that to what we learned in I-Corps.

We were able to license the IP that we found to be critically important to our company activities through I-Corps and we didn't waste money licensing the IP on a few of the projects that we found wouldn't

be of interest to our customers.

And we also were able to tighten up our pitch quite a bit and we've had offers for outside funding afterwards. But Michael had mentioned earlier that we had some serious success and I want to tell you about that right now firsthand.

So we were able to establish a relationship with key opinion leaders which lead to finalizing a contract that I'm literally going to leave this webinar and go sign with a major pharmaceutical company this afternoon that will fund our company for at least a year.

And it's very interesting. This is literally six degrees of separation. I ended up meeting these people through my dad getting me in touch with a headhunter, who got me in touch with a consultant, who got me in touch with the Director of a lab, who got me in touch with his boss who got me in touch with his boss and that is who we ended up negotiating the contract with. And that would have never happened if not for I-Corps.

We've also, through the customer discovery process

that we learned in I-Corps, have been able to extend this to another major pharmaceutical company that we're currently in contact with, and are looking to solidify a contract in the same way -- in the same way. And we would have never known how to go down this path and discuss these things with potential customers without biasing their notion in the first place without learning through I-Corps.

So some of the lessons I want to share with you. So first of all, I-Corps is very time consuming a, and I can't lie about that. It's probably about 40 hours a week and your research will slow down. So I'm sure you're wondering if you can really afford to participate in I-Corps.

And I would just tell you that, you know, some of the things you'll learn are customer discovery is a skill that really, really needs development. And I'm sure there are a lot of experienced entrepreneurs on this webinar, but there were a lot of experienced entrepreneurs in my cohort and I guarantee that everybody would agree with me that you really, really learn a lot.

One of the main things that you learn is that academic articles and the research that you do outside of direct customer interviews can be very misleading. And one of the reasons for that is that the people writing these articles are often not your customers. They're often a customer of a customer.

So while it may seem like there's this major market need, that doesn't mean that you'll actually be able to get your product to them and actually get paid for it.

So interviews with actual customers and these key opinion leaders are by far your most important data points. And the networking that your Fossed to do doing I-Corps really leads to understanding your place in the ecosystem much better than you ever could on your own.

Also the teaching team and your industry mentors are very, very valuable resources and their there and they're invested in your success and they don't pull any punches and they are really relentless and really help you actually find out if what you're doing is useful. And they're not there to just tell you that

what you're doing is a the greatest. And it was incredibly valuable.

And then the main thing I want to tell you is almost every single team pivoted in some way. And for us we focused early on and by our calculations and where we wanted to be, we accelerated our company development timeline by one on to two years. And a lot of teams were able to reassess what they would be submitting for new SBIRs because they found out that what they thought was a really cool, great scientific idea people actually didn't care about. Or they thought that the current gold standard was suitable for their needs.

So most companies did make very major pivots. I don't think there was anybody in our cohort who ended up really validating that their original idea was as best as they could do.

So I think instead of asking yourself whether or not you can afford to participate in I-Corps, I think the question should really be if you can afford to not participate in I-Corps?

Thank you, and I'll stick around for some

questions.

>> Thank you. Thank you so much, Brett.

So we do have a couple of -- a number of questions on the chat box. So continue sending those in.

One of them I'm going to direct to both Brett and Dave. It's around this concept of 100 interviews. We talk about that being very important for the course.

Can you talk about how you go around getting your first ones together? What kind of support are you given in how to conduct these interviews? Either one of you.

>> I guess I can start.

First of all, the first I think I would do is get linkedin premium because I think the vast majority of our interviews were from finding people on linked in, going through their networks, and just sending messages. I think we had to send about 500 messages to get over 100 interviews.

But not everybody will respond right away, but I mean, after that we've conducted maybe another 50 to 60 interviews and these are invaluable information.

Another thing is when you send these messages you

have to carefully craft them or you won't hear a response. I think a lot of people are naturally guarded against giving away any sort of company secrets or anything. So being able to tell them that you're from this company and you're participating in an informational program funded by the NIH, they're much more willing to talk to you. And once we kind of got the forecast down for these initial -- framework down for these initial messages that we sent, almost everybody would respond and we would have interviews.

>> Let me pile on just for a second. Brett's had hit it right on the head. The yield issue of 500 messages to 5100 interviews, I want everybody to understand there is a yield as you enter into the course. The second thing is the first 10 interviews, when they're set up, try not to make them with the CEO of company XY or Z. You will start more at the bottom of the company, the bottom of the food chain to enhance the breadth of your network, enhance the understanding of your maybe end user or maybe the ecosystem itself. And as your network grows, the addition of network

nodes will get you the further interviews. So what we try to do is get people to start at the bottom of the pyramid and work their way up because you're going to bring information to the upper levels of the pyramid that they may not know also.

>> I wanted to add one other thing that you just reminded me of, David. One thing that we found a lot of success and especially with those key opinion leaders was we would go find influential papers in our field and just find everybody's email and send them interview requests and just say hey, I see that you're an expert in kinase biology. I wanted to ask you what you think of current technologies?

And a lot of people, especially when you flatter them and tell them they're experts, are very willing to talk to you and very candidly as well. That's another strategy I would recommend.

>> Thank you, Brett. That's a really great one.

Another question that's come in is around IP. How do teams address IP as they go through the I-Corps program, interviewing people, but not giving away any trade secrets?

>> I'll take that one and let Brett pile o the IP issue comes up in every cohort. There's always a team -- almost all of the teams have an IP portfolio either in software, copyright, trademark, the whole gamut of intellectual property.

The goal of the program is not to talk to people about IP, it's not to go out and sign an NDA. He we recommend that you not sign an NDA. You're talking about the business that people have, not the technology that you're trying to sell. As long as you stay on that business problem side, you really shouldn't hit an intellectual property issue along the way.

But let me turn that over to Brett and he can take it forward.

>> So I think we only had a couple of issues of that. We did have one company that was very guarded and secretive and wouldn't really discuss anything. but With us, but David is right. The point isn't to go sell somebody on your technology or give them any hint of what you're doing. This is entirely informational. If they think you're trying to sell

them something they're not going to be as open or honest with you.

We found the best interviews is where we just kind of talked about the overall goals of, you know, the field in general.

So for us it was -- drug discovery, we discussed what the problems are. We never told them what we were doing or how we could solve their problems if we felt it could be a potential customer.

And if that ever did happen, what we would say is something like, well, let's get in touch when we're not -- at a later time and maybe we can discuss how we can benefit each other.

It was never something we discussed during any I-Corps interviews.

>> Thank you. This question is best answered I think by Dave. One of the folks on the line is interested in how I-Corps might compare to other entrepreneurship courses that are available, maybe specifically [indiscernible]? Can you answer that, Dave. Have you got that?

>> Yeah. I don't want to get into a large

discussion of all the various programs as you might know, there are many, many different courses. I-Corps is an evolution of several core components and how they come together to form this iterative model of rapidly going about finding a business model that's valid. And doing that in a resource limited way. Once you get that done then you can move on to building the company. And I think that's worked really well for companies out here in the Silicon Valley and obviously I-Corps and all of the teams that have gone through it both at the NSF level, the regional level, the NIH level, the DUE level, many, many other activities.

I think you mentioned bill Ouellette's disciplined entrepreneurship. Really good book, really great feed. As you read through that you will start to see some similarities between what he provides in his book and what we do.

I don't want to pick apart the differences because it's not really worthwhile. Our I-Corps program is meant to be intense and meant to get to the core of what your business is.

I love bill's model in that it gets you through 24 steps where you start here and you go through and you find all the different elements, but I think that's for a different type of company than what we're doing in the I-Corps program.

>> Thanks, Dave.

Another kind of follow on question that's come in, so what are the most important qualities instructors want to see in a team?

>> I think you've met one with Brett. One of the most important qualities is to get the work done and that's about scheduling time.

If you don't get the interviews done, if you don't interact with the instructors, if you don't interact with one another as a team, the failure modes are going to be you didn't get enough interviews, you're subject to confirmation bias, you're not going to pivot when you need to pivot.

And the hardest thing that we've seen for teams to do is pivot.

When the customers are saying hey, look, we don't really need what you have, we might want something over

here or there might be a different customer segment for you, teams tend to white knuckle their original idea. They're holding on so tight that they refuse to pivot.

So our job as instructors is to help you pivot, but your job and the quality of the team is to embrace that information, be open to it and consider alternatives. You don't have to take the alternatives, but you need to be able to consider them and understand why that one is better, this one's not as good. We're going to go in that direction.

So the quality of openness and flexibility is really critical.

>> Thanks, Dave. This next question is for Michael.

If a company has an active Phase I SBIR that is ending before June 2017, is that team still eligible to apply?

>> Yeah. So that's a great question.

The answer is that you should connect with your Program Director for your particular grant and have that discussion with them.

There is a possibility you might be able to request a no cost extension on the grant so that it would still be active.

However, you shouldn't just be doing that so that you can participate in the I-Corps program. There should still be some ongoing research to conduct on the grant itself.

So that's why we ask you to touch base with your Program Director to have that discussion, but that is something that other teams have done and participated in the program following those discussions they have gotten no cost extensions.

And they are eligible.

>> Great, thanks, Michael. I think this one I'll address to Brett. The question is how much time spent in I-Corps is on site in class and how much is spent online or off site, I guess?

>> So there's two weekends. One at the beginning and one at the end. There were three days in the beginning and two in the end that were on-site. For us it was in San Francisco.

And then online there was about a four and a half

hour class every Wednesday from 12:30 eastern standard time to 5:00. And that was it as far as the class.

And we also had office hours that on Tuesdays that was maybe a 20 to 25 minute call with our industry mentor, but other than that you pretty much are on your own to do all the work, which there's about an hour of videos to watch each week, and then some reading assignments, but that's the time commitment can really be scheduled at your convenience other than the webinar.

>> Great, thanks. We have time for one more question and I think I'm going to address this to Dave as an instructor.

So is this program mostly applicable to start-ups or do small companies that have been around for awhile have a reasonable chance of finding value in the program? Our last question.

>> As you might imagine, I will give the easy companies, which is it is applicable across all the domains of companies. Start-ups, projects in the science lab, those are the NSF science teams, and all the way up to large corporations. The large

corporations have embraced this now. When they are thinking about doing corporate innovation, how do they innovative? And it's really intensely about the customer. We have had a number of small companies where the project that they are bringing I-Corps is a part of their product suite. So you can imagine a start-up comes in and they say this is this is it, this is everything in the company. These small companies can carve out a project that are an SBIR Phase I and they are also looking to understand where's the market? The CEO of the company is saying how do I manage all these different projects? Let's take this one, I'll understand how to do the process, I'll bring that back into the company, and I'll utilize it in other project areas. So we see that quite frequently.

>> Thank you, Dave. Some last closing thoughts, I want to thank everyone for joining us today. If you have any questions, we will be having a Twitter chat later this afternoon following this, in about half an hour. You can join us on social media @NCISBIR using #SBIRCHAT. Also these slides and a transcript will be available online. All the registered attendees

will receive information on how to access the slides and transcript once they are processed.

So once again, thank you everyone for taking the time to join us today. We hope to be talking with you again soon.

That's it, bye.