

NIH I-Corps - National *SBIR* Phase I Grantee Cohort Syllabus

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Domain Experts: Robert Storey, Todd Morrill, Nancy Kamei
Teaching Asst: Lindsey Mitchell

Schedule¹:

Opening Workshop: March 14-16th, 2016 (reception the night before)
Online Classes: Wednesdays, 1:00 - 4:30 pm EST via WebEx
Closing Workshop: May 2-3rd, 2016

Location: Bethesda Marriott

Office Hours: Mandatory each week. See online signup sheet.

Required Texts: *Startup Owner's Manual:* Blank & Dorf
Business Model Generation: Osterwalder, et al
Talking to Humans: Constable, et al

Course Resources: Additional course resources are available here:
<https://venturewell.org/i-corps/nih/>

Course Mgmt S/W: Launchpad Central: <https://launchpadcentral.com>

Course Background: See the FAQ

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¹ Please see "Schedule at a Glance" produced by VentureWell for any last minute changes.

Deliverables Overview

Interviews: 15+ Weekly and 100+ Overall

You are required to interview *at least 15 new people* each week and log your interviews in Launchpad Central. This is a key metric used by the faculty and NIH to evaluate your progress. We expect every team to *reach 100 total customer interviews* by the end of the course. Planning is critical to your success; please make your interviews the top priority.

Presentations: Daily, Weekly, and Final

Your team will deliver presentations just about every day during the program. This syllabus provides detailed guidance for these assignments, including the content and time limitations for each. Presentation assignments will range in length from several minutes to over ten minutes.

Minimum Viable Product

Each team is strongly encouraged to produce an applicable MVP, according to the following guidance and direct guidance by the instructors. An MVP does not have to be a working product; it is anything you can put in front of a customer to test a specific hypothesis. Please consult your instructor before beginning to build the MVP, or using it to test a concept.

Medical Devices:

- Draw a schematic, mockup or other approximation of the physical product.
- Draw a series of diagrams describing its use (start to finish).
- Develop a bill of materials.

Diagnostics:

- Draw a schematic, mockup or other approximation of the physical product.
- Draw a series of diagrams describing its use (start to finish). Include the location of use along with the actions a clinician takes based on the results.
- Create an example of a report of the output of the test. What are the sensitivity/selectivity targets.

Research Tools:

- Create a schematic, mock-up of the instrument and/or reagent.
- Draw a diagram demonstrating its anticipated use, and a description of the anticipated change to current work and/or data flows.

Therapeutics:

- Define the types and quality of data required for a pharmaceutical or biotech company to want a commercial partnership or collaboration with your company.

Digital Health:

- Mock up of a website or app, as appropriate, which allows customers/subjects to interact and/or make choices and/or see data.
- Draw a series of diagrams describing its use (start to finish). Include the frequency of use along with any actions a user takes based on the results.

Final Deliverables

Each team will produce and present the following:

- *Lessons Learned* presentation (~10 minutes)
- *Personal Journey* video (2 minutes)

The content and format of these deliverables are shown in the detailed syllabus on page 14 and will be covered by the instructors in the online classes leading up to the Closing Session.

Class 1: *Business Models & Customer Development (on site)*

Due Before Class

Participate in the onboarding webinar with Lead Instructor Edmund Pendleton Thursday February 25th at 4:00 PM EST.

Prepare and confirm 10 in-person interviews near the venue

- Come prepared with 10 in-person interviews that you will do in the “get out of the building” hours. These should be related to testing your business model hypotheses.

Prepare and upload presentation

These will be 5-minute presentations on Day 1 of class.

Prepare a PowerPoint presentation for the class:

- Slide 1: Title slide: Team member names and photos; Team name and company logo and Team number and 1 to 2 sentence description of your product
- Slide 2: Your Business Model Canvas as you have entered on LPC
- Slide 3: Tell us about the 10 customer interviews you have scheduled. Why these people and what do you want to learn from them?
- Slide 4: Identify Market size (TAM/SAM/Target/Year 1-3)
- Slide 5: Who are your direct competitors? How are you different?

Read and Watch

- *Read in BMG*: The 9 Building Blocks of the Canvas pp. 14-49; Multisided Platforms pp. 77-87; Ideation pp. 134-145; Business Model Environment pp. 200-211.
- *Read in SOM*: Getting Started, Intro to Customer Development Model and Customer Discovery, Market Size, Value Proposition, and MVP pp. 1-81; Market Type, and Competitive Brief; pp. 112-124; Getting Out of the Building to Test the Problem pp. 189-199; Market Size, Product Vision and Product Features pp. 472-475; Customer Contacts Checklist pp. 487.
- *Watch* on LPC: Lectures 1, 1.5a, 1.5b
- *Watch* on LPC: the “How to Do Customer Discovery” Videos
 - Preplanning 1, 2 & 3
 - Interviews 1 & 2
 - Asking the Right Question
 - Death by Demo 1 & 2
 - Assuming You Know
 - Death by PowerPoint
 - Understanding the Problem
- *Read*: Talking with Humans

Answer the following questions as a team

- What is the difference between search and execution?
- What is a business model versus a business plan?
- What are the 9 components of the Business Model Canvas?
- What is a hypothesis?
- What do we mean by “experiments”?

- What are the key tenets of Customer Development?

Save your presentation using this format: TeamNumber_TeamName_Date

e.g., 41_Organ on A Chip_03152016

Upload your presentation to Dropbox by 7:00 AM Local Time in PDF Format

Class 2: Value Propositions & Product Market Fit (on site)

Due Before Class

Interview at least 5+ potential customers and record your interviews in LaunchPad Central

Read and Watch

- *Read BMG:* Customer Insights pp. 126-133
- *Read SOM:* Customer Segments pp. 85-92; Testing Problem Understanding pp. 203-226; Have We Found Product/Market Fit? pp. 260-266; Customer Segments Checklist pp. 476-477.
- *Watch on LPC:* Lecture 2 Value Propositions

Prepare and upload presentation

10 minute presentation, 2 minute instructor Q&A

Slide 1: Title slide: Team member names and photos; Team name and company logo, Team number, 1 to 2 sentence description of your product and the number of customer interviews since the last session and total number of interviews by type: in person, video conference, phone.

Slide 2: Hypotheses-Experiments-Results-Change

- What did you learn about your value proposition from talking to your first customers?
- Hypothesis: Here's What We Thought
- Experiments: So Here's What We Did
- Results: So Here's What We Found

Slide 3: Current business model canvas with any changes marked in red, different Customer Segments shown in different colors; **Must use the BMC in LPC and export from LPC to your presentation**

Slide 4: Value Proposition Canvas see:

- http://www.businessmodelgeneration.com/downloads/value_proposition_canvas.pdf
- What are the Products/Services, Pain Relievers, Gain Creators?
- What's the MVP you'll test?

Slide 5: So Here's What We Are Going To Do Tomorrow

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Class 3: *Customer Segments & Ecosystems (on site)*

Due before class

Interview 5+ potential customers and record your interviews in LaunchPad Central

Read and Watch

- *Read BMG*: Prototyping pp. 161-168
- *Watch on LPC*: Lecture 3 Customer Segments

Prepare and Upload Presentation

10 minute presentation, 2 minute instructor Q&A

Slide 1: Title slide: Team member names and photos; Team name and company logo, Team number and the number of customer interviews since the last session and total number of interviews by type: in person, video conference, phone. PLEASE ADD: your business thesis (who is my customer? what is my product? why will they buy it?)

Slides 2-n: What did you learn about your customers?

- *Hypothesis*: Here's What We Thought
- *Experiments*: So Here's What We Did
- *Results*: So Here's What We Found
- *What's Next*: So Here's What We Are Going To Do Differently Next Week

Slide 3: Current business model canvas with any changes marked in red, different Customer Segments shown in different colors; **Must use the BMC in LPC and export from LPC to your presentation.**

Slide 4: Value Proposition/Customer Segment Canvas see:

http://www.businessmodelgeneration.com/downloads/value_proposition_canvas.pdf

- What are the Gains, Pain, Customer Jobs?
- What's the MVP you'll test?

Slide 5: How do they solve this problem(s) today? Does your value proposition solve it? How?

Slide 6: Diagram of Customer workflow

Slide 7: What is the resulting Customer Archetype? Draw a diagram.

- Device startups start prototype, demo, or model
- Drug startups start version one Target Product Profile: include what data is needed preclinically and clinically to validate your therapy

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Class 4: *Customer Relationships* (WebEx)

Due before class

Interview at least 10-15 potential customers and record your interviews in LaunchPad Central

Read and Watch

- *Read BMG*: Visual Thinking pp. 146-159
- *Read SOM*: Customer Relationships Hypotheses pp. 126-143; Get Ready to Sell pp. 296-303; Customer Relationships Checklist pp. 480-482; Test the Problem and Assess its Importance pp. 489.
- *Watch on LPC*: Lecture 5 – Customer Relationships

Prepare and Upload Presentation

10 minute presentation, 2 minute instructor Q&A

Slide 1: Title slide: Team member names and photos; Team name and company logo, Team number, your business thesis (who is my customer? what is my product? why will they buy it?) and the number of customer interviews since the last session and total number of interviews by type: in person, video conference, phone.

Slide 2: What were your objective pass/fail metrics for each “Get” test/methodology

- What is your customer acquisition cost?
- How will you create demand?
- Who are the Key Opinion Leaders (KOL's)?
- Who will be on your Scientific Advisory Board (SAB)?
- What conferences do you need to present at?
- What journals do you need to be in?
- If any, who are the Bus Dev people you need to target?
- Build demand creation budget and forecast.

Slide 3: What did you learn about your Customer Relationships (Get/Keep/Grow)?

- *Hypothesis*: Here's What We Thought
- *Experiments*: So Here's What We Did
- *Results*: So Here's What We Found
- *What's Next*: So Here's What We Are Going To Do Differently Next Week

Slide 4: Current business model canvas with any changes marked in red, different Customer Segments shown in different colors; **Must use the BMC in LPC and export from LPC to your presentation.**

Slide 5: Draw the Get/Keep/Grow diagram - Annotate it with the key metrics

Slide 6: So Here's What We Are Going To Do Next Week

- Device startups start prototype, demo, or model
- Drug startups update Target Product Profile and update list of top pharma/biotech prospects with strategic need for your product

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Class 5: Channels (WebEx)

Due before class

Interview at least 10-15 potential customers and record your interviews in LaunchPad Central

Read and Watch

- *Watch on LPC:* Lecture 4 Channels
- *Read SOM:* Channels Hypothesis pp. 98 – 105; Meet the Channel pp. 243-244; Channel Roadmap pp. 332-337; Distribution Channels pp. 406-411; Channels Checklist pp. 478.
- *Review:* Mark Leslie Value Chain slides at <http://www.slideshare.net/markleslie01/070801-value-chain-and-sales-model>
- *Review Startup Tools:* <http://steveblank.com/tools-and-blogs-for-entrepreneurs/>

Prepare and Upload Presentation

10 minute presentation, 2 minute instructor Q&A

Slide 1: Title slide: Team member names and photos; Team name and company logo, Team number, your business thesis (who is my customer? what is my product? why will they buy it?) and the number of customer interviews since the last session and total number of interviews by type: in person, video conference, phone.

Slide 2: Channels:

- What is the distribution channel? Are there alternatives?
- What was it that made channel partners interested? excited?
- Draw the channel diagram - Annotate it with the channel economics

Slide 3: What did you learn about your Channel?

- *Hypothesis:* Here's What We Thought
- *Experiments:* So Here's What We Did
- *Results:* So Here's What We Found
- *What's Next:* So Here's What We Are Going To Do Differently Next Week

Slide 4: Current business model canvas with any changes marked in red, different Customer Segments shown in different colors; **Must use the BMC in LPC and export from LPC to your presentation.**

Slide 5: Draw the channel diagram - Annotate it with the channel economics

Slide 6: So Here's What We Are Going To Do Next Week

- Device startups start prototype, demo, or model
- Drug startups outline operational plan of the preclinical and clinical data that drive value

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Class 6: Revenue Model & Costs (WebEx)

Due before class

Interview at least 10-15 potential customers and record your interviews in LaunchPad Central

Read and Watch

- *Watch on LPC:* Lecture 6 - Revenue Models
- *Read SOM:* Revenue and Pricing Hypotheses pp. 180-188; Pivot or Proceed? and Financial Model pp. 437-459; Assemble Data Checklist and Validate Financial Model Checklist pp. 526-528.

Prepare and Upload Presentation

10 minute presentation, 2 minute instructor Q&A

Slide 1: Title slide: Team member names and photos; Team name and company logo, Team number, your business thesis (who is my customer? what is my product? why will they buy it?) and the number of customer interviews since the last session and total number of interviews by type: in person, video conference, phone.

Slide 2: What did you learn about your Revenue Model & Pricing?

- *Hypothesis:* Here's What We Thought
- *Experiments:* So Here's What We Did
- *Results:* So Here's What We Found
- *What's Next:* So Here's What We Are Going To Do Differently Next Week

Slide 3: What experiments do you run to test your Revenue Model and Pricing?

Slide 4: Current business model canvas with any changes marked in red, different Customer Segments shown in different colors; **Must use the BMC in LPC and export from LPC to your presentation.**

Slide 5: Diagram of Payment flows

Slide 6: Diagram the finance and operations timeline

Slide 7: Iterate: So Here's What We Are Going To Do Next Week

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Class 7: Partners (WebEx)

Due before class:

Interview at least 10-15 potential customers and record your interviews in LaunchPad Central

Read and Watch

- *Watch on LPC:* Lecture 7 Partners
- *Read BMG:* Open Business Models pp. 109-113
- *Read SOM:* Partners Hypothesis pp. 176-179; Partners Checklist pp. 484.

Prepare and Upload Presentation

10 minute presentation, 2 minute instructor Q&A

Slide 1: Title slide: Team member names and photos; Team name and company logo, Team number, your business thesis (who is my customer? what is my product? why will they buy it?) and the number of customer interviews since the last session and total number of interviews by type: in person, video conference, phone.

Slide 2: What were your hypotheses about what partners you will need?

- Partners should match your critical Resources and Activities
- Why do you need these partners and what are risks?
- Why will they partner with you?
- What's the cost of the partnership?
- Diagram the partner relationships with any dollar flows
- What are the incentives and impediments for the partners?

Slide 3: What did you learn about your Partners?

- *Hypothesis:* Here's What We Thought
- *Experiments:* So Here's What We Did
- *Results:* So Here's What We Found
- *What's Next:* So Here's What We Are Going To Do Differently Next Week

Slide 4: Current business model canvas with any changes marked in red, different Customer Segments shown in different colors; **Must use the BMC in LPC and export from LPC to your presentation.**

Slide 5: Final diagram of activities and resources/partners needed to accomplish them

Slide 6: Iterate: So Here's What We Are Going To Do Next Week

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e.g., 41_Organ on A Chip_03152016

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Class 8: Resources (WebEx)

Due before class

Interview at least 10-15 potential customers and record your interviews in LaunchPad Central

Read and Watch

- *Watch on LPC:* Lecture 8 Resources, Activities and Costs
- *Read SOM:* Key Resources Hypothesis pp. 169-175; Can We Make Money and Grow the Company? pp. 267-269.

Prepare and Upload Presentation

10 minute presentation, 2 minute instructor Q&A

Slide 1: Title slide: Team member names and photos; Team name and company logo, Team number, your business thesis (who is my customer? what is my product? why will they buy it?) and the number of customer interviews since the last session and total number of interviews by type: in person, video conference, phone.

Slide 2: What are your critical Resources?

- Resources should match your critical Activities
- Are they resources you already have?
- Do you need to acquire or partner with others to get them?
- How much will they cost?
- What human resources will you need?
- What equipment resources will you need?
- What financial resources will you need to acquire all these resources?

Slide 3: What did you learn about your resources?

- *Hypothesis:* Here's What We Thought
- *Experiments:* So Here's What We Did
- *Results:* So Here's What We Found
- *What's Next:* So Here's What We Are Going To Do Differently Next Week

Slide 4: What experiments did you run to validate that these resources can be acquired?

Slide 5: Current business model canvas with any changes marked in red, different Customer Segments shown in different colors; **Must use the BMC in LPC and export from LPC to your presentation.**

Slide 6: Rough diagram of activities and resources/partners needed to accomplish them

Slide 7: Iterate: So Here's What We Are Going To Do Next Week

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Class 9: Activities (WebEx)

Due before class

Interview at least 10-15 potential customers and record your interviews in LaunchPad Central

Prepare and Upload Presentation

10 minute presentation, 2 minute instructor Q&A

Slide 1: Title slide: Team member names and photos; Team name and company logo, Team number, your business thesis (who is my customer? what is my product? why will they buy it?) and the number of customer interviews since the last session and total number of interviews by type: in person, video conference, phone.

Slide 2: What did you learn about your critical Activities?

- Freedom to operate/IP?
- Clinical Trials?
- Quality data?
- Regulatory approval?

Slide 3: What did you learn about your activities?

- *Hypothesis*: Here's What We Thought
- *Experiments*: So Here's What We Did
- *Results*: So Here's What We Found
- *What's Next*: So Here's What We Are Going To Do Differently Next Week

Slide 4: What experiments did you run to validate these activities?

Slide 5: Current business model canvas with any changes marked in red, different Customer Segments shown in different colors; **Must use the BMC in LPC and export from LPC to your presentation.**

6: Rough diagram of activities and resources/partners needed to accomplish them

Slide 7: Iterate: So Here's What We Are Going To Do Next Week

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Class 10: Lessons Learned & Next Steps (on site)

Interview at least 10-15 potential customers and record your interviews in LaunchPad Central

Due before class

Read and Watch

- *Review and Watch:* Previous I-Corps teams final presentations, <http://www.slideshare.net/sblank/> for examples and other resources to be provided
- *Watch:* <http://www.slideshare.net/sblank/lessonslearned-day-presentation-skills-training>
- *Watch:* <https://venturewell.org/i-corps/llpvideos/david-riemer/>

Prepare and upload for review

- Draft 10-minute presentation
- 2-minute video (see Class 11 for format details)

This session will help prepare you, not only for your team's final presentation in this class, but with life skills that will hopefully benefit you in multiple venues for many years. Come prepared to learn about:

Storytelling

- The World – market/opportunity, how does it operate
- The Characters in your story – customers and you
- Narrative Arc – Enthusiasm, despair, learning then insight
- Show us – progression of images and MVP to illustrate learning
- Editing – does each slide advance the character and plot (learning)

Theater

- Point me at what you want me to see
- Ought to be self-explanatory
- Use analogies
- Tell a story that others can repeat
- Use common, audience appropriate language
- Understand the context (mainly, the audience) in which the story is being told by you

Save your presentation using this format: TeamNumber_TeamName_Date

e.g., 41_Organ on A Chip_03152016

Upload your presentation to Dropbox by 7:00 AM Local Time in PDF Format

Class 11: *Team Presentations of Lessons Learned (on site)*

Due before class

- Final presentation and video
- Completed entries into LPC

Lessons Learned:

Description of mandatory 2-minute video:

Create a 2-minute video to be shown before your final presentation. The video should summarize the customer discovery journey your team went on, highlighting the key customer insights that took you from your initial idea to today. Storytelling quality is critical. High production value is not (some of the best videos have been very straightforward). Also, make it personal - include the team in the video as well as key "aha" moments. This video is about the discovery process. It is NOT a marketing video for your product. Final videos should be <50 MB each (sizes can be reduced in editing software). Examples will be provided.

Presentation Format:

Each team will also present a 10-minute "Lessons Learned" presentation about what they learned plus:

Slide 1: Team Name, with a few lines about your initial idea and opportunity

Slide 2: Team members, name, background, expertise and your role on the team

Slide 3: Business Model Canvas on day 1. "Here was our original idea."

Slide 4: "So here's what we did..." (explain how you got out of the building)

Slide 5: "So here's what we found (what was reality), so then..."

Slides 6-n: Tell us using your canvases (~3) about your pivots and learning

Slide n: "So here's where we ended up." Tell us about:

- What did you learn
- If you think this is a viable business; why or why not
- What are your next steps

Final Slides: Click through each one of your business model canvas slides.

Save your presentation using this format: TeamNumber_TeamName_Date

e.g., 41_Organ on A Chip_03152016

Upload your presentation to Dropbox by 7:00 AM local time in PDF Format

Final presentation tips:

You cannot possibly cover everything you learned in 8-10 weeks in a 10-minute presentation. Don't try to. The final presentation is partly an exercise in distilling the most critical, surprising, and impactful things you learned in the process. Don't fall into the trap of making your final presentation too high-level. We need to see WHY your business model canvas evolved the way it did. Include anecdotes about specific customer interviews that support the story you are

telling. If you have a demo, prototype, screenshots, etc. include it in your presentation as a supporting character to illustrate your learning. We are not just interested in WHAT your product is, but WHY your product is – what did you learn from customers that shaped the product?