Hacking 4 Oceans: Entrepreneurship focussed on Ocean Conservation

Hacking 4 Oceans
Solving real problems facing oceans and coasts using Lean Launchpad methodologies

Course #:
- CSP 281A (grad)-5 units
- CRSN 151B (ugrad)-5 units (note look for the course that is offered Thursday noon-3pm)

3 hours in class time on Thursdays noon-3pm

Applications Open February 2021:
https://tinyurl.com/2021-H4O-Application
Learn Lean Launchpad and other Lean Design techniques for startup success and solve real problems.

Tackle complex problems critical to saving our oceans and coasts with an interdisciplinary team of students from across campus.

Application is individually or by teams of four UC Santa Cruz graduate and/or undergraduate students from any school, department, or program.
Class Overview

- Work in 4-5 person teams, solving a different problem for the Oceans
- Use Lean Startup Techniques to understand the problem and work on a solution
- Practice evidence based entrepreneurship
- Experience working directly with sponsors
- Experience what it is like to be in a startup
Startups and efforts fail not because of the innovation itself, but because the company fails to understand the problem they are solving.
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There are no facts in the building so get the heck outside.
The same techniques that create success for startups, can drive innovation for local community
3 Ways to Apply

• Assemble a team of 4-5 to tackle a Sponsor’s Problem
• Apply Individually
• Assemble a team of 4-5 to tackle a problem you are passionate about – Your own idea
Each Team

- Has a different Sponsor to help find out how to attack and define a problem
- Has a different Mentor to help them figure out how to be entrepreneurial
- Has the teaching staff in office hours
- Has industry liaisons for advice
Class Detail
The Lean Methodology
Elements of Lean Startup

Part 1

Part 2

Part 3

+ 

Extreme Programming

**User Stories** → **Architectural Spike** → **Release Planning** → **Spike**

**Iteration** → **Acceptance Tests** → **Small Releases**
1. Frame Hypotheses

• Frame Hypotheses
1. Frame Hypotheses

- Frame Hypotheses  ▶  Mission Model Canvas
Mission/Business Model Canvas = hypotheses of how you create and deliver value

Part 1
<table>
<thead>
<tr>
<th>Mission/Problem Description</th>
<th>Designed by</th>
<th>Date</th>
<th>Version</th>
</tr>
</thead>
</table>

### Mission Model Canvas

- **Feasibility**
  - Key Partners
  - Key Activities
  - Key Resources

- **Desirability**
  - Value Proposition
  - Buy-in & Support
  - Beneficiaries

- **Viability**
  - Mission Budget/Cost
  - Mission Achievement/Impact Factors

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**MISSION BUDGET/COST**

**MISSION ACHIEVEMENT/IMPACT FACTORS**

**KEY PARTNERS**

**KEY ACTIVITIES**

**VALUE PROPOSITION**

**BUY-IN & SUPPORT**

**BENEFICIARIES**

**DEPLOYMENT**

**KEY RESOURCES**
## Mission Model Canvas

<table>
<thead>
<tr>
<th>Partners</th>
<th>Activities</th>
<th>Value Proposition</th>
<th>Buy-in/Support</th>
<th>Beneficiaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who are our key partners? Suppliers?</td>
<td>What key activities do we need to be expert in?</td>
<td>How are we solving each customer’s pains/gains?</td>
<td>How does the team get “Buy-In” from all the beneficiaries?</td>
<td>Who are our most important customers? Stakeholders?</td>
</tr>
<tr>
<td>What are we getting from them? Giving them?</td>
<td>Resources</td>
<td>How?</td>
<td>Deployment</td>
<td>What are their pains/gains?</td>
</tr>
<tr>
<td></td>
<td>What key resources do we need to own or acquire? Financial? Human?</td>
<td>What product/service features match their needs?</td>
<td>How will we deploy the product to widespread use? What constitutes a successful deployment?</td>
<td></td>
</tr>
<tr>
<td>Costs</td>
<td>Mission Achievement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What is the Mission Budget/Cost?</td>
<td>How will we measure Mission Achievement?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. Test Hypotheses

- Frame Hypotheses
- Test Hypotheses

Customer Development is *how you search* for the model.
9 Guesses

- Key Partners
- Key Activities
- Value Proposition
- Customer Relationships
- Customers
- Key Resources
- Channel
- Cost Structure
- Revenue Model

Source: Alexander Osterwalder- Business Model
Customer Development is Hypothesis Testing
3. Build Incrementally & Iteratively

- Frame Hypotheses
- Test Hypotheses
- Build the product incrementally & Iteratively

- Business Model
- Customer Development
- Agile Engineering
MVP Definition

• What is the minimum feature set needed to learn from lead users and early adopters
  • Avoid building solutions that no one wants
  • Maximize learning
  • Get the facts early
The **Minimum Viable Product (MVP)**

- **Smallest feature set** that gets you the most …
  - learning, feedback, failure, orders, …
  - incremental and iterative
- It is **not** a prototype
- It is **not** a deployable version with the fewest features
- It is **what** enables a test of a hypothesis
- It may be a drawing, a slide, a wireframe, clickable workflow, etc…
MVP

Using a MVP early in the project prevents building a complete solution that nobody wants
The **Pivot**

- *Definition:* A substantive change to one or more of the business model canvas components
- *Iteration without crisis*
- *Fast, agile and opportunistic*
Getting Out of The Building

- You can’t pass by attending the lectures
- This class is not about our lectures
- You can’t cram this work
- The class is about the work you do outside the building talking to beneficiaries
General Weekly Flow

**Outside Class**
- Update the MVP
- Talk to 10-15 customers
- Update Narrative & Canvas
- Prepare Presentation
- Watch Udacity Lecture

**In Class**
- Team Presentation 10-minutes
- Mentor Engagement
- Office Hours
- Lecture about next canvas component
- Assigned Reading

**Week n**

**Week n+1**

- = students
- = teaching team
Experiential

• Getting out of the building – 10 hours/weekly
• Formal methodology for customer interaction
• Focus on Minimal Viable Products and Pivots
  • Getting out of the building is a **big idea**
  • It accelerates speed of translation
Application

Apply: See Website at

http://hacking4oceans.ucsc.edu
Course Info - Hacking for the Oceans

Apply: Apply on website, Grad or Undergrad
Admission: By interview, Rolling
Enrollment: Class is limited to 35 people
Workload: 10 hours outside the classroom
Credit: 5 units
Timing: Thursday Afternoons, noon-3pm
Sessions: Spring 2021
Format: Flipped Classroom
Weekly team presentations
Teaching Team
Extensive Teaching Team

- Anne Kapuscinski
- Sue Carter
- Steve Weinstein
- Radhika Malpani
- Andrea Carafa
- Sarah Eminhizer
Anne Kapuscinski

- Director of Coastal Science & Policy Program
- Professor of Environmental Studies
Sue Carter

• Provost Rachel Carson
• Prof Physics
• Narinder Kapany Professor in Entrepreneurship
Steven Weinstein

• Teach
  • Stanford – H4D, Lean
  • Haas – Lean, H4Local

• Product and Startups
  • Media & Ent
  • R&D
  • IOT/Small Electronics
  • Workforce development
Radhika Malpani

- Advisor to startups
- Former Senior Eng Director, Google
  - Founder Google Images
  - Founder Google Travel Search
- Mentor
  - Stanford Lean Launchpad
  - Unreasonable Impact
  - Mulago fellows
Andrea Carafa

• Leads the Blackstone Launchpad powered by Techstars and teaches innovation at UCSC

• Founded two ventures

• Taught and researched innovation at Stanford, CERN, the European Commission, and several European universities

• Contributor to the World Economic Forum, MIT Technology Review IU35, Partnership on AI, and UN
Sarah Eminhizer

- Coastal Science and Policy Graduate Program Administrator & Advisor
- Coral Reef Alliance-Fiji, Indonesia, Adaptation
- Blue Earth Consultants
- Environmental Planner, American Samoa
Steve Blank (advisor)

- 8 startups in Silicon Valley
  - Semiconductors
  - Supercomputers
  - Consumer electronics
  - Video games
  - Enterprise software
  - Military intelligence

- Teach:
  - Stanford, Berkeley, Columbia, UCSF
  - Details at www.steveblank.com
Questions

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      Steve Weinstein sweinstein@bmnt.com