Overview & Approach

By: Jonathan Lui, Managing Director
The Center for Advancing Innovation
August 8th, 2017
FCSC Challenge Overview
Creating 100 Startups to Drive Innovation in Cancer

What is it? A start-up challenge featuring cancer prognostics, vaccines, diagnostics, therapeutics, and devices developed by federal labs, hospitals, and universities

Challenge Goal: Reduce the burden of illnesses that have the highest economic cost and the most negative impact to quality-of-life to cancer patients. Lower the cost of current treatments and discover novel ways to manage cancer-related illnesses

Challenge End Point: 100 new startups launched with seed funding and licenses in the field of cancer
The Laura and John Arnold Foundation’s core objective is to improve the lives of individuals by strengthening our social, governmental, and economic systems. LJAF is providing $1.2 million in funding for the orchestration of the challenge.

MedImmune/AstraZeneca partnered with CAI to provide additional funding and advisory. Exceptional startups could be targets for funding, invitations to a MedImmune pitch day, and advisory support.
Center for Advancing Innovation — Mission

Due Diligence – Select the Best Federally Funded Inventions

Commercialization Strategy
Startups & Industry

Maximize Commercial Potential
Operators & Management Talent

CAI Overview

Core team of 20. Leader 24+ yrs of experience. Evaluated 175K+ inventions; 120+ high profile engagements resulting in $210B profit

Key Assets: Due diligence trade secrets; Award-winning Challenge-Accelerator

Established: 21 federal labs partnerships; 24K inventions; first-of-a-kind startup challenge model

RESULTS: Launched 80 companies; 2000+ jobs
Unprecedented media attention/recognition; Numerous Keynotes and Panels on innovation

Prestigious Awards from HHS, FLC, Challenge.gov

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Awards and Notable Mentions

Awards and Accolades

Best in Business Plans/Entrepreneurship

Challenge.gov
Government Challenges, Your Solutions

Secretary’s Pick Award in Innovation

HHS IDEA LAB

Award for Excellence in Technology Transfer

The Breast Cancer Startup Challenge
National Cancer Institute (NCI)

Notable Articles and White House Mentions

CAI’s Startup Challenges was recognized as #6 in “Celebrating President Obama’s Top 10 Actions to Advance Entrepreneurship, and Announcing New Steps to Build on These Successes”

The Breast Cancer Startup Challenge was recognized as #36 of 100 by the White House in "IMPACT REPORT: 100 Examples of President Obama’s Leadership in Science, Technology, and Innovation"

CAI coined the “Tinder for Startups” by Nature Biotechnology & "Shark Tank on Steroids“ at the BIO International Convention
Startup Challenge Journey

- VA Beach Bio Innovation Challenge
- Space Race Startup Challenge
- Freedom from Cancer Startup Challenge
- Neuro Startup Challenge
- Nano Startup Challenge
- Breast Cancer Startup Challenge

We Are Here
CAI Accelerator Impact – Process Flow

**Step 1:** Find the Best Inventions

**Step 2:** Perform Due Diligence on Portfolio

**Step 3 & 4:** Crowdsource Multi-Disciplinary Teams around Inventions; Create Entrepreneur Support Ecosystem

**Step 5:** CAI Accelerator Training Model

**Step 6:** Accelerator Spin-Outs Aligned with Industry Partnerships

**Step 7:** Inject Seed Funding

**Step 8:** Support Startups into Late Stage Investing
Accelerator Training Model – Deep Dive

40+ Webinars on Business of STEM
- Provided by industry experts
- Topics include: Incorporation, R&D Planning, Business Development, Financial Modeling etc.
- Eg. Venture Collaborations w/ Scott Weiner, Partner, Pappas Ventures

12+ Assignments
- Hands on company building exercises
- Guidance provided along with templates, training, and feedback
- Eg. Financial model, Pitch deck, Stakeholder engagement, Voice of the Customer Interviews

Collaboration across the ecosystem
- Regional collaboration and engagement through ambassadors
- Participants engage experts and other stakeholder groups such as investors
- Participants, mentors, etc. collaborate across teams, expanding entrepreneurial network

CAI Mentors
- Mentors are in every team to provide guidance and valuable insights
- CAI augments expertise depending on startup needs
- Mentors provide one-on-one guidance on success measures

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How Does our Challenge-Accelerator Work?

- **CAI identifies** commercially-viable inventions and **crowdsource** talent from around the world
- **Letter of Intent** - Teams form and select inventions. Teams apply to enter challenge
- **Elevator Speech** - Teams deliver elevator speech and executive summary
- **Business Plan** - Teams write business plans and pitch to world class panel of judges
- **Winning Teams** become founders of startup, negotiate license & raise seed funding

**12 Month Intensive & Disciplined Training**

**Challenge Launch**
- Engage Stakeholders, plan approach and identify key objectives

**Invention Selection**
- Form multi-disciplinary teams and select invention

**Tailored Training Curriculum**
- Paired with seasoned exec level industry, business/technical experts

**Elevator Speech**
- Teams deliver 2 minute video with executive summary

**Business Plan and Live Pitch**
- Teams write business plans and pitch to world class panel of judges

**Mentorship**
- Winners and Finalists Selected

**Teams Enter through Letter of Intent, Resumes, etc.**

**STARTUPS**

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Who Can Join the Challenge?

Recruiting Multi-Disciplinary Teams

Key Notes on Who May Participate

Initial Participants:
• Graduates, Researchers, Industry Employees, Entrepreneurs, Executives
• Entrants must have an entrepreneurial drive

Recruiting Core Team:
• No restriction on recruiting additional members
• Advisor and mentors can be on multiple teams - there is no conflict of interest
• Individuals can apply and we will work with the individuals to augment existing teams
• Match skill sets of mentors to invention and team gaps; possible additional team members include:
  • Business Development Leaders from Large Companies
  • Key Opinion Leaders
  • Regulatory

*and younger with parent’s permission as long as the rest of the team meets requirements
Value Proposition for Teams

**ACCELERATOR TRAINING**
Learn about business planning and strategy from our world class consulting experts

**EXPAND YOUR NETWORK**
Network with participants from various branches and communities of the industry

**SUPPORT AND MENTORS**
Receive personalized feedback, advice, and guidance from our advisors and mentors

**MEDIA COVERAGE**
Receive unprecedented media attention from news outlets, journals, and the White House

**PRIZES AND FUNDING**
Win thousands in Cash Prizes and potential to pitch for additional startup seed funding

**START A COMPANY**
Start a new career and join the ranks of the next generation of technology entrepreneurs
CAI in the Entrepreneurial Ecosystem

Asset Providers

Startup Support

galvanize

hello
tomorrow

Entrepreneurial Organizations

FDA

U.S. ARMY

NIH

NASA

McKinsey

Singularity

UCLA

Oxford

Nycomed

BPC

Business Plan Competition

Mass Challenge

Rice Business Plan Competition

WISCONSIN GOVERNOR'S

INVESTORS

Venture For America

Founders Institute

Bio Institute

Biotechnology Innovation Organization

Janssen

Pfizer

GE Open Innovation

Takeda

Cerevast

Novartis

Merck

Merck Global

GSK

GlaxoSmithKline

Avalon Ventures

Sanderling Ventures

Polaris

Third Rock Ventures

New Enterprise Associates

NEA

Space Angels Network

New Vantage Group

Pappas Ventures

SR-one

Open Therapeutics

MedImmune

Partners/Sponsors

CAI in the Entrepreneurial Ecosystem
Partnered Technology Transfer Offices
Challenge Timeline
FCSC Opened for Entry August 1<sup>st</sup>!

**Phase 0: Enter Challenge**
*Aug 1<sup>st</sup> 2017*
- Teams submit proposed members, Select Invention, and accept CDA
- **Aug 1<sup>st</sup>:** Open challenge for entries
- **Rolling acceptance until due date of elevator speech**

**Phase 1: Elevator Speech**
*Oct 18<sup>th</sup> 2017 - Jan 19<sup>th</sup> 2018*
- Teams develop a 2 minute elevator speech video and a 350 word executive summary
- **Dec 29<sup>th</sup>:** Due date for elevator speech and executive summary
- **Dec 30<sup>th</sup> - Jan 13<sup>th</sup>:** Public voting
- **Jan 19<sup>th</sup>:** Announce semi-finalists

**Phase 2: Business Plan**
*Jan 20<sup>th</sup> – May 31<sup>st</sup> 2018*
- Teams develop a 10 page business plan accompanied by a financial model and 20 minute live pitch
- **May 6<sup>th</sup>:** Due date for business plans
- **May 7<sup>th</sup> - 18<sup>th</sup>:** Live pitches
- **May 31<sup>st</sup>:** Announce finalists and winners

**Phase 3: Start-up**
*June 1<sup>st</sup> - Aug 31<sup>st</sup> 2018*
- Teams launch their startup; raise capital and negotiate a license to the invention
- **Bi-weekly milestones for teams – schedule to be outlined**
- **Aug 31<sup>st</sup>:** Announce startup medal of honor awards

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## Roles You Can Play

<table>
<thead>
<tr>
<th>Role Name</th>
<th>Responsibility</th>
<th>Time Commitment</th>
<th>Phase</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambassador</td>
<td>Organize Regional Ecosystem - Receive Equity in Startups</td>
<td>4 Hours/Month</td>
<td>All Phases</td>
<td>July ‘17 – May ‘18</td>
</tr>
<tr>
<td>Team Participant</td>
<td>Prepare Deliverables; Compete for Funding and License(s) to Invention(s)</td>
<td>20 Hours/Week</td>
<td>All Phases</td>
<td>Sept ‘17 – Aug ‘18</td>
</tr>
<tr>
<td>Invention Selection Committee Member</td>
<td>Help to Select Inventions to be Offered in Challenge</td>
<td>Variable</td>
<td>Phase 0</td>
<td>May ‘17 – Jun ‘17</td>
</tr>
<tr>
<td>Cheerleader</td>
<td>Help Spread the Word to Recruit Team Participants</td>
<td>Variable</td>
<td>Phase 0</td>
<td>May ‘17 – Jan ‘18</td>
</tr>
<tr>
<td>Mentor</td>
<td>Coach Teams Related to a Select Invention</td>
<td>2-4 Hours/Month</td>
<td>All Phases</td>
<td>Oct ‘17 – ongoing</td>
</tr>
<tr>
<td>Advisor</td>
<td>Coach All Teams Related to a Specific Topic</td>
<td>1-2 Hours Total</td>
<td>Phase 1 or 2</td>
<td>Sept ‘17 – Mar ‘18</td>
</tr>
<tr>
<td>Judge</td>
<td>Evaluate All Teams Related to Each Selected Invention</td>
<td>8 Hours/Invention</td>
<td>Phase 2</td>
<td>May ‘18</td>
</tr>
<tr>
<td>Sponsor</td>
<td>Sponsor Events</td>
<td>Variable</td>
<td>Phase 3</td>
<td>Aug ‘17 – Aug ‘18</td>
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</table>
Summary: Startup Challenge & Accelerator

Identify High Value Cancer Inventions Globally
Evaluate for Commercial Viability
Teams Compete & Receive Entrepreneurial Training
Winners Create Startups, License, & Receive Investments

Outcomes
Licensed Inventions
Companies Formed with Increased Success
Training for Next Generation of STEM
Knowledge-Based Jobs Created
New Markets Created

Scope Over 12 Months
- Identify high-value, emerging technologies aligned with Life Sciences industry and MedImmune-partner mission areas
- Implement best practices to help teams raise capital via multiple hot seats and investor forums
- Create startups with strong management teams and experts
- Develop and deliver extensive entrepreneurial training
- Train 1000+ teams in the business of STEM
Interested?
Sign-up for More Information

Visit our Website at: http://www.freedomfromcancerchallenge.org/signup.html

What you can do now:
1. Start your application – you can enter as an individual!
2. Tell your friends and colleagues about the Challenge
3. Start looking for teammates: seek industry, academic peers, and research advisors

Jonathan Lui | Managing Director
Jonathan’s Cell: (972) 740-3615
Jonathan@thecenterforadvancinginnovation.org
http://www.freedomfromcancerchallenge.org
Start your Application!

Three White House Briefings in 2016: Advancing innovation and updates on CAI challenges and startups.

White House Articles

- **Celebrating President Obama’s Top 10 Actions to Advance Entrepreneurship** - recognizes the Breast Cancer Startup Challenge
- "**IMPACT REPORT: 100 Examples of President Obama's Leadership in Science, Technology, and Innovation**"
- **Applying the Innovation Toolkit to Bring Cancer Nanotechnology Inventions to Market**
  Article about the recent Nanotechnology Startup Challenge in Cancer
- **Celebrating National Entrepreneurship Month**
  Article features the White House’s support of a number of activities focused on entrepreneurship and innovation; Features the Breast Cancer Startup Challenge and Neuro Startup Challenge
- **From Lab to Market: Accelerating Research Breakthroughs and Economic Growth**
  Breast Cancer Startup Challenge Featured in an article highlighting the federal labs efforts and success in driving technology from Lab to Market
- **Startup America Going Strong at Three Years**
  Presidential Memorandum directing all Federal agencies to accelerate high-growth entrepreneurship. CAI's Startup Challenges are featured
<table>
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<tr>
<th>Publication</th>
<th>Keynote / Panel</th>
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<tbody>
<tr>
<td>2016 Government Accountability Office Study</td>
<td>CAI and our challenge model was highlighted in a study to identify open innovation strategies to address complex and cross cutting challenges facing the federal government</td>
</tr>
<tr>
<td>2016 Cancer Nanotechnology (Springer Open) Article</td>
<td>Springer's <em>Cancer Nanotechnology</em> journal promoted the launch of the Nanotechnology Startup Challenge in Cancer by publishing a peer-reviewed article, authored by Rosemarie Truman and Dr. Cody Locke (CAI)</td>
</tr>
<tr>
<td>2016 National Nanotechnology Initiative Strategic Plan</td>
<td>CAI's Nanotechnology Startup Challenge in Cancer was outlined in the National Science and Technology Council Committee on Technology's Strategic Plan for the commercialization of government research</td>
</tr>
<tr>
<td>2016 Space.com Article</td>
<td>Space.com promoted CAI’s SPACE RACE startup challenge with NASA in their article “To the Moon! NASA Contest Kick-Starts Innovative Space Tech”</td>
</tr>
<tr>
<td>2016 NASA.gov Article</td>
<td>NASA.gov promoted the launch of the SPACE RACE startup challenge with an article on their homepage</td>
</tr>
<tr>
<td>2015 Washington Post Article</td>
<td>Article about CAI bridging government and start-up community was featured in the Small Business Section</td>
</tr>
<tr>
<td>2014 WIRED Article</td>
<td>Article featuring CAI's first competition, the Avon Foundation-supported Breast Cancer Startup Challenge</td>
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Startup Success Stories
## Example Startup Successes

<table>
<thead>
<tr>
<th>Targeted Cancer Therapies</th>
<th>Batten’s Disease Therapy</th>
<th>Cancer Diagnostic</th>
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<tbody>
<tr>
<td><strong>ONCOLINX</strong></td>
<td><strong>Circumvent Pharma</strong></td>
<td><strong>ANGIO360</strong></td>
</tr>
<tr>
<td>Breast Cancer Startup Challenge Winner</td>
<td>Neuro Startup Challenge Winner</td>
<td>Neuro Startup Challenge Winner</td>
</tr>
<tr>
<td>$35MM Valuation</td>
<td>$5MM Valuation</td>
<td>$20MM Valuation</td>
</tr>
<tr>
<td>In Boston, MA &amp; Buffalo, NY</td>
<td>In Los Angeles, CA</td>
<td>In Milwaukee, WI</td>
</tr>
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- Won MassBIO, MassChallenge & Rice Business Plan Competition
- Received $1 million in funding for winning 43North Competition
- 18 agreements Pharma&Academia
- Top 30 under 30, TEDMED
- Products tested in space (ISS)
- Co-founder raised $65M Series A round with Freenome

- Oxbridge/SR One OneStart Finalist
- Received orphan drug indication
- Expertise in medicine, toxicology (INDS), regulatory affairs
- Recruited VP, Merck Veteran
- Top 5 percentile SBIR Grant

- “Best Pitch”, Healthcare Innovation
- Top 6 “Startups to Watch”
- Finalist, Wisconsin Governor’s Competition; WI Innovation Award
- Non-dilutive financing raised
- PoC: Human (Completed)
- First sale in 2017

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Oncolinx: Team Progress

- Winner of Breast Cancer Startup Challenge by the National Cancer Institute (NCI)
- Awarded grants from Avon Foundation for Women, NASA/Center for the Advancement of Science in Space (CASIS), and the Horizon 2020 Program (UK)
- Winner of 43North Competition, $1 Million Grand Prize
- Winner of MassChallenge & MassBio 2014 Startup Accelerators
- Winner of the Rice Business Plan Competition
- Raised seed financing, currently raising a bridge round
- Partnered with 14 pharma partners all over the world
- Partnered with 6 academic labs all over the world
- Offices in Boston and London
- Closed Startup Exclusive Option License Agreement with the NCI
- Showcases: TEDMED, World ADC Summit, Engage Forum Tokyo, Protein & Antibody Engineering Summit (Shanghai & Boston ’15)
Circumvent Pharma: Team Progress

- 2015: Received Orphan Drug Designation (FDA)
- 2015: Winner of the Neuro Startup Challenge (Heritage Provider Network, Center for Advancing Innovation, and NIH)
- 2016: Semi-Finalist in OneStart Accelerator
- 2016: Informal Pre-IND Meeting with FDA
- 2016: Submitted SBIR Application
- Recruited top medical expert as co-PI
- Recruited INDS (ex-Pfizer) toxicology specialists
- Recruited RareMoon regulatory consultants
- BDSRA (patient org) Letter of Support
- 2016: Recruited VP Chemistry, Merck Industry Veteran
- 2016: Conference Attendance
  - JP Morgan (SF)
  - World Symposium Lysosomal Storage Disease (San Diego)
  - CLN1/CLN2 Workshop (Bethesda)
  - BIO (upcoming, SF)
Angio360 Diagnostics: Team Progress

- Winner of the Neuro Startup Challenge by the National Cancer Institute (NCI)-2015
- Winner of the Best Pitch for the Healthcare Innovation Pitch event sponsored by Bridge to Cures-2015
- Phase 3 Finalist in the ongoing Wisconsin Governor’s Business Plan competition-2016
- Nominated for the Wisconsin Innovation Award-2016
- Created partnerships with the University of Wisconsin-Madison School of Veterinary Medicine and the Froedtert/Medical College of Wisconsin Hospital System
- Raised pre-seed financing to complete proof of concept research
- Completed human proof of concept research
- Initiated veterinary canine proof of concept
- Negotiated Exclusive Evaluation License with the NCI
## Expanded Challenges Every Year

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<tbody>
<tr>
<td><strong>Entries &amp; Teams</strong></td>
<td>Teams Accepted</td>
<td>54</td>
<td>29</td>
<td>71</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>Winning Teams</td>
<td>15</td>
<td>10</td>
<td>16</td>
<td>12</td>
</tr>
<tr>
<td><strong>Team Strength</strong></td>
<td># People</td>
<td>406+</td>
<td>509+</td>
<td>~1090+</td>
<td>460+</td>
</tr>
<tr>
<td><strong>Mentors/Judges/Advisors</strong></td>
<td></td>
<td>70+</td>
<td>60+</td>
<td>147+</td>
<td>17</td>
</tr>
<tr>
<td><strong>Startups Created</strong></td>
<td></td>
<td>15</td>
<td>10</td>
<td>22</td>
<td>11</td>
</tr>
<tr>
<td><strong>Direct Job Creation</strong></td>
<td></td>
<td>500+</td>
<td>300+</td>
<td>727</td>
<td>478</td>
</tr>
<tr>
<td><strong>Valuations</strong></td>
<td></td>
<td>TBD</td>
<td>TBD</td>
<td>$5-25MM</td>
<td>$2-35MM</td>
</tr>
<tr>
<td><strong>Example Successes</strong></td>
<td></td>
<td>TBD</td>
<td>TBD</td>
<td>Circumvent &amp; Angio360: 3 Years to Exit</td>
<td>Oncolinx: 5 Years to Exit</td>
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