Type them into questions box!

“Why am I muted?”
Don’t worry. Everyone is muted except the presenter and host. Thank you and enjoy the show.

Contact ACS Webinars ® at acswwebinars@acs.org

Join a global community of over 150,000 chemistry professionals

Find the many benefits of ACS membership!

Benefits of ACS Membership

Chemical & Engineering News (C&EN)
The preeminent weekly digital and print news source.

NEW! ACS SciFinder
ACS Members receive 25 complimentary SciFinder® research activities per year.

NEW! ACS Career Navigator
Your source for leadership development, professional education, career services, and much more.


Contact ACS Webinars® at acswебinars@acs.org
“It was a great session about grant proposal writing tips. I have benefited by knowing more about what proposal reviewers require and by making me more aware of not making noticeable mistakes during the proposal submission.”

Lee Soon Poh
Master of Science Student

What is ACS on Campus?

ACS visits campuses across the world offering FREE seminars on how to be published, find a job, network and use essential tools like SciFinder. ACS on Campus presents seminars and workshops focused on how to:

- Publish in top journals
- Find a job
- Effectively use research tools like SciFinder® and ACS ChemWorx
- Communicate your science
- Write grant proposals
- Build industry partnerships
- Prepare for a changing employment landscape

http://acsoncampus.acs.org

#HeroesofChemistry
ACS Heroes of Chemistry Award

The ACS Heroes of Chemistry Award is the Annual award sponsored by the American Chemical Society that recognizes talented industrial chemical scientists whose work has led to the development of successful commercialized products ingrained with chemistry for the benefit of humankind.

2018 Winners:

www.acs.org/heroes
An individual development planning tool for you!

https://chemidp.acs.org

Next Week’s ACS Webinar!

www.acs.org/acswebinars

Experts

Michael Tunick
Drexel University

Brian Guthrie
Cargill

Co-produced with the ACS Division of Agricultural & Food Chemistry
THIS ACS WEBINAR WILL BEGIN SHORTLY...

Startups 101: From Lab Scientist to Entrepreneur

Corrie Kuniyoshi
Senior Program Manager, Graduate & Postdoctoral Scholars Office, ACS

Nareesh Sunkara
CEO, Nosocom Solutions Inc. and Special Advisor to the Vice Chancellor, Research for Postdoc Affairs, University of California, Berkeley

Slides available now! Recordings are an exclusive ACS member benefit.
www.acs.org/acswebinars

This ACS Webinar is co-produced with the ACS Graduate & Postdoctoral Scholars Office
Overview

- What happens to your research after you leave the lab?
- Why startups? Technology translation
- When to start?
- Market evaluation
- Funding - SBIR/STTR, angel investors
- Incubators
- Crucial Conversations
- Questions

Audience Survey Question

ANSWER THE QUESTION ON BLUE SCREEN IN ONE MOMENT

What stage are you currently in concerning your start-up idea?

- I am interested but have no ideas or plans yet
- I have an idea for a product or service for my start-up
- I have done market research on my product or service for my start-up
- I am looking for funding for my product or service for my start-up
- Other

* If your answer is “Other” tell us more in the chat!
What happens to your research after you leave the lab?

University & Federal labs

- Good scientific Ideas
- Knowledge creation
- Proof of concept

Technology Translation at Universities

Startup as a Career Option

What is a “start-up”?

“A startup is a temporary organization used to search for a repeatable and scalable business model.” Steve Blank  [https://steveblank.com](https://steveblank.com)

- Problem ➔ Idea ➔ Startup
- You are already solving a problem!
- Is there a way you can build a product someone needs?
Why Scientists Make GREAT Entrepreneurs?

- Accustomed to resolving uncertainty
- Familiar with building and testing hypotheses
- Versatile, multi-talented
- Resourceful, efficient, penny-wise
- Comfortable with temporary gigs
- Able to live on meager pay and long hours

But….They don’t like to sell!

Intellectual Property
Who do you think should do the customer discovery research?

- A marketing or sales head should be hired
- A technologist or scientist
- This step is not necessary
- Other

* If your answer is “Other” tell us more in the chat!

Idea Evaluation - Market Opportunity

- Articulate and test your hypotheses
- Design experiments, start listening
- Done by founders

Who is going to pay $$$?

Customer Discovery -> Customer Validation -> Startup Building

NSF Innovation Corps (I-Corps™)
Where do you find the $$\$$$?  

**SBIR/STTR: 3-Phase Program**  
[https://sbir.nih.gov/about/three-phase-program](https://sbir.nih.gov/about/three-phase-program)

- **Phase I**  
  - Feasibility Study  
  - $80-225K and 6-month (SBIR)/12-month (STTR) Award

- **Phase II**  
  - Expand on Phase I R&D  
  - $750k - $1.5M and 2-year Award

- **Phase III**  
  - Commercialization Stage  
  - Use of non-SBIR/STTR Funds

“People forget this…”

“… Silicon Valley was actually built on federal funding. People have this notion that SV was built in garages. And it’s true, we have some high-profile cases, Jobs – basement, Google in dorm, these things are true – the real fact is that Silicon Valley is the story of federal funding.

Sherman Fairchild…. People forget that Lockheed was our largest employer. It was these activities that led to the commercial spin-offs – We need to jump *back to the future.*”

**Russell Hancock, Chief Executive, Joint Venture:** Silicon Valley Network  
KQED Forum: State of the Silicon Valley Economy, 2/17/10
Startup Incubators and Accelerators

List of incubators and accelerators: [http://www.acceleratorinfo.com/see-all.html](http://www.acceleratorinfo.com/see-all.html)

Have you looked around your campus for information about startup incubators?

Crucial Conversations

- With your PI, if you plan to get them involved
- With the university intellectual property office
- With your spouse :)
- Friends and family
- Co-founders
- Don’t be afraid to discuss about your idea!
How comfortable do you feel speaking to your PI about launching a startup based on the research you are doing?

- Very comfortable
- Somewhat comfortable
- Neither comfortable nor uncomfortable
- Somewhat uncomfortable
- Very uncomfortable

* If your answer is “Other” tell us more in the chat!

### Business Model Canvas

Alexander Osterwalder: Business Model Generation

https://www.strategyzer.com/canvas/business-model-canvas
Top 50 Undergraduate Programs

<table>
<thead>
<tr>
<th>Rank</th>
<th>University</th>
<th>Entrepreneurs</th>
<th>Companies</th>
<th>Capital Raised (M$)</th>
<th>Yr. - 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Stanford University</td>
<td>1,778</td>
<td>1,095</td>
<td>$246.94</td>
<td>NC</td>
</tr>
<tr>
<td>2</td>
<td>UC Berkeley</td>
<td>1,057</td>
<td>1,032</td>
<td>$207.78</td>
<td>NC</td>
</tr>
<tr>
<td>3</td>
<td>MIT</td>
<td>946</td>
<td>839</td>
<td>$205.24</td>
<td>NC</td>
</tr>
<tr>
<td>4</td>
<td>Harvard</td>
<td>900</td>
<td>759</td>
<td>$203.55</td>
<td>NC</td>
</tr>
<tr>
<td>5</td>
<td>UPenn</td>
<td>838</td>
<td>717</td>
<td>$15.82</td>
<td>NC</td>
</tr>
<tr>
<td>6</td>
<td>Cornell</td>
<td>750</td>
<td>693</td>
<td>$200.01</td>
<td>NC</td>
</tr>
<tr>
<td>7</td>
<td>Michigan</td>
<td>772</td>
<td>638</td>
<td>$22.06</td>
<td>NC</td>
</tr>
<tr>
<td>8</td>
<td>Tel Aviv</td>
<td>640</td>
<td>531</td>
<td>$72.81</td>
<td>FL</td>
</tr>
<tr>
<td>9</td>
<td>UT Austin</td>
<td>626</td>
<td>562</td>
<td>$37.70</td>
<td>-1</td>
</tr>
<tr>
<td>10</td>
<td>University of Illinois</td>
<td>526</td>
<td>454</td>
<td>$89.94</td>
<td>NC</td>
</tr>
</tbody>
</table>

Resources

1. SBIR/STTR Funding: [https://www.sbir.gov/tutorials/program-basics/tutorial-1](https://www.sbir.gov/tutorials/program-basics/tutorial-1)
2. University Gap Funding: [https://www.universitygapfunding.com](https://www.universitygapfunding.com)
3. Berkeley Postdoc Entrepreneurship Program: [https://bpep.berkeley.edu](https://bpep.berkeley.edu)
4. Stanford e-corner: [https://www.youtube.com/channel/UCctkeBNTfIOOn7yj_9TTj_4w](https://www.youtube.com/channel/UCctkeBNTfIOOn7yj_9TTj_4w)
5. Accelerators & Incubators: [http://www.acceleratorinfo.com/see-all.html](http://www.acceleratorinfo.com/see-all.html)
7. Angel Capital Groups: [https://www.angelcapitalassociation.org/directory/](https://www.angelcapitalassociation.org/directory/)
Acknowledgements

This ACS Webinar is co-produced with the ACS Graduate & Postdoctoral Scholars Office. Slides available now! Recordings are an exclusive ACS member benefit. 

www.acs.org/acswebinars

This ACS Webinar is co-produced with the ACS Graduate & Postdoctoral Scholars Office.
Next Week’s ACS Webinar!
www.acs.org/acswebinars

FREE  | Thursday, February 14 at 2pm ET

Experts
Michael Tunick
Drexel University
Brian Guthrie
Cargill

Co-produced with the ACS Division of Agricultural & Food Chemistry

An individual development planning tool for you!

https://chemidp.acs.org
Startups 101: From Lab Scientist to Entrepreneur

Slides available now! Recordings are an exclusive ACS member benefit.
www.acs.org/acswebinars

This ACS Webinar is co-produced with the ACS Graduate & Postdoctoral Scholars Office

How has ACS Webinars benefited you?

“It was a great session about grant proposal writing tips. I have benefited by knowing more about what proposal reviewers require and by making me more aware of not making noticeable mistakes during the proposal submission.”

Fan of the Week
Lee Soon Poh
Master of Science Student

Be a featured fan on an upcoming webinar! Write to us @ acswebinars@acs.org
Contact ACS Webinars ® at acswebinars@acs.org

Benefits of ACS Membership

Chemical & Engineering News (C&EN)
The preeminent weekly digital and print news source.

NEW! ACS SciFinder
ACS Members receive 25 complimentary SciFinder® research activities per year.

NEW! ACS Career Navigator
Your source for leadership development, professional education, career services, and much more.

ACS Webinars® does not endorse any products or services. The views expressed in this presentation are those of the presenter and do not necessarily reflect the views or policies of the American Chemical Society.

Contact ACS Webinars® at acswwebinars@acs.org

Next Week’s ACS Webinar!
www.acs.org/acswwebinars

The Chemistry of Chocolate + Desire

FREE | Thursday, February 14 at 2pm ET

Experts

Michael Tunick, Drexel University
Brian Guthrie, Cargill

Co-produced with the ACS Division of Agricultural & Food Chemistry