

Research to Innovation to Venture: An Education and Venture Development Process..

GOAL: Sustainable Materials Commercialization and Innovator Preparation

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High Performance Green Nanomaterials for Electronics & Industrial Applications

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VALLEY OF DEATH:

University science and engineering innovators are challenged in converting research into commercial innovations, the so-called “Valley of Death”



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TIME OF BRILLIANCE

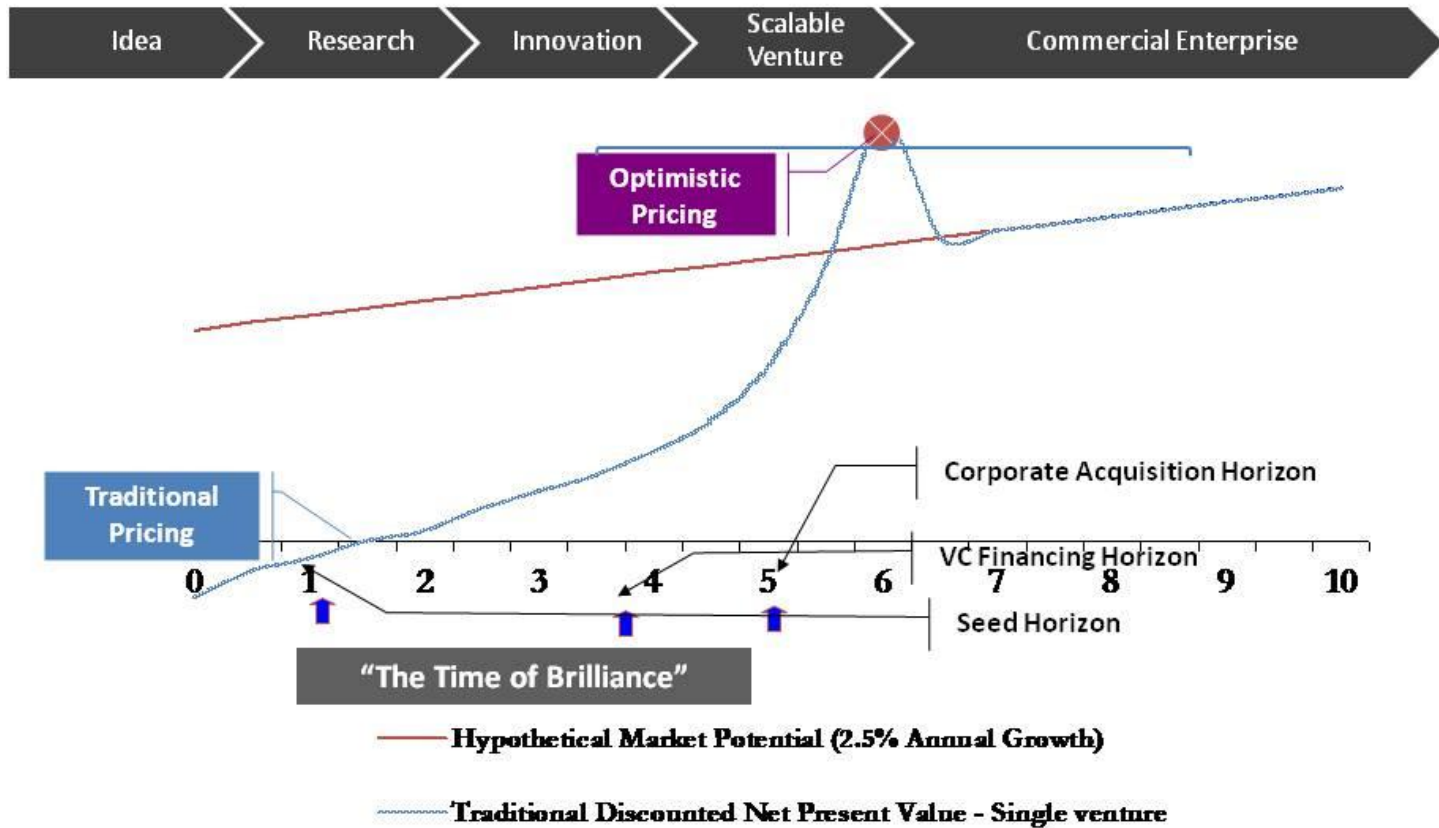


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TIME OF BRILLIANCE

Figure 2:

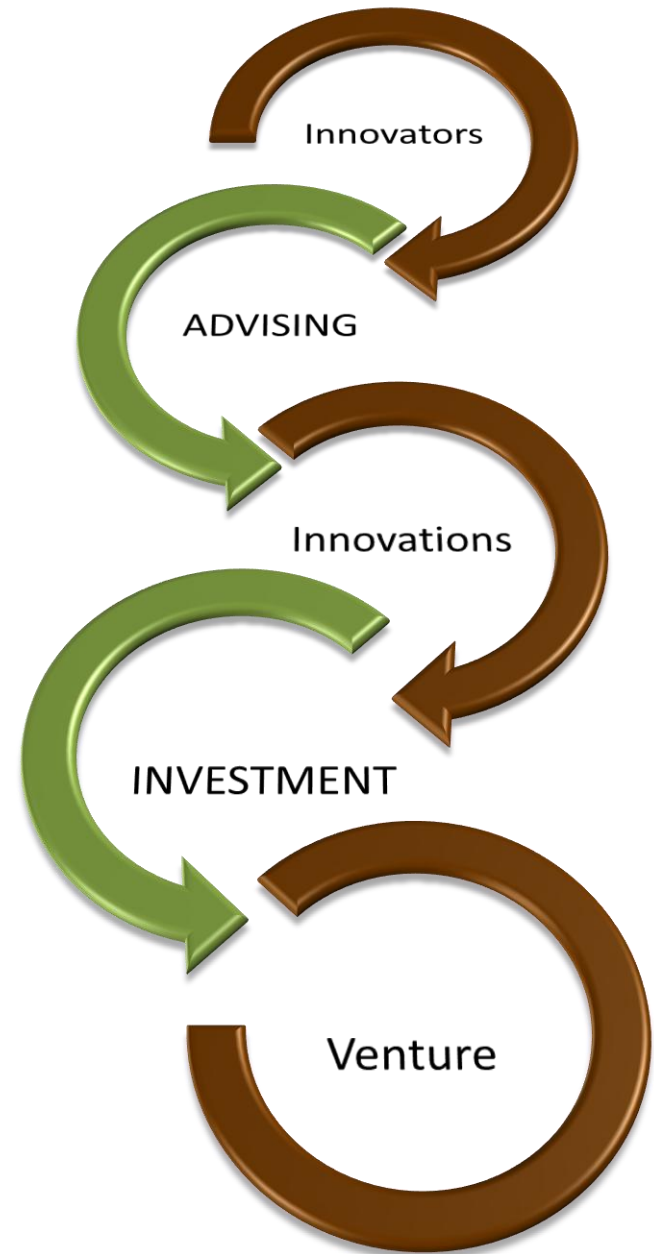
Stage Dependent Value of Research to Commercial Enterprise – years versus arbitrary \$



Nir Kossovsky
Steel City re

Transforming the Valley of Death to a Time of Brilliance and REAP the benefits!

- **Respect** the *innovator* at least as much as the *innovation*
- **Educate** for research *and fast* innovation and iteration. R2I2V is an interdisciplinary process – which can be taught and learned.
- **Address** the challenges in venture formation head-on
- **Provide** rewards and recognition for innovation in an expanded view of the academic role



PUBLICATION...PREPRINT

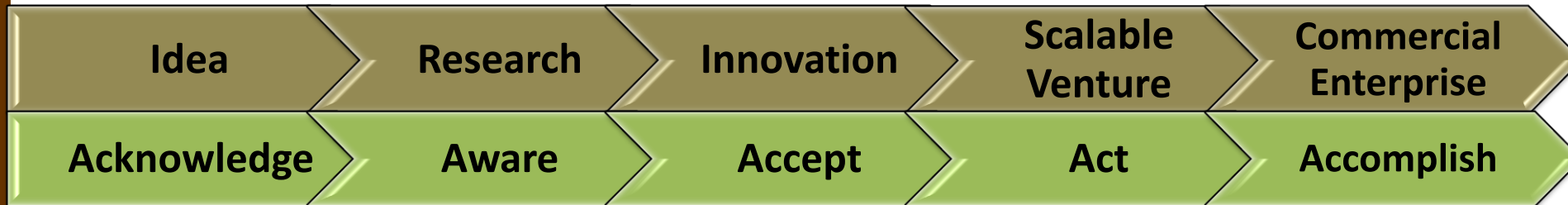
- ASEE
- Defines pedagogic background
- Discusses original research and lit references



RESPECTing innovator and innovation

- Providing a systematic, focused, cost-effective, scalable approach to venture development and innovator support.
- BOTH build value!

Innovation



Innovators



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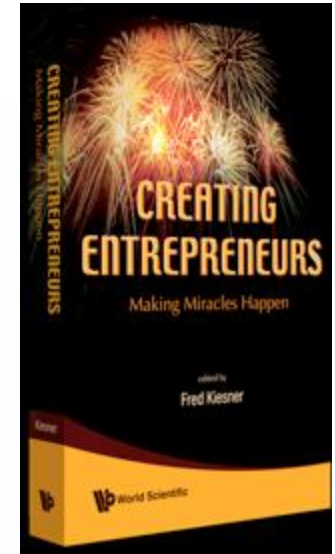
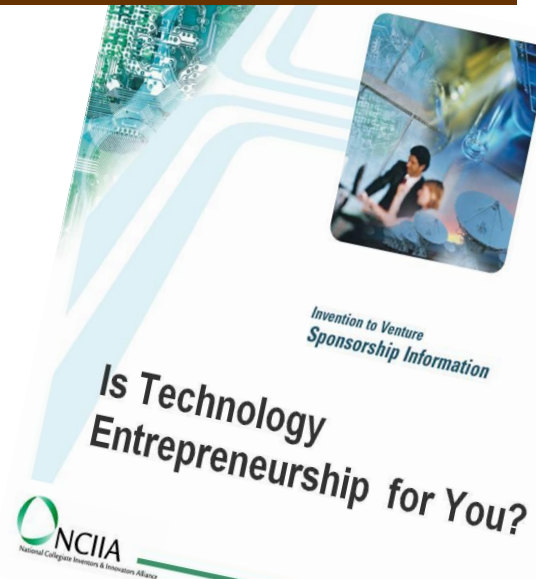
EDUCATE... TO INNOVATE

Only 1 percent of more than 200 [U.S.](#) entrepreneurs surveyed cited higher education as a significant motivator toward starting their own venture, while 61 percent cited their "innate drive." Northeastern University Survey

Entrepreneurs are born, but can they be taught? By Jim Hopkins, USA TODAY



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Are Entrepreneurs Born or Made?
Two-thirds of entrepreneurs claim they were inspired by innate desire, not education or training, according to a new survey.
By Leslie Taylor | Inc. | Oct 24, 2006

Southern Miss
Ole Miss

ADDRESS - CHALLENGE #1: dealflow

Innumerable undifferentiated “top of funnel” opportunities

INVITURE
**BUSINESS
PLAN
COMPETITION**



\$100K
MIT ENTREPRENEURSHIP COMPETITION

accelerate>>MICHIGAN™
INNOVATION COMPETITION

USF
UNIVERSITY of
SAN FRANCISCO
International Business Plan Competition

mc mass
CHALLENGE

2011 RICE
UNIVERSITY
BUSINESS PLAN
COMPETITION
Sponsored by Administaff
World's Richest and Largest Business Plan Competition April 14-16, 2011



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CHALLENGE #2: PROCESS, ADVICE, SUPPORT and PRACTICE

An ecosystem that efficiently validates and structures seed stage deals exists only in Web 2.0, not for STEM ventures



Combinator



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CHALLENGE #3: Lost in translation

- Low success of STEM translation to commercialization
- Need to “fail fast and iterate” ..not easy in STEM



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PROVIDing reward and recognition

Academic Research Mission

- Gain knowledge and an understanding of the “world”
- Disseminate and share results
- Train future STEM practitioners

Lens of Research Impact



PROVIDING reward and recognition

Embracing and extended view

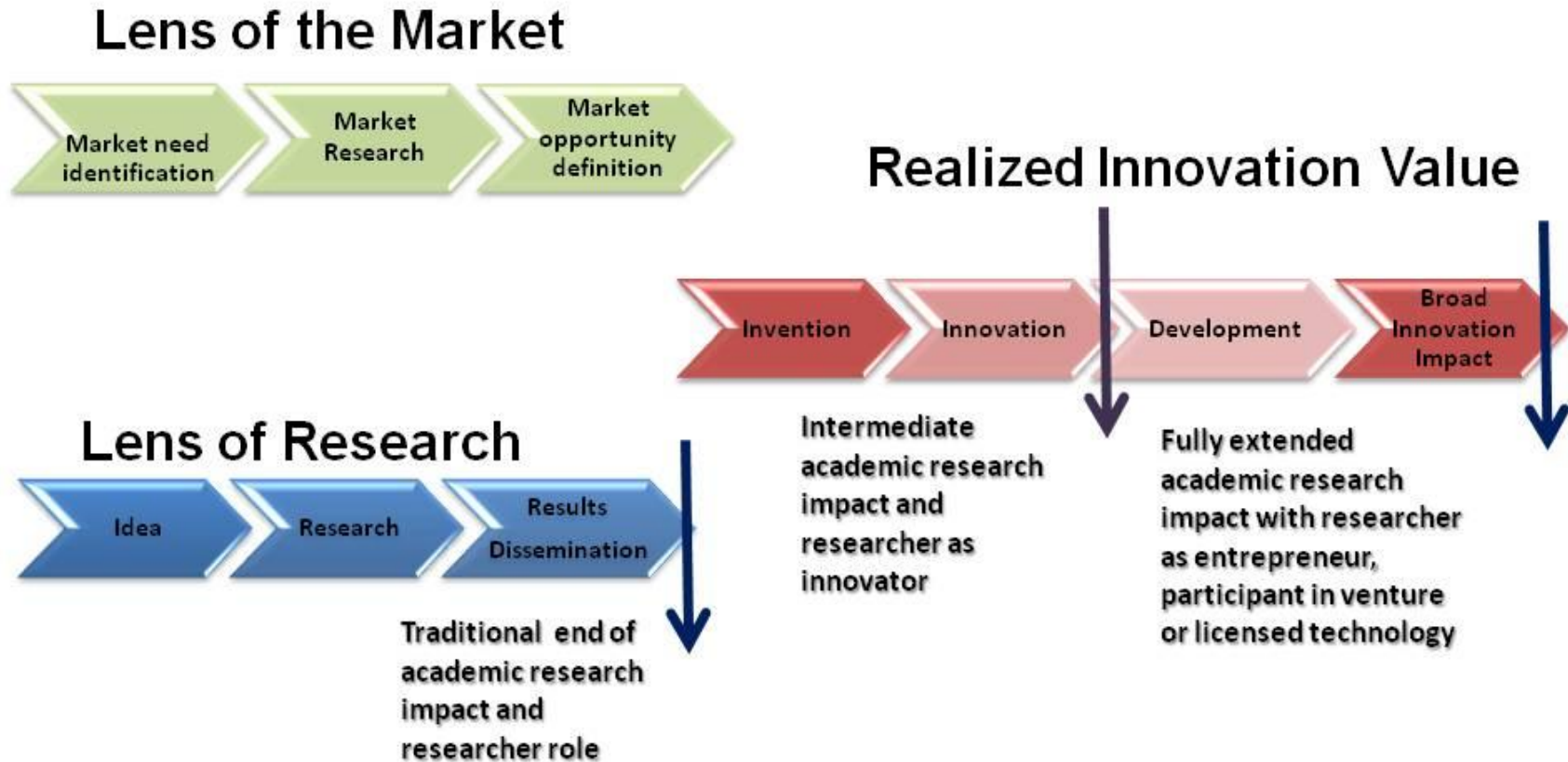


Figure 1: Fully Extended Academic Research to Broad Impact (Market) Value Chain

SOLUTIONS TO REAP REWARDS

- Respect the R2I2V PERSONAL CHANGE process
 - NO person builds a company alone
- Lens of the MARKET as important as Lens of RESEARCH
 - STEM ventures are not the same as Web 2.0 BUT build for “failing fast” based on business insights
- It is not a single event...NO one learned P Chem the first time round!

Idea

Research

Innovation

Scalable
Venture

Commercial
Enterprise

Ongoing Education and Training

Business Advising

Funding

Acknowledge

Aware

Accept

Act

Accomplish

Centers for Chemical Innovation

- The Centers for Chemical Innovation (CCI) Program supports research centers focused on major, **long-term fundamental chemical research challenges**. CCI that **address these challenges will produce transformative research, lead to innovation**, and attract broad scientific and public interest..... CCI **integrate research, innovation**, education, and public outreach and include a plan to broaden participation of underrepresented groups.

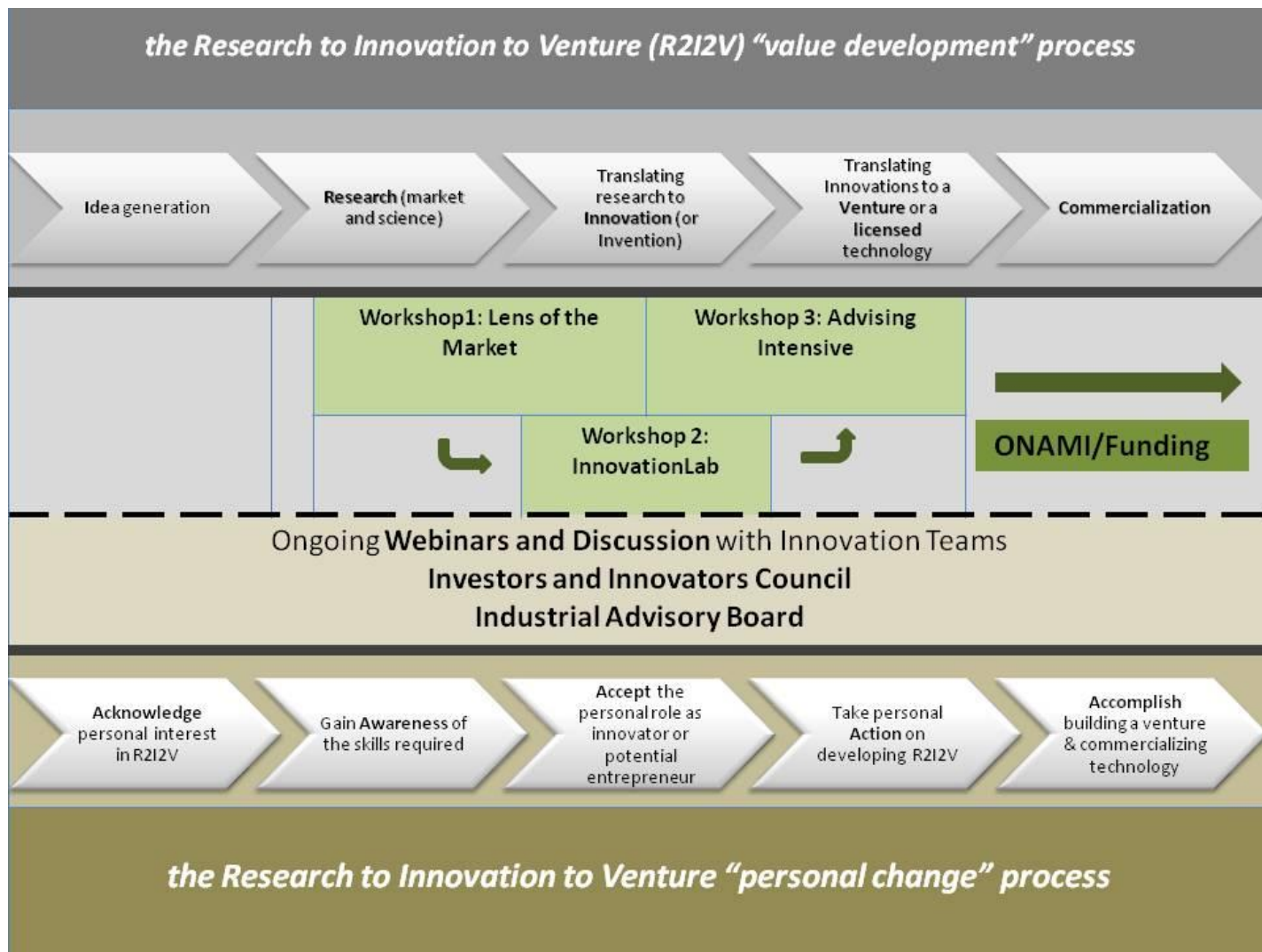


National Science Foundation

- The National Science Foundation (NSF) is an independent federal agency created by Congress in 1950 "to promote the progress of science; to **advance the national health, prosperity, and welfare**; to secure the national defense..."



Center for Sustainable Materials Chemistry



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Transforming the Valley of Death to a Time of Brilliance



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ecosVC Portfolio Examples

- Natural Composites Inc.: university spin-out using natural materials as a petroleum polymer filler and replacement
- Qteros: a university spin-out in cellulosic ethanol.
- Ecovative Design: university spin-out creating a biodegradable alternative to expanded polystyrene
- A privately held oil processing equipment company developing a process for algae oil extraction
- A privately held natural composites company creating structural materials in a wide range of sectors
- Numerous Fortune 500 companies expanding their portfolios through Open Innovation

