

Nanomanufacturing Summit 2013:

From Technology Push to Market Pull: The Role of Research Centers in the Nanotechnology Innovation Ecosystem

Utilizing the Oregon startup ecosystem

Dr. Sean Muir and Dr. Wei Wang

Amorphyx Inc.



The Amorphyx Opportunity

The flat panel display industry is struggling.



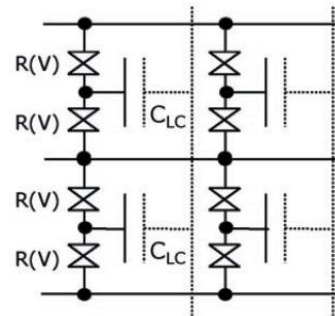
Flat panel display challenge

- features
- selling price
- manufacturing cost

> \$100B industry opportunity



Willem den Boer



Dual-select diode (DSD) circuit



Wintek

10.4" DSD prototype



What is Amorphyx?

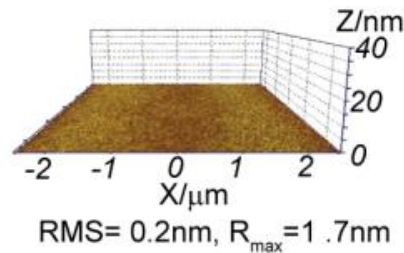


College of Engineering

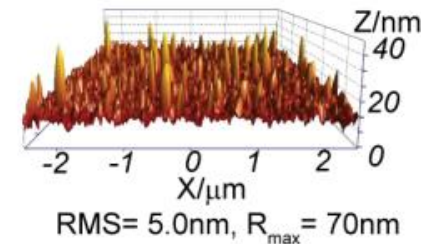


College of Science

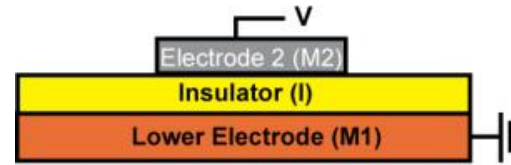
Advancing amorphous metal thin-film electronics



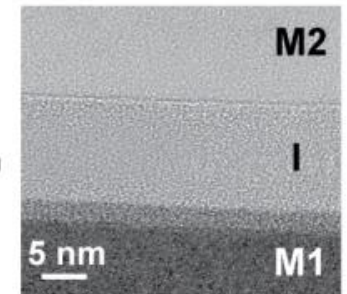
(a)



(b)



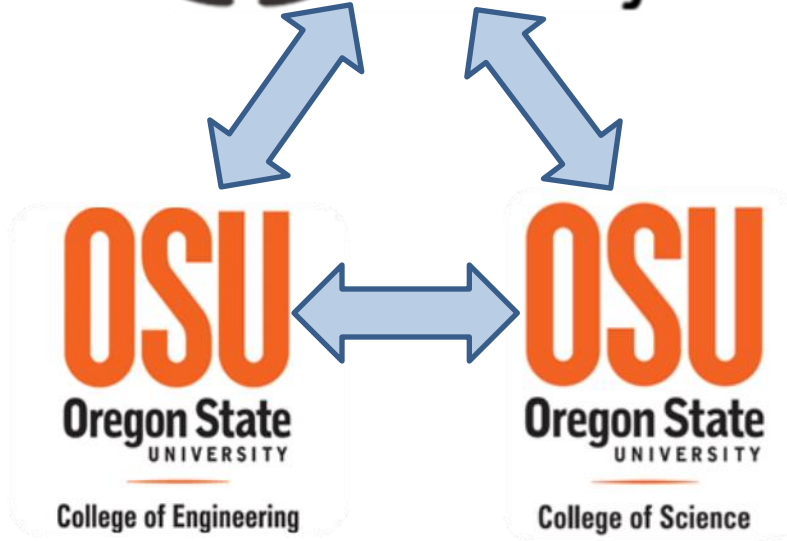
(c)



(d)

Amorphyx™ *Simple. For a change.*

What is Amorphyx?



Industry direction → **Complexity**

Amorphyx direction → **\$implicity**

Amorphyx  Simple. For a change.



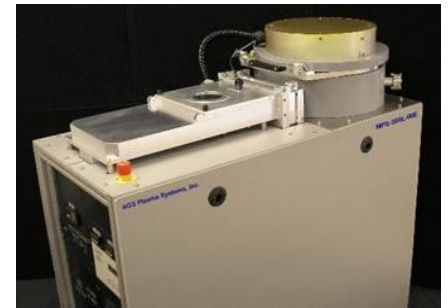
Our Needs



Applied Materials

Industry compatibility

- *Big players in the game already*



AGS Plasma

Dedicated tools

- *Reliability*
- *IP Protection*



AJA International

Amorphyx  Simple. For a change.



The Amorphyx Team



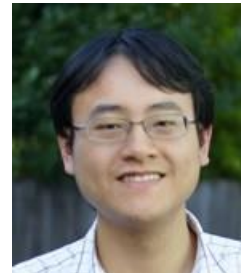
CEO & President
John Brewer
BS,EE



CTO
E. William (Bill) Cowell
PhD, EE



Senior Research Scientist
Sean Muir
PhD, Chem.



Research Scientist
Wei Wang
PhD, Chem.



The Amorphyx Team



Doug
Keszler

Board of Directors



Mike
Phillips



Rick
Warren



Technical Advisors



Allen
Guastavino



Willem den
Boer

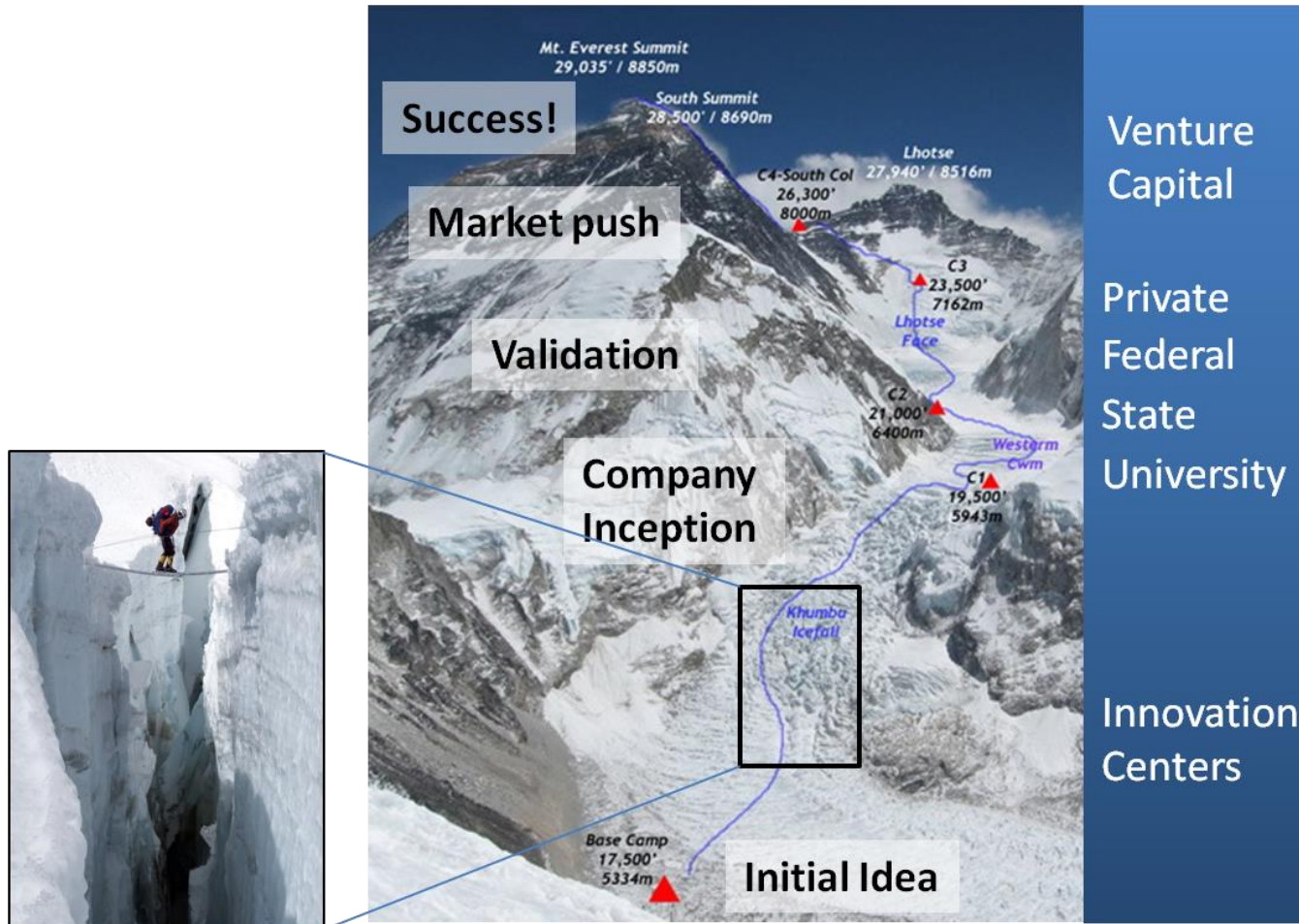


John
Wager

Ralph Leftwich
John Newton



Funding a technology start-up

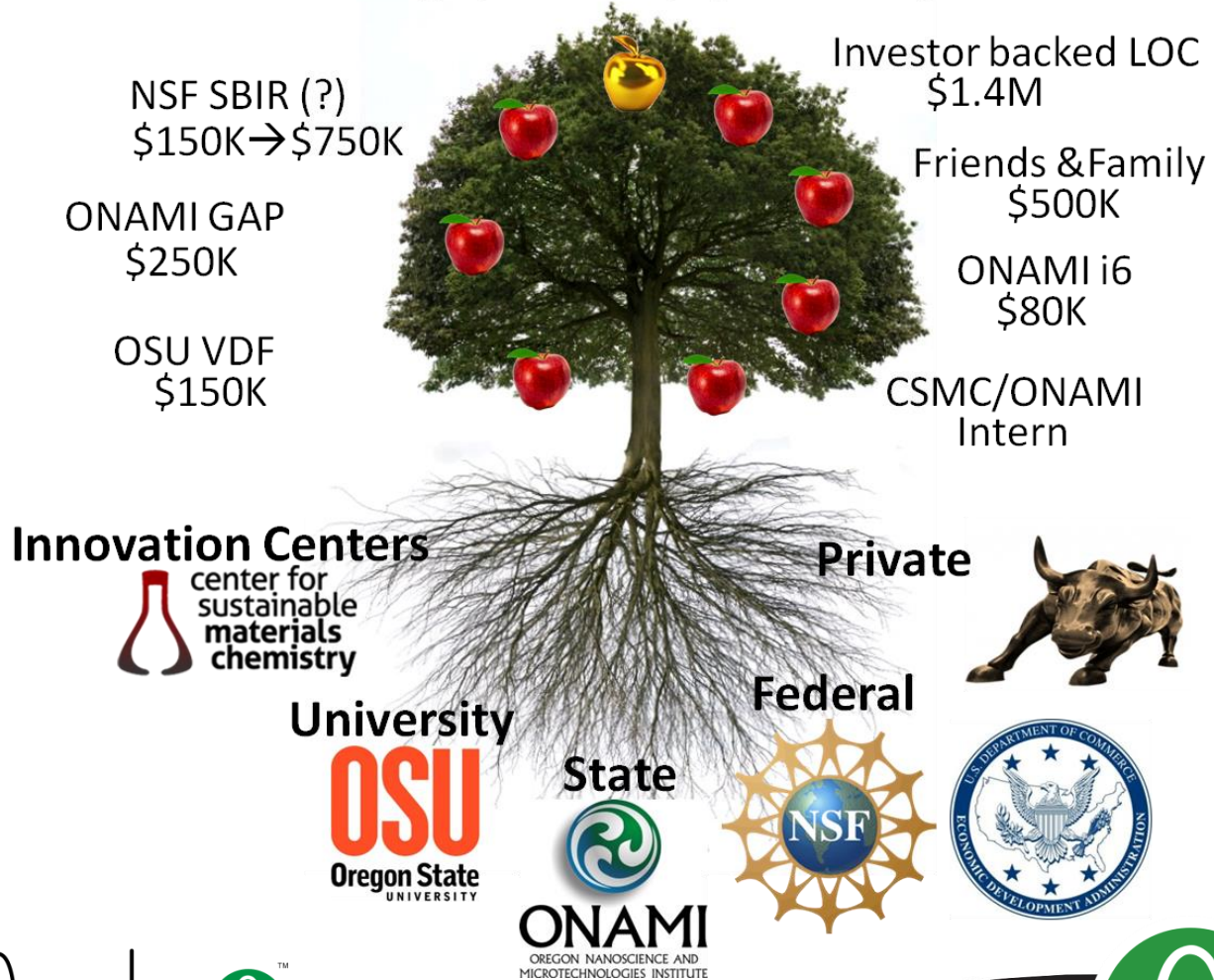


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Funding mechanisms

Strategic partnerships / VC funding



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Funding mechanisms

Strategic partnerships / VC funding



Innovation Centers



Private



University



Federal



State



ONAMI
OREGON NANOSCIENCE AND
MICROTECHNOLOGIES INSTITUTE



Simple. For a change.



It's also about people.....



CSMC, Oregon

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ONAMI

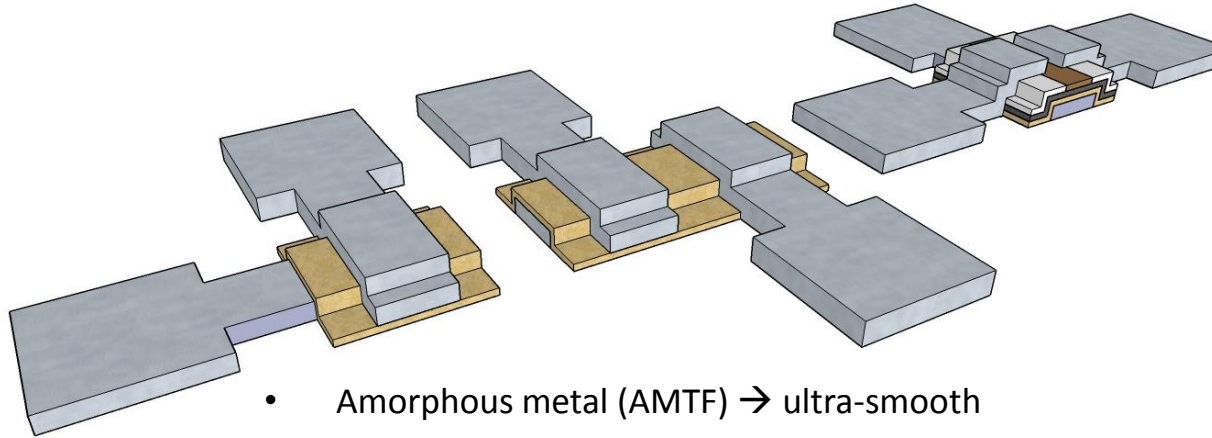
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MICROTECHNOLOGIES INSTITUTE

The Amorphyx Approach

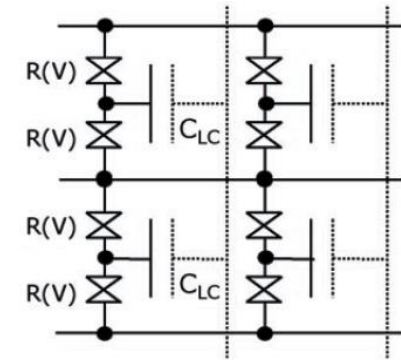
TFD

AMNR

TFT



- Amorphous metal (AMTF) → ultra-smooth
- Al_2O_3 → Tunneling → Speed
 - + Low light and temperature sensitivity
- Thin → < 50 nm of active layers
 - Flexible
 - Good transmission
- Simple → Forgiving Registration
 - Low capacitive variability
 - Roll to roll compatibility



Dual-select diode circuit



Wintek

10.4" DSD prototype

