



University of
Pittsburgh

CHIPS & Science & EDA: A New (and Amplified) Future?

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University of Pittsburgh



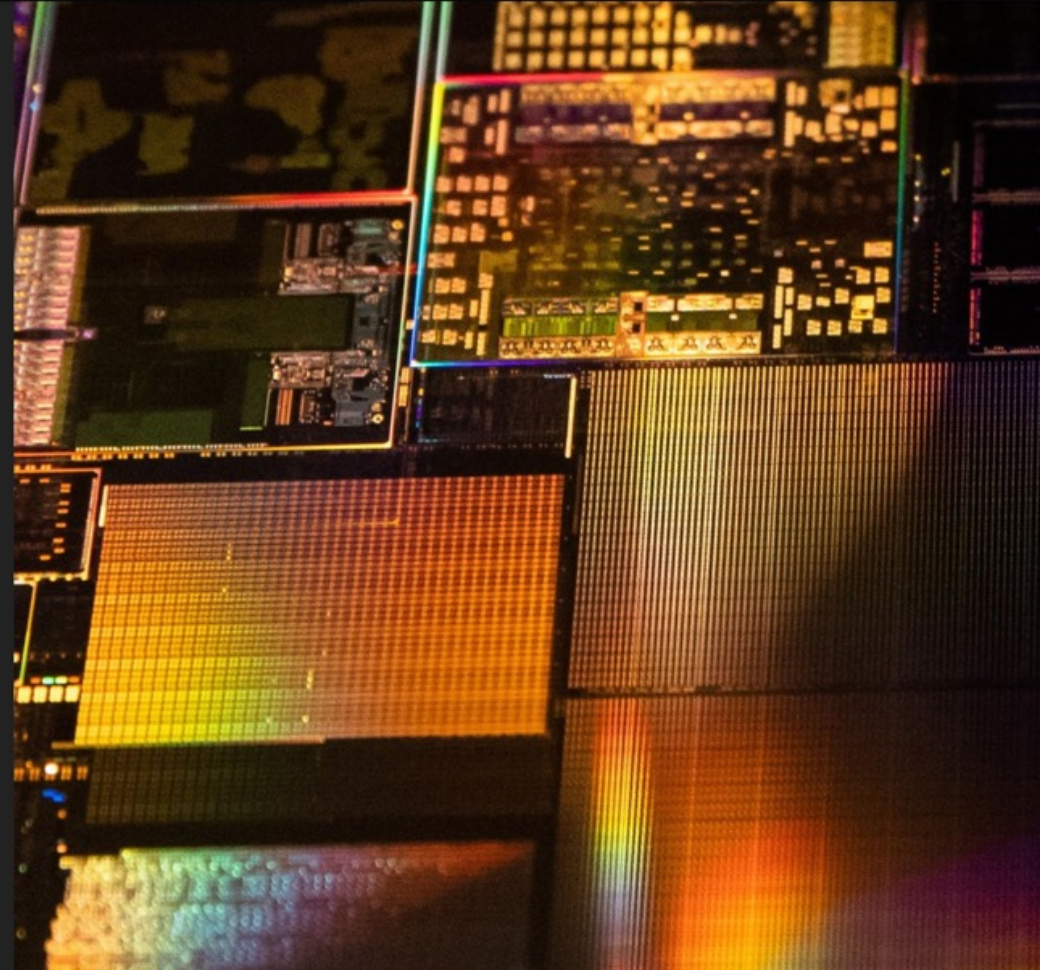


World Has Changed...

BUSINESS

Chips Are the New Oil and America Is Spending Billions to Safeguard Its Supply

(WSJ headline from January 2023)



<https://www.wsj.com/articles/chips-semiconductors-manufacturing-china-taiwan-11673650917>



“Semiconductors” Visibility (Courtesy Google)

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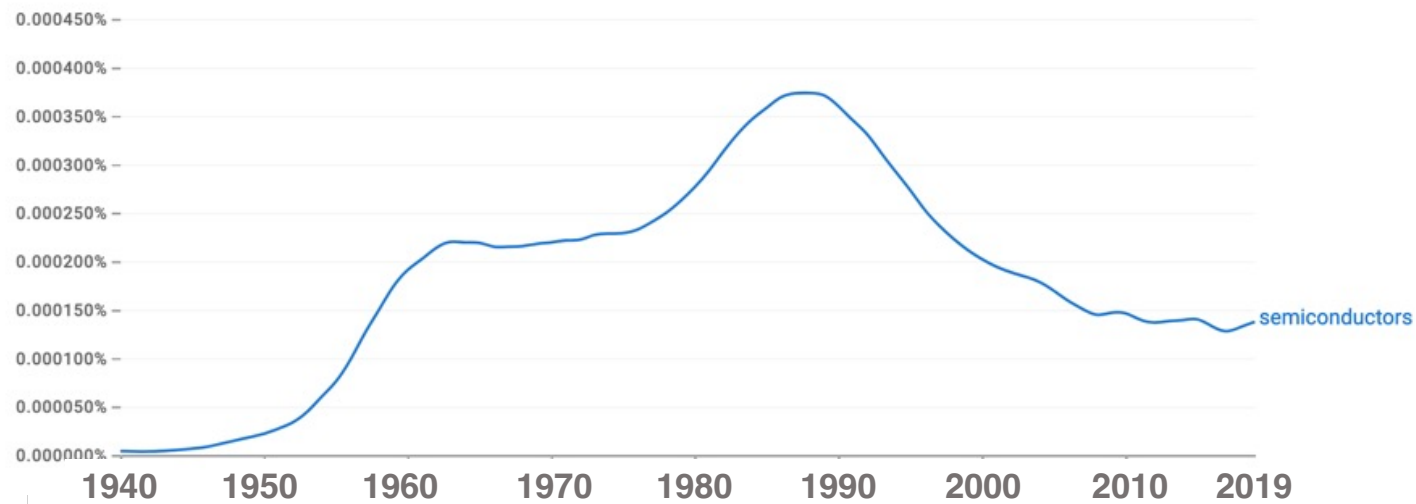
semiconductors

1940 - 2019

English (2019)

Case-Insensitive

Smoothing



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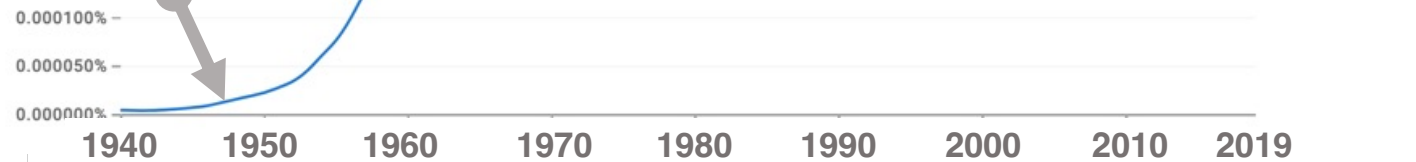
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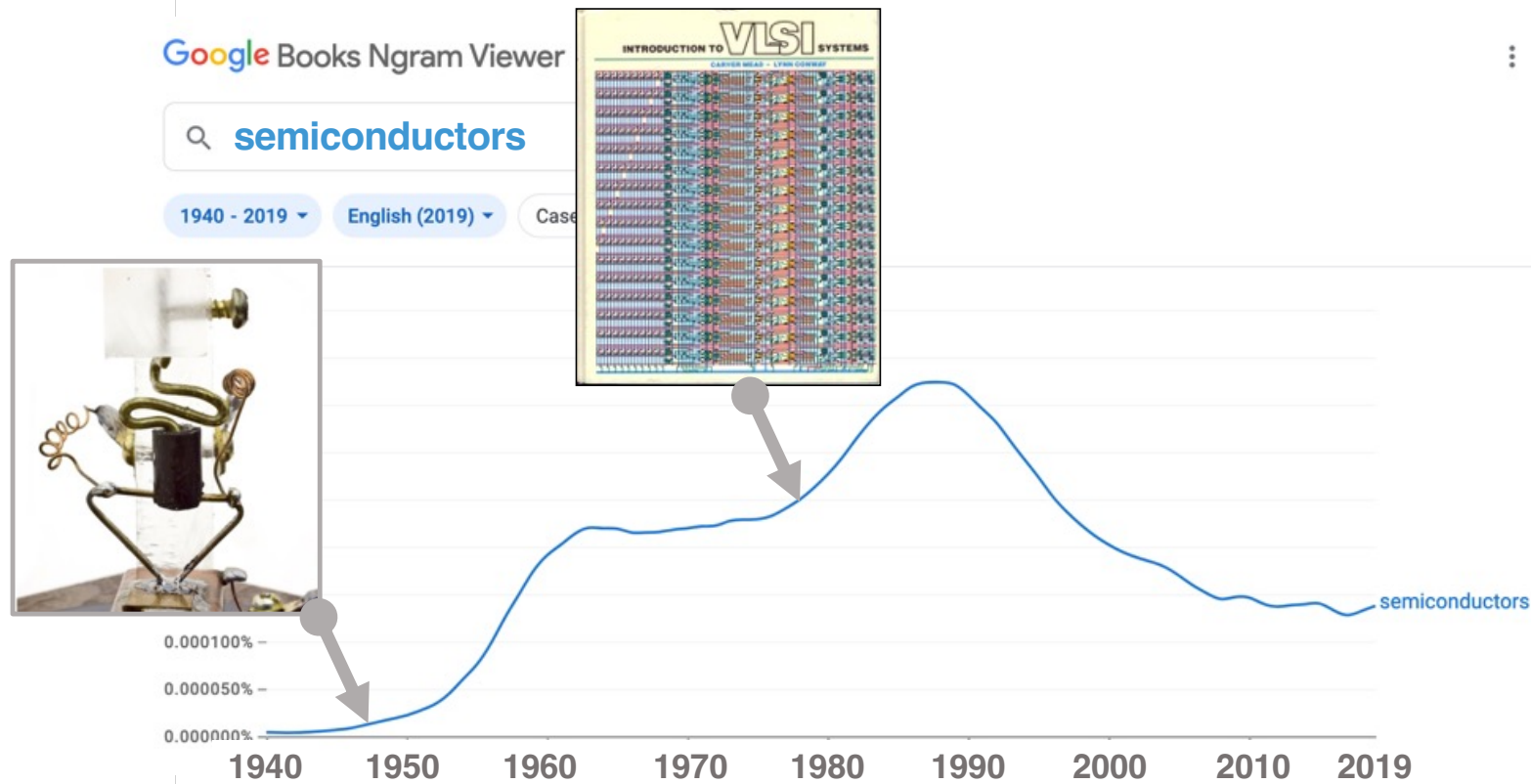
Smoothing



<https://www.computerhistory.org/revolution/digital-logic/12/273>



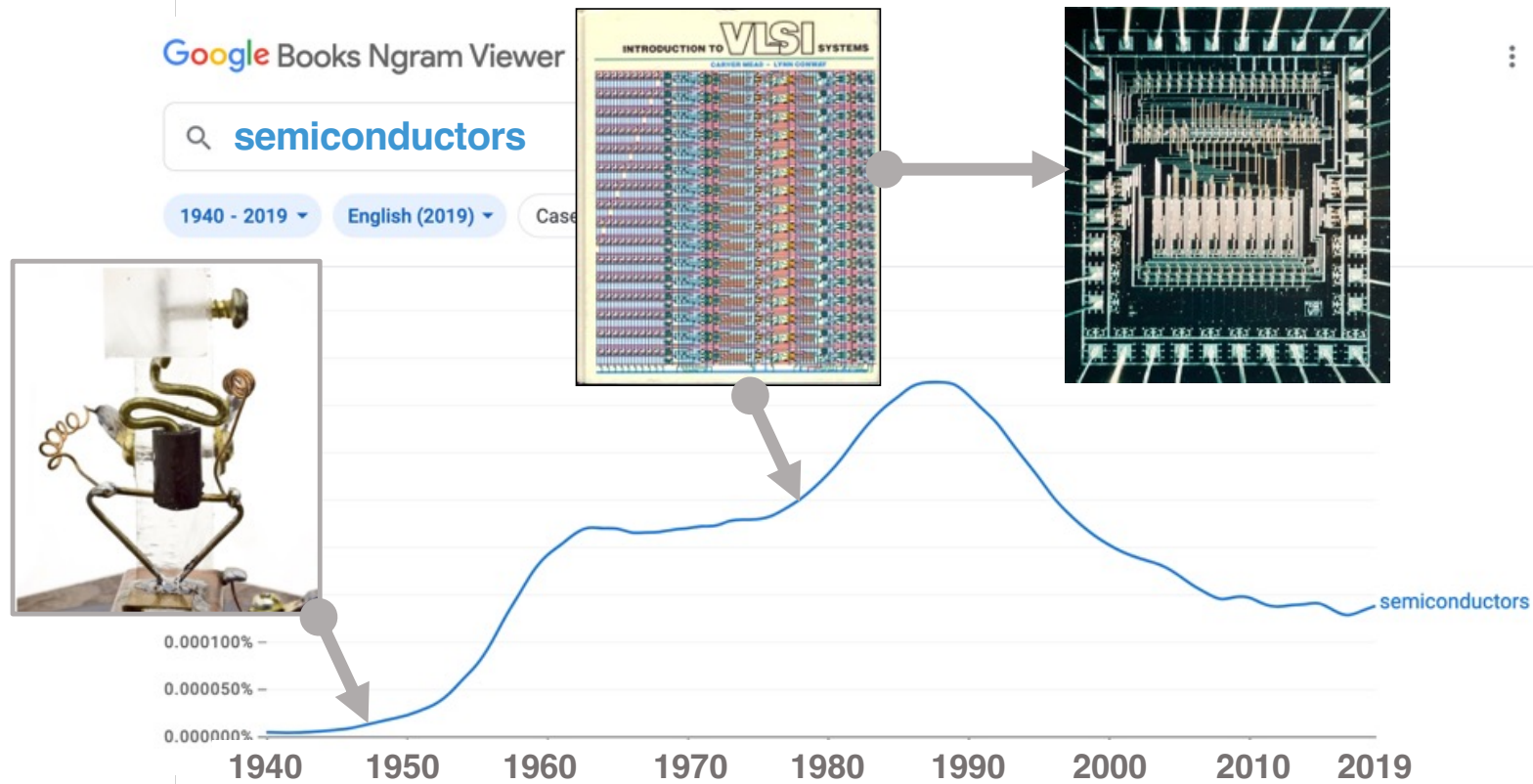
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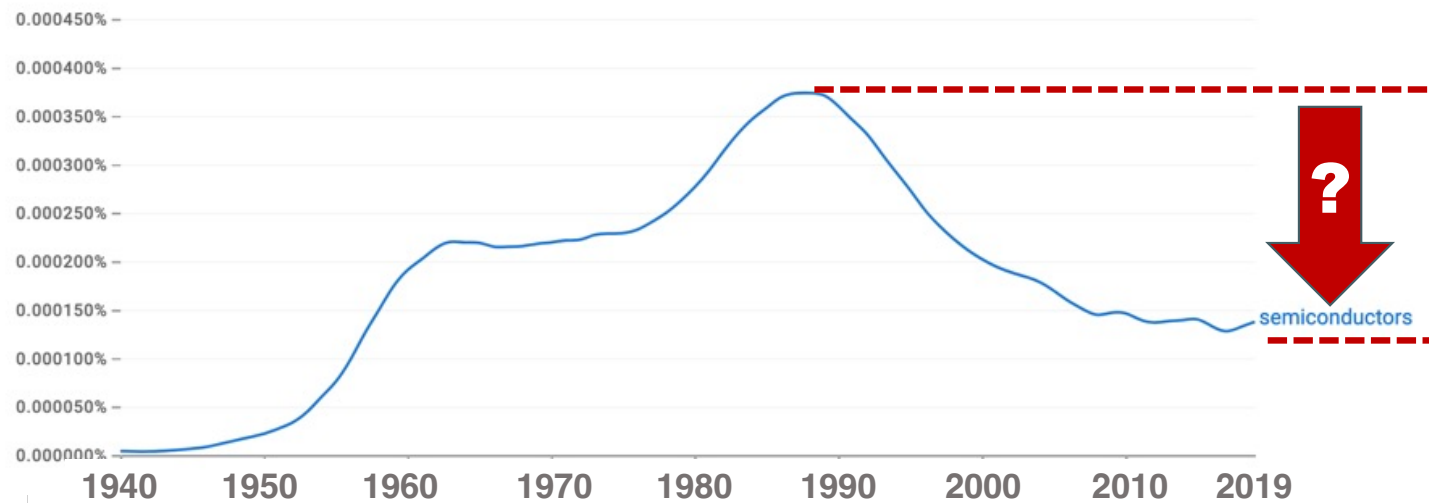
semiconductors

1940 - 2019

English (2019)

Case-Insensitive

Smoothing



A “Platforms” Plateau

THE WALL STREET JOURNAL.

○ **Hardware** is just an unfortunate necessity...

○ **...Software** is the thing



Why Software Is Eating The World

By Marc Andreessen

Updated August 20, 2011



 Gift unlocked article

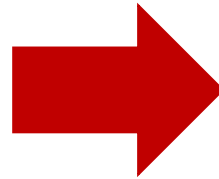
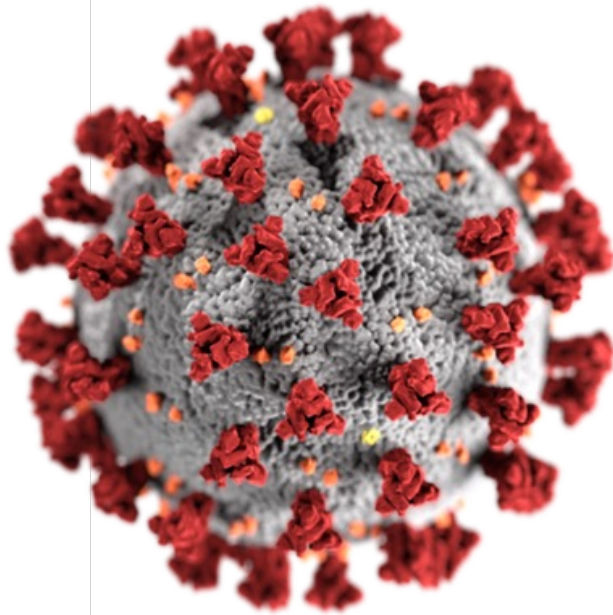
This week, Hewlett-Packard (where I am on the board) announced that it is exploring jettisoning its struggling PC business in favor of investing more heavily in software, where it sees better potential for growth. Meanwhile, Google plans to buy up the cellphone handset maker Motorola Mobility. Both moves surprised the tech world. But both moves are also in line with a trend I’ve observed, one that makes me optimistic about the future growth of the American and world economies, despite the recent turmoil in the stock market.



<https://www.wsj.com/articles/SB10001424053111903480904576512250915629460>



And Then, Some Stuff Happened...



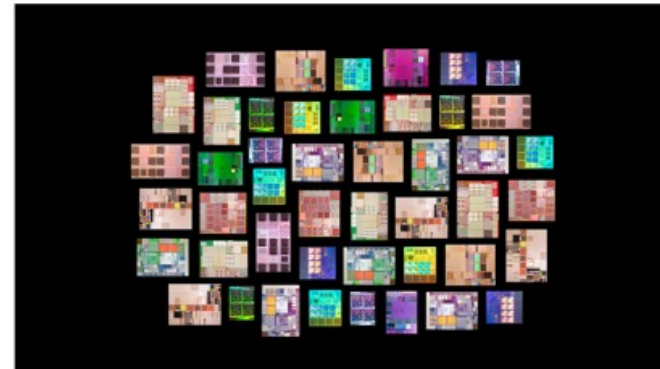
Operations And Supply Chain Management

**Harvard
Business
Review**

Fixing the U.S. Semiconductor Supply Chain

by David Simchi-Levi, Feng Zhu, and Matthew Loy

October 25, 2022



MirageC/Getty Images



<https://hbr.org/2022/10/fixing-the-u-s-semiconductor-supply-chain>



Then More Stuff..

THE WALL STREET JOURNAL.



The AI Boom Runs on Chips, but It Can't Get Enough

'It's like toilet paper during the pandemic.' Startups, investors scrounge for computational firepower.



<https://www.wsj.com/articles/the-ai-boom-runs-on-chips-but-it-cant-get-enough-9f76f554>



A Big US Response

Suddenly semiconductors are:

- Strategic national assets
- Shaping national industrial policy, via **CHIPS and Science Act, \$280B**
- Subject to complex geopolitics

THE WALL STREET JOURNAL.

POLITICS

House Passes Chips Act to Boost U.S. Semiconductor Production

Republican support had been thrown into doubt after surprise announcement of Democratic climate and tax plan

By [Natalie Andrews](#) [Follow](#)

Updated July 28, 2022 6:30 pm ET

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<https://www.wsj.com/articles/house-passes-chips-act-to-boost-u-s-semiconductor-production-11659035676>



And Globally

- EU CHIPS Act, from Feb 2022
- Public + private investment
- Approx €43B in total

The Economist

Menu

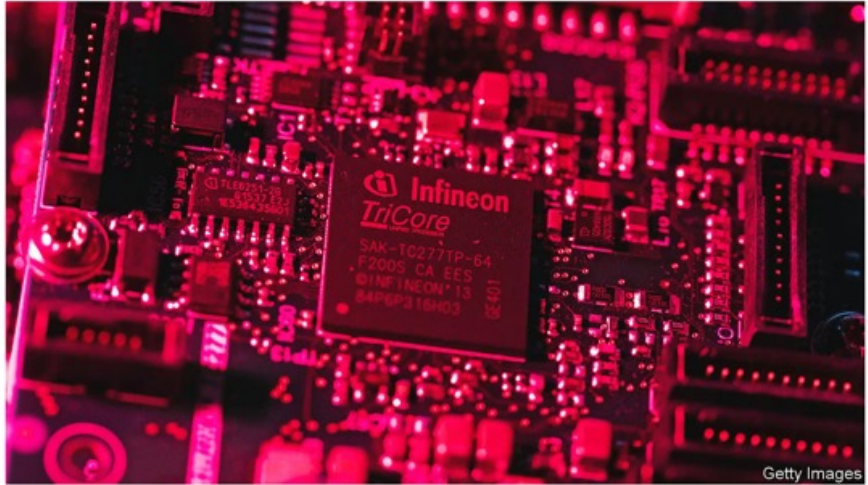
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Business | Fabs with benefits

In the global chips arms race, Europe makes its move

Will it work better than it did a decade ago?



Getty Images

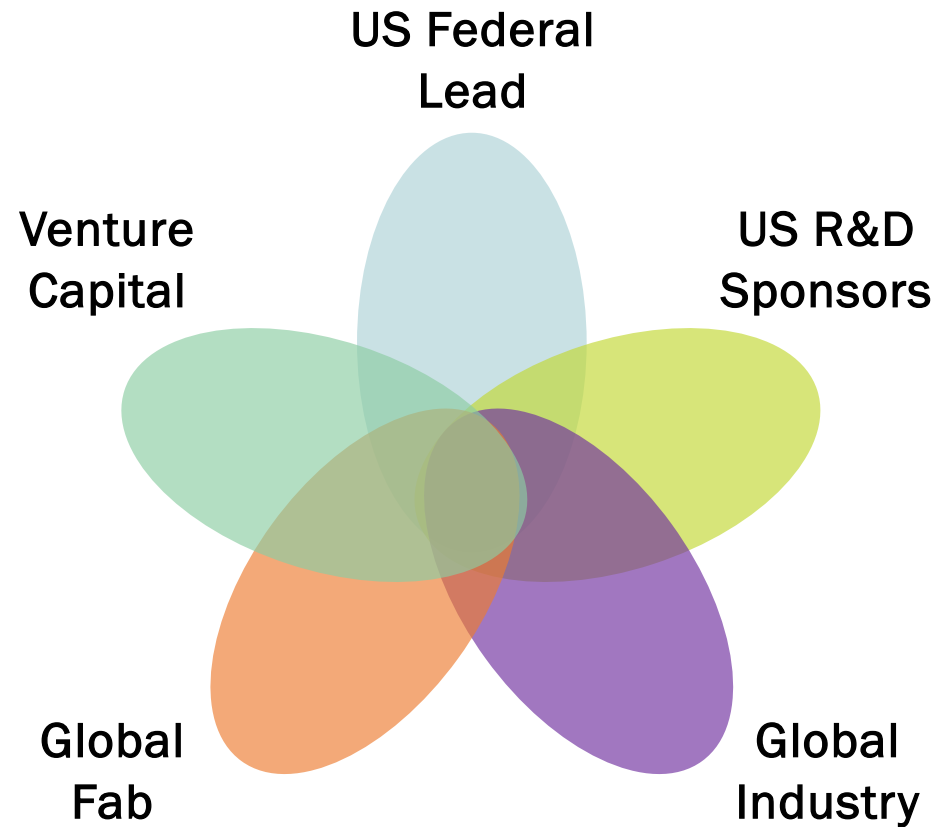
Feb 12th 2022 | BERLIN

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Our Panel

- Representatives from sectors touched by **US CHIPS & Sci**
- And similar efforts across **global** semi ecosystem



Our Panel

NIST
National Institute of
Standards and Technology



Pear

US Fed
Lead

Venture
Capital

US R&D
Sponsors



Global
Fab

Global
Industry



Semiconductor
Research
Corporation

imec



Our Panelists



Eric K. Lin



Margaret Martonosi



Carl McCants



Todd Younkin



Massoud (Max) Mirgoli



Nicholas Montella



Arash Afrakhteh



Our Topics

- What is CHIPS & Science, and what it is intended to support?
- How does this change the overall R&D support ecosystem?
- How does this affect your area/org? Sponsors, consortia, fabs, VC, etc.
- How does this impact landscape for international collaboration?
- Any insights for the broader **DAC community**?





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