



DEKA
Research & Development

evolved thinking.

www.dekaresearch.com

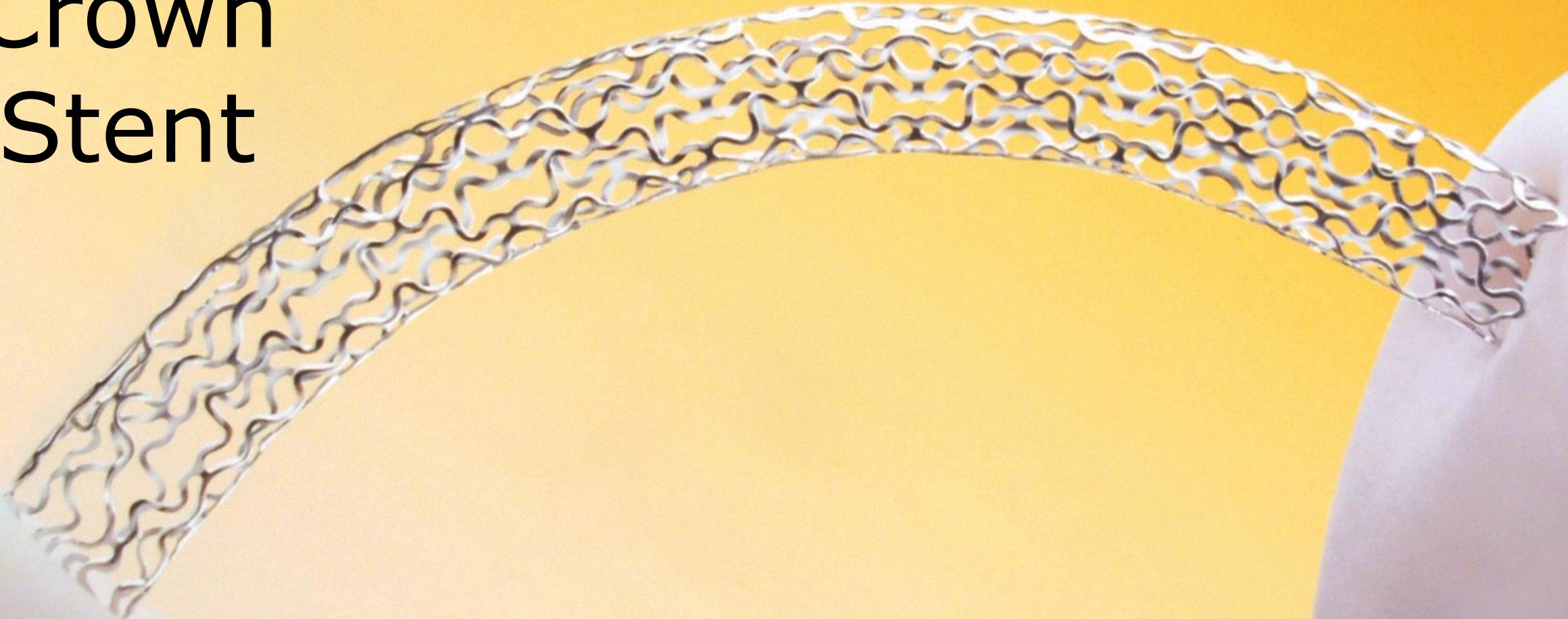
Insulin Delivery System



Baxter HomeChoice Automated PD System



The Crown Stent



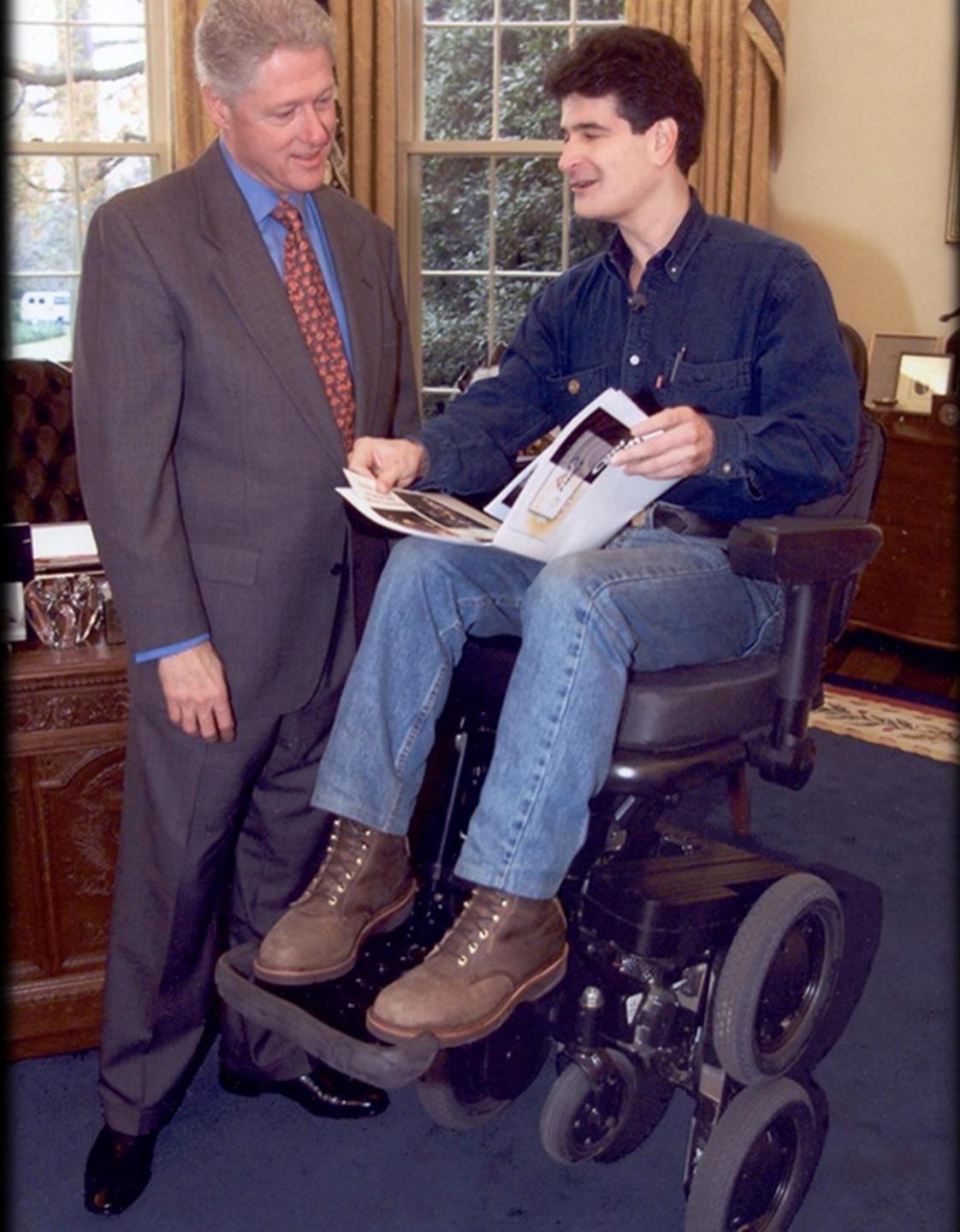
Improved design of Palmaz-Schatz Stent for Johnson & Johnson



ThinPrep Pap Test



iBot



The Segway® HT





100

Academy St

Salisbury St

Telegraph St



models and technology development that are sustainable and scalable.

Equipment

Sales equipment plays a significant role in connecting with and engaging our evolving consumers while still delivering a cold, quality moment of refreshment. Enabling ever-expanding variety, creating unique consumer experiences, and delivering it all with less energy will drive successful innovation for the future.

[Learn more](#)

[Innovate Center](#)

[Sales & Marketing Case Studies](#)



Coca-Cola Interactive Center

View

Print

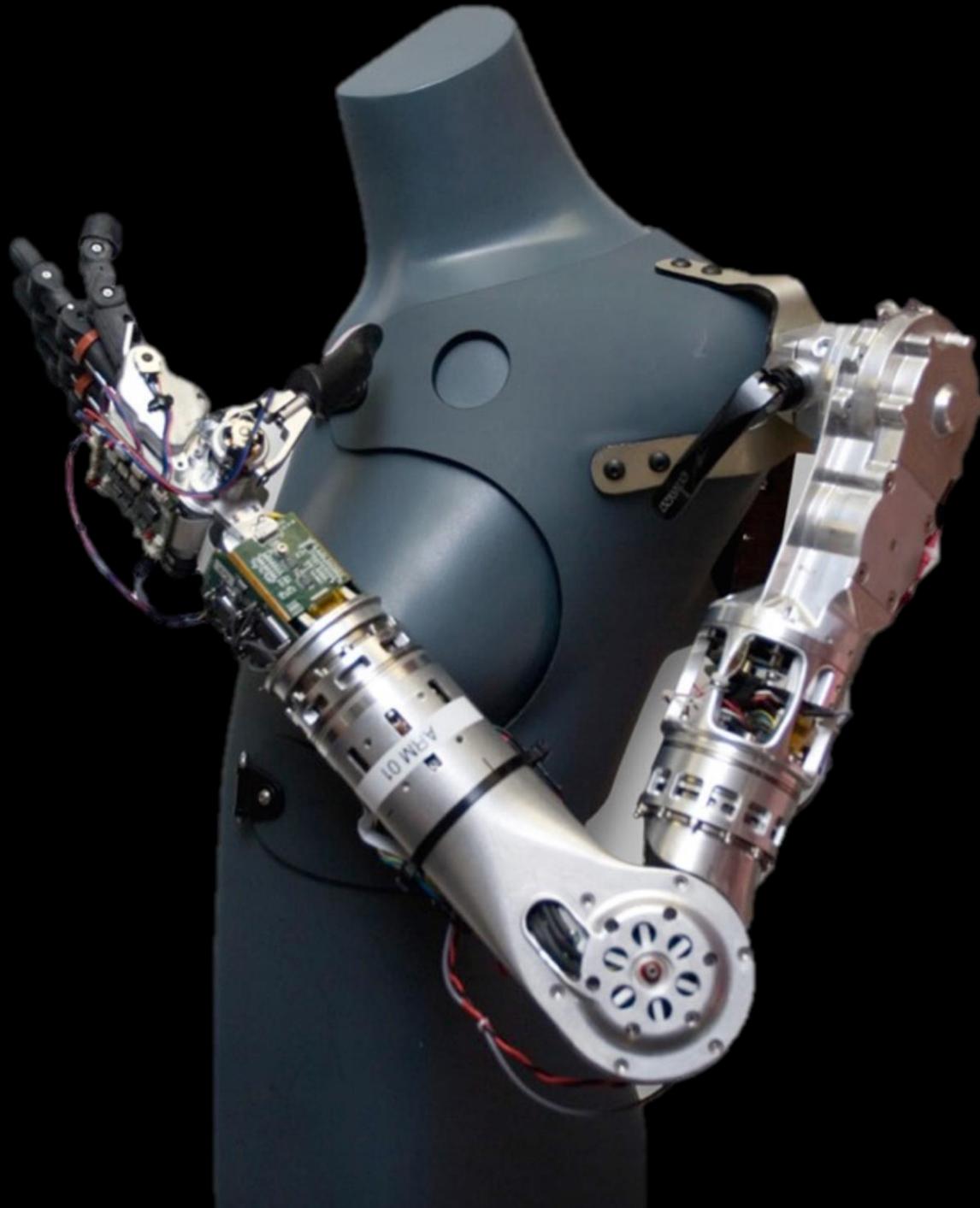
E-mail

Share

Print



The DARPA Prosthetic Arm



Luke Arm



Courtesy of DEKA Research & Development

FDA PMA
Cleared!



Peritoneal Dialysis FDA Cleared



Amia

FDA 510(k)
Cleared!













Advanced Regenerative
Manufacturing Institute



ARMI MISSION STATEMENT

*Make practical the large-scale manufacturing of
engineered tissues and organs –
and develop the trained and ready workforce
necessary for that manufacturing*

The Promise of TISSUE ENGINEERING

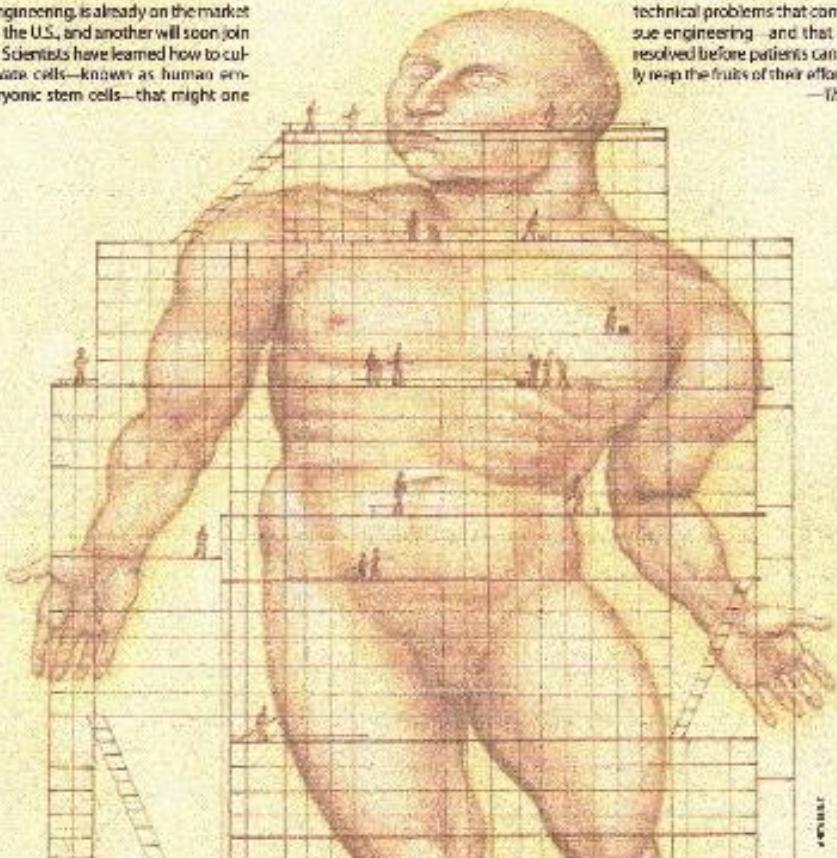
Imagine a day when people with liver failure can be cured with implanted "neo-organs" made of liver cells and plastic fibers; when insulin-dependent diabetics can forgo their frequent insulin injections because they have semsynthetic replacement pancreases; when kidney dialysis machines are obsolete because anyone with damaged kidneys can be outfitted with new ones grown from their very own cells. Sound like science fiction?

Not to scientists working in tissue engineering, a field of science that is barely a decade old. One form of man-made skin, the first commercial product of tissue engineering, is already on the market in the U.S., and another will soon join it. Scientists have learned how to cultivate cells—known as human embryonic stem cells—that might one

day allow researchers to build custom-made organs on demand. Tiny tubes containing cells that secrete painkilling substances have been implanted into the spinal columns of people with chronic pain. And tissue-engineered cartilage is in clinical tests and is expected to be commercially available within the next few years.

In the following special report, some of the leading scientists in tissue engineering outline the current successes of their young research field and sketch a "brave new world" in which people need not die for lack of spare parts. They also take a hard look at some of the ethical and technical problems that confront tissue engineering—and that must be resolved before patients can routinely reap the fruits of their efforts.

—The Editors



**The Vacanti
Mouse 1997**



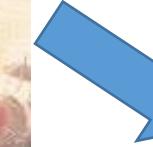
Step 1: Dermal Layer Formation –
Days 1 to 6



Step 2: Epidermal Layer Formation –
Days 6 to 10



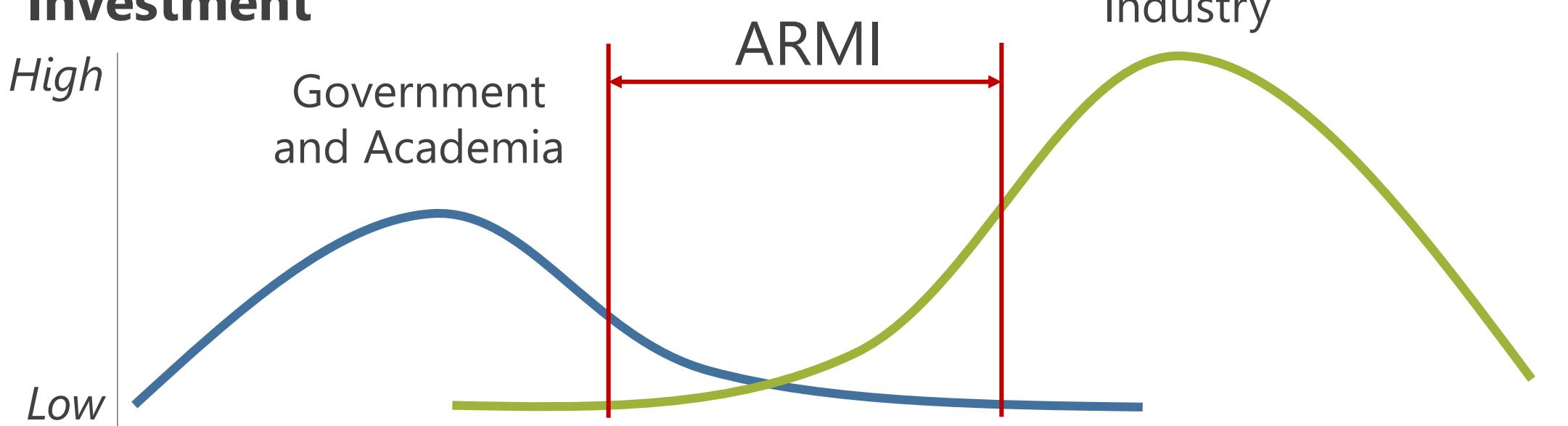
Step 4: Harvesting, Packaging –
Days 20 to 31



Step 3 Cornification –
Days 10 to 20

ARMI WILL ADDRESS THE SCALE-UP GAP

Funding/ Investment



Engineered Tissue Product Development

Basic
research

Proof of
concept

Production in
laboratory

Capacity to
produce
prototype

Capability in
production
environment

Demonstration
of production
scaling

ARMI HAS THE BACKING TO TURN A FRAGMENTED FIELD INTO A ROBUST INDUSTRY



STEL Technologies



REGENXBIO®



Abbott
Vascular



TWIN CITY BIO



DIMENSION
INX



LONZA



AUTODESK

Rockwell
Automation

DEKA

EPIBONE
grow your own bone



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surgical



stratasys



LatticeBiologics
Natural & Regenerative Tissue Solutions

KeraNetics®



Advanced Regenerative
Manufacturing Institute



GE Global Research



TRAILHEAD
BIOSYSTEMS INC



RoosterBio



WORRELL



NORTIS



MSP®
A TSI® COMPANY

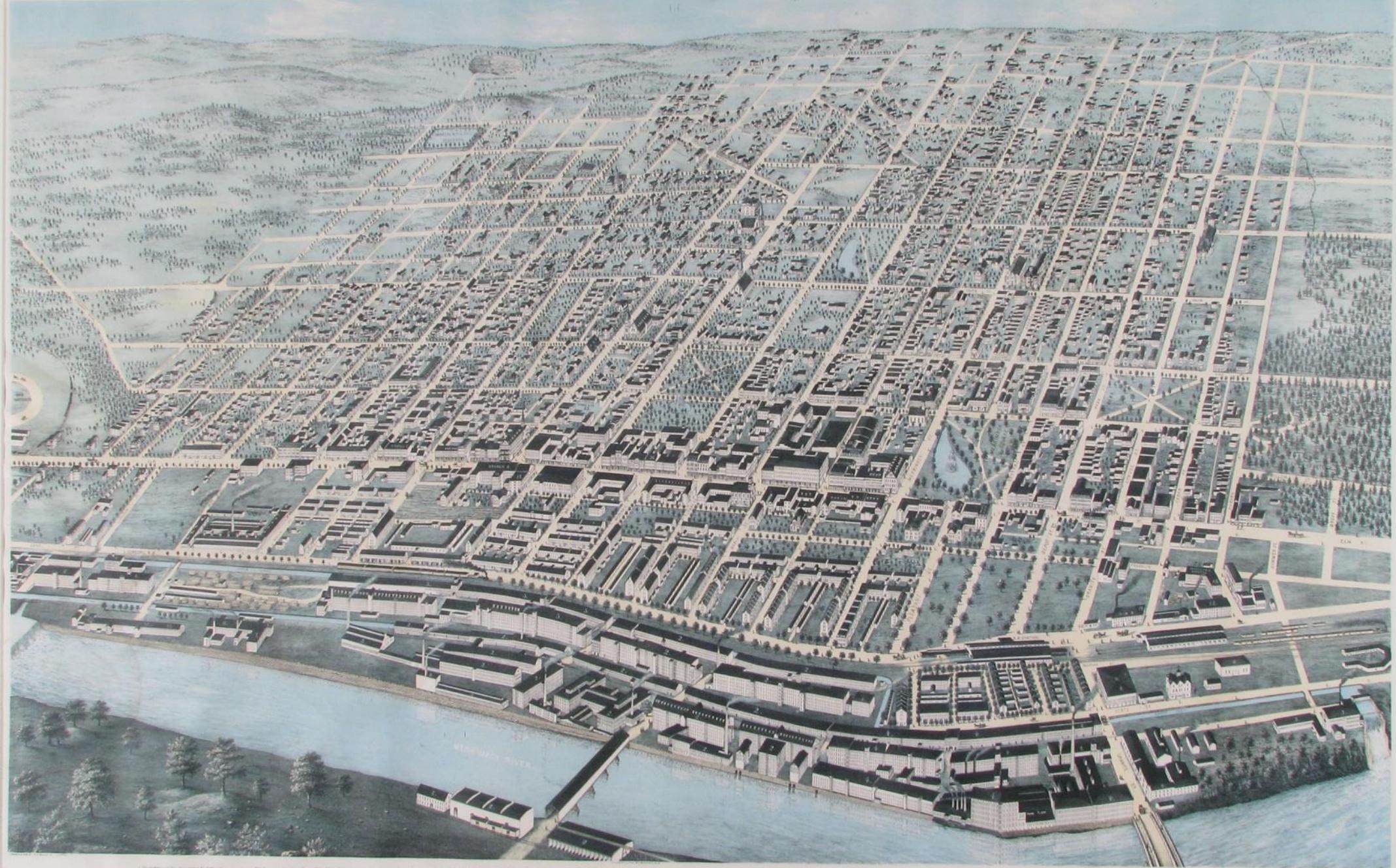
ARMI HAS THE BACKING TO TURN A FRAGMENTED FIELD INTO A ROBUST INDUSTRY



Manufacturing Extension Partnership

YOUR RESOURCE FOR
MANUFACTURING GREATNESS





MANCHESTER, N.H.

1870.

1. Granite & Iron Foundry of J. D. Moore.
2. Granite & Iron Foundry of Wm. C. Wood.
3. Boston & Maine RR. Building.
4. American Screw Co.
5. American Thread Co.
6. Boston & Maine RR. Freight House.
7. Boston & Maine RR. Freight House.
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18. Boston & Maine RR. Freight House.



WHAT WORKS | MANCHESTER

How a 19th-Century Town Became a New Millennium Marvel

Once the world's textile leader, Manchester had to let go of the past before it could move forward.

BY COLIN WOODARD

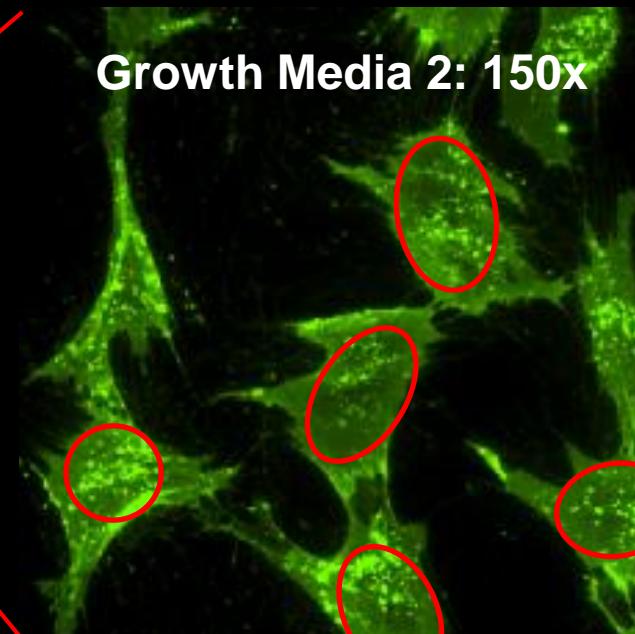
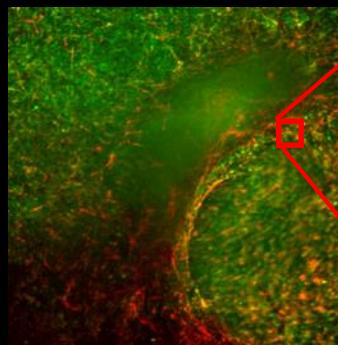
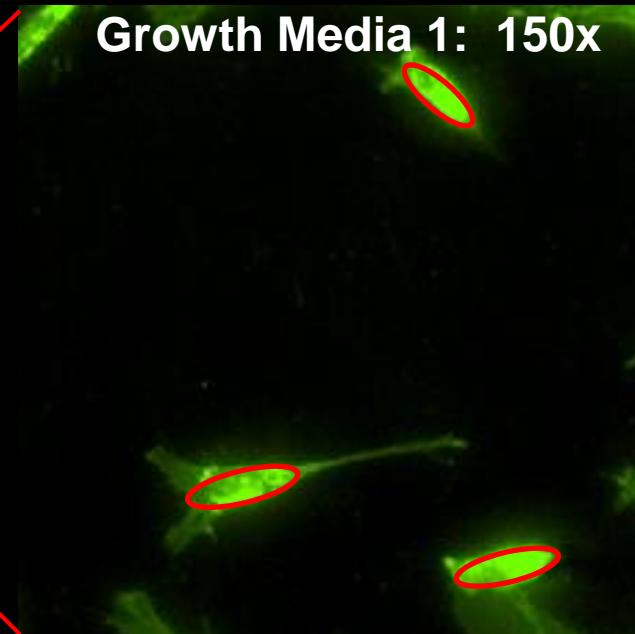
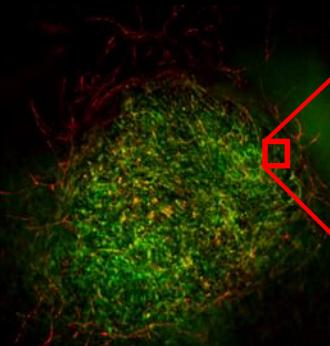


MANCHESTER NH MILL YARD:

TODAY!



Microvasculature Formation in Fibrin Gel



Circularity

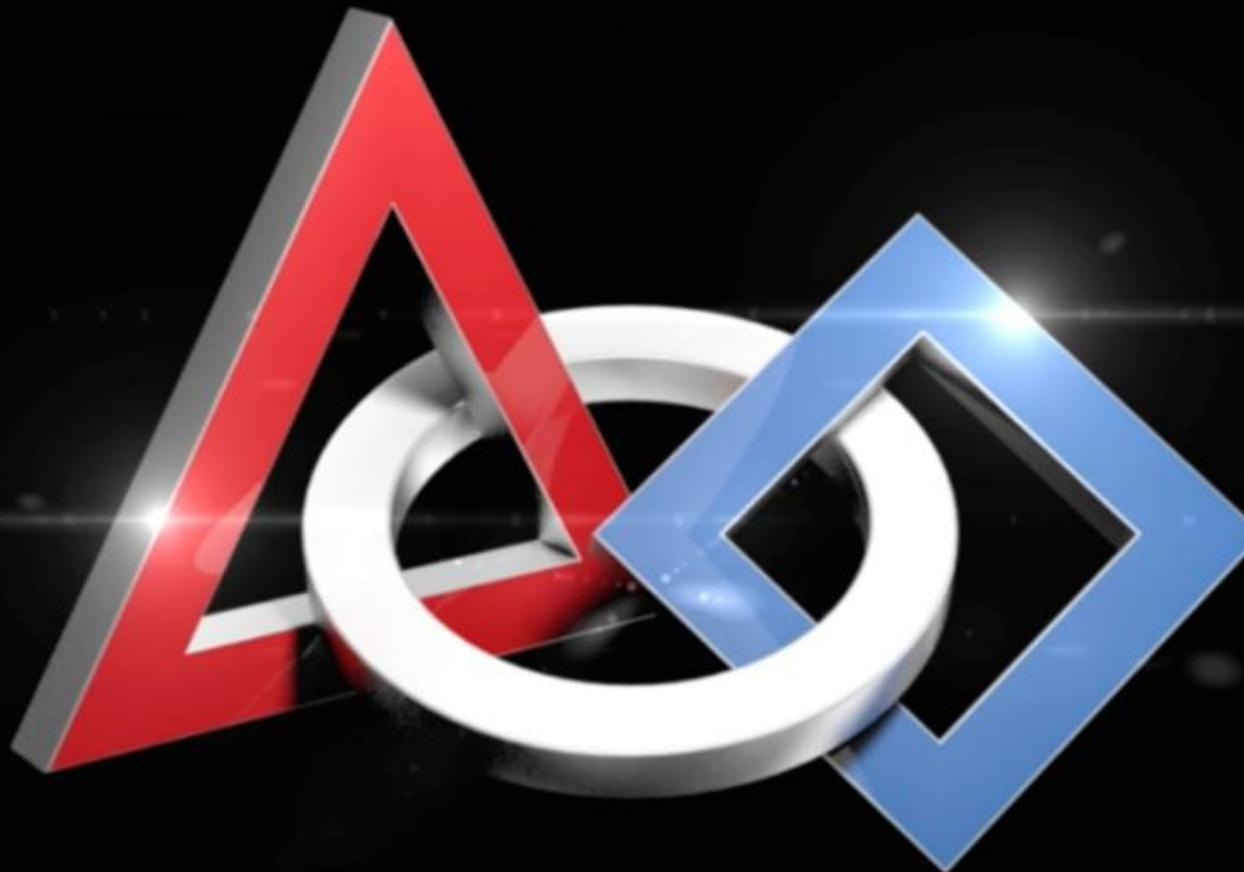
Aspect Ratio

Roundness

Solidity



Future “Silicon Valley” of Regenerative Medicine?



FIRST[®]
B E A C H A M P I O N



Morgan Freeman Clip Video

counters Celebration
IZE CRAZE"
NATIONAL CHAMPIONSHIP
TE ENGINEERING DESIGN
SCHOOL PARTNERSHIPS



1992 President George H. W. Bush kicks off the inaugural FIRST competition



1992 Inaugural FIRST competition



1993 President Clinton in a Rose Garden Ceremony



1995 Epcot begins hosting FIRST



2002 FIRST Closing Ceremony Celebration at Epcot



FIRST outgrows Epcot and moves to the Astrodome



2004 FIRST moves to the Georgia Dome



President George W. Bush hosts 2007 FIRST Champions at the White House

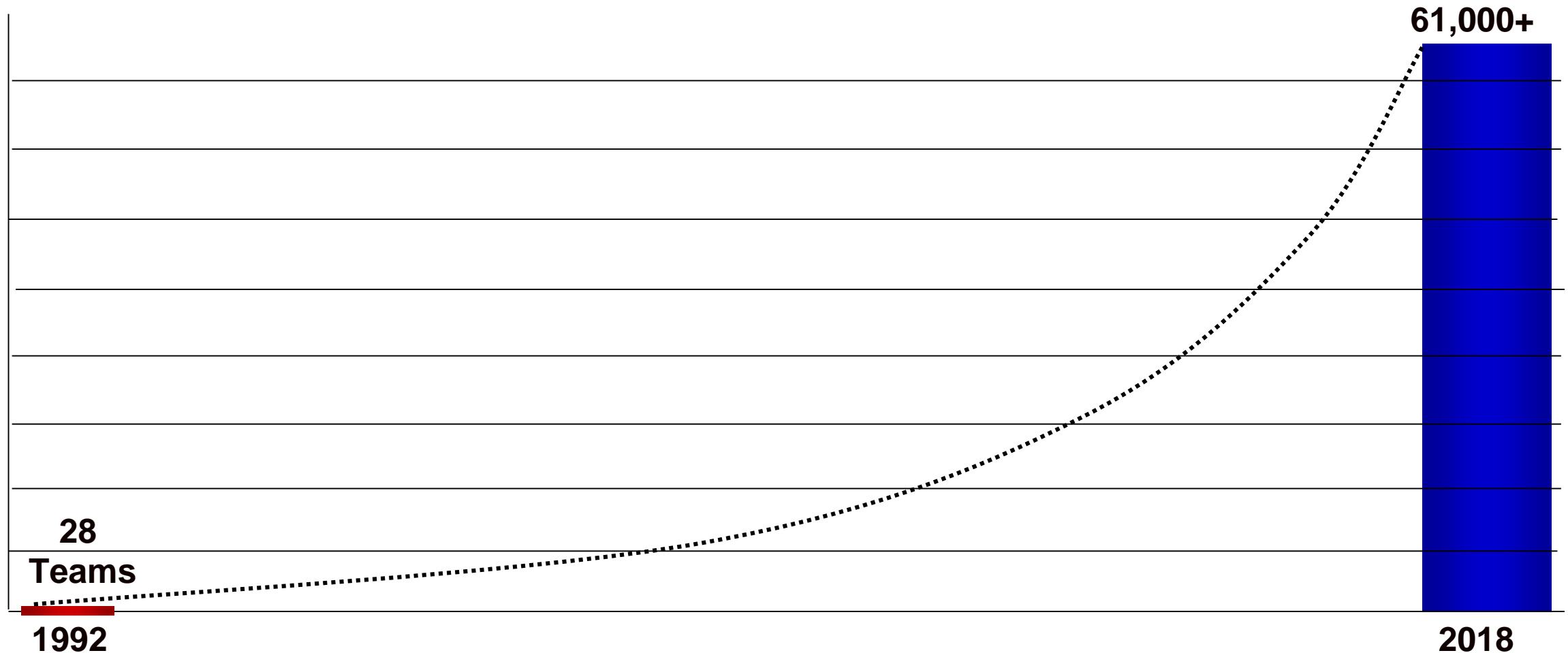


2011 FIRST gets a warm St. Louis welcome

President Obama
Celebrates FIRST
in the White House



In 2018 FIRST Impacted over 1 Million Students in Nearly 90 Countries



Brandeis University Study - “***More Than Robots***”

(Funded by Ford Foundation)



Compared to their matched peers, FIRST Alumni are:

- ✓ 50% more likely to attend college.
- ✓ 3x more likely to major in engineering.
- ✓ 9x more likely to have an internship in Freshman year.
- ✓ 4x more likely to pursue a career in Engineering.
- ✓ 2.5x more likely to volunteer in the community.

Brandeis University Study - “*More Than Robots*”

(Funded by Ford Foundation)

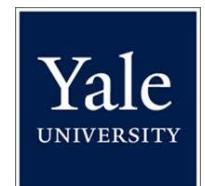
- ✓ Female *FIRST* Alumni are 4x (400%) more likely to pursue Technology and Engineering majors in college.
- ✓ Under represented *FIRST* Alumni are 2x (200%) more likely to pursue Technology and Engineering majors in college.



\$80+ million in scholarship from ~200 providers, including:



Kettering University™



Massachusetts Institute of Technology

FOR INSPIRATION & RECOGNITION OF SCIENCE & TECHNOLOGY

Over 3,700+ corporate supporters in cities around the world willing to help kids



Johnson & Johnson



MOTOROLA SOLUTIONS
FOUNDATION

DEKA

Baxter

Boston Scientific
Advancing science for life™

MONSANTO

NATIONAL INSTRUMENTS™



Medtronic

DELPHI

KPCB | KLEINER
PERKINS
CAUFIELD
BYERS

ARGOSY
FOUNDATION



Rockwell Collins

BAE SYSTEMS
INSPIRED WORK

xerox

United Technologies

nrg



DOW

QUALCOMM®

Google.org

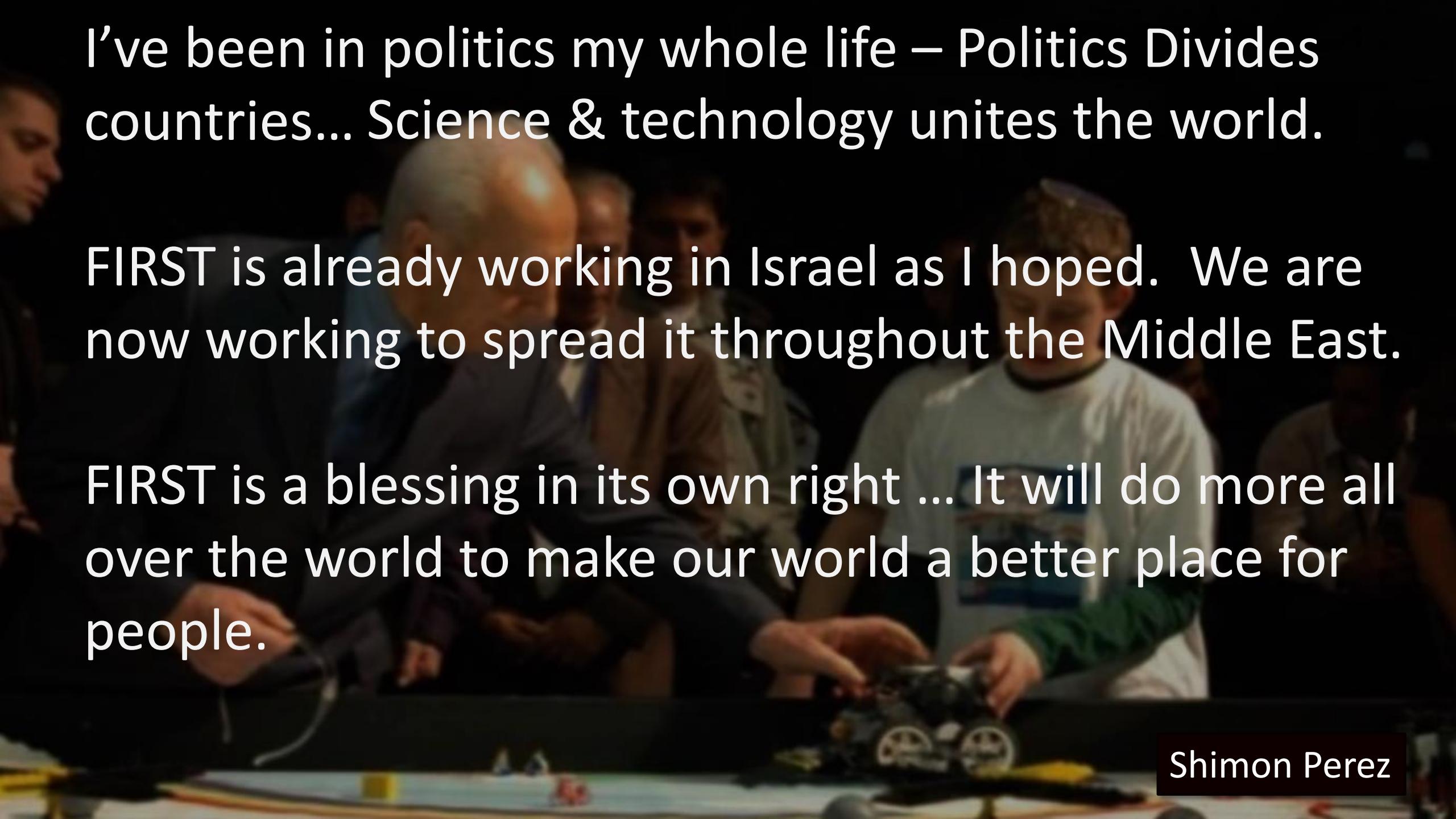
The
Walt Disney
Company

ptc





Shimon Perez Spearheads Israeli Adoption

A dark, slightly blurred background image showing several children of diverse ethnicities sitting around a table, focused on playing with small, colorful remote-controlled cars or robots. The lighting is dramatic, with strong highlights on the children's faces and hands.

I've been in politics my whole life – Politics Divides countries... Science & technology unites the world.

FIRST is already working in Israel as I hoped. We are now working to spread it throughout the Middle East.

FIRST is a blessing in its own right ... It will do more all over the world to make our world a better place for people.

Shimon Perez



in 88 Countries around the world

Introducing...



FIRST[®]
GLOBAL

www.first.global



Jon Kamen –FIRST Global



Inaugural FIRST Global Event
July 17th and 18th 2017
Constitution Hall
Washington D.C.,
United States of America



FIRST Global Challenge 2017

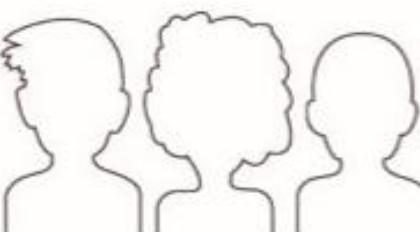
STATISTICS

157
countries



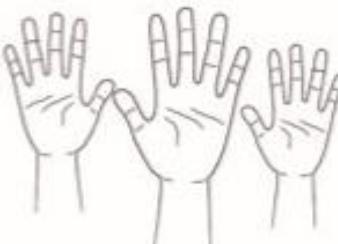
were represented in Washington, D.C.

2,500+
youth



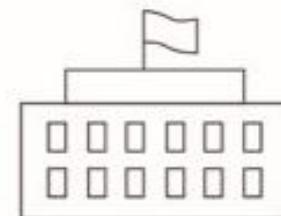
were impacted around the globe.

800+
volunteers



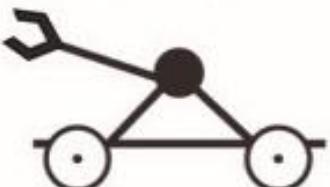
served in the GSC or worked at the event.

51
embassies



of foreign countries to the US supported their national team.

58
teams



had no prior robotics experience.

7,000,000+
miles



were collectively traveled by teams.

100+
media orgs



featured FIRST Global teams internationally.

60%
of teams



were founded, organized, or brought into being by women.







AFGHANISTAN

AFRICA

ALBANIA

REPRE

TE





*Save
the Date*

You are invited to join us for the

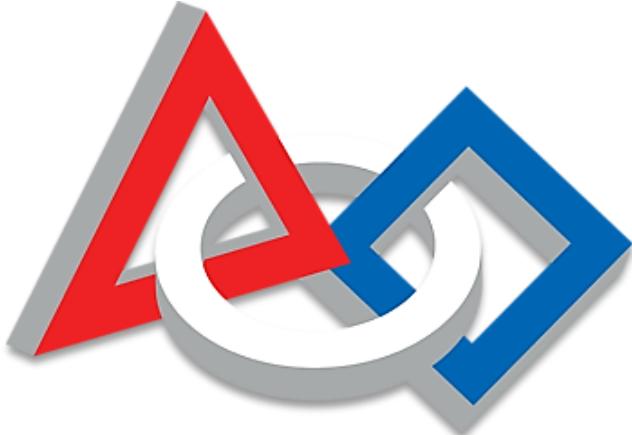
 **FIRST
GLOBAL**
2018 Challenge

Arena Ciudad de México,
Mexico City, Mexico
August 15-18, 2018



More details will be released in the coming weeks.

Get Involved!



FIRST
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FIRST
GLOBAL

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