



National
Science
Foundation

ADVANCING THE FRONTIERS OF RESEARCH: THE FUTURE OF THE RESEARCH ENTERPRISE

*Dr. Sethuraman Panchanathan
Director, National Science Foundation*

Council on Government Relations

February 25, 2021

Mission



Mission



To promote the progress of science;
to advance the national health, prosperity,
and welfare; and to secure the national defense.



Vision

Advancing the frontiers
of research into the future

Ensuring accessibility
and inclusivity

Securing global
leadership



Defining Moment

Global Competition

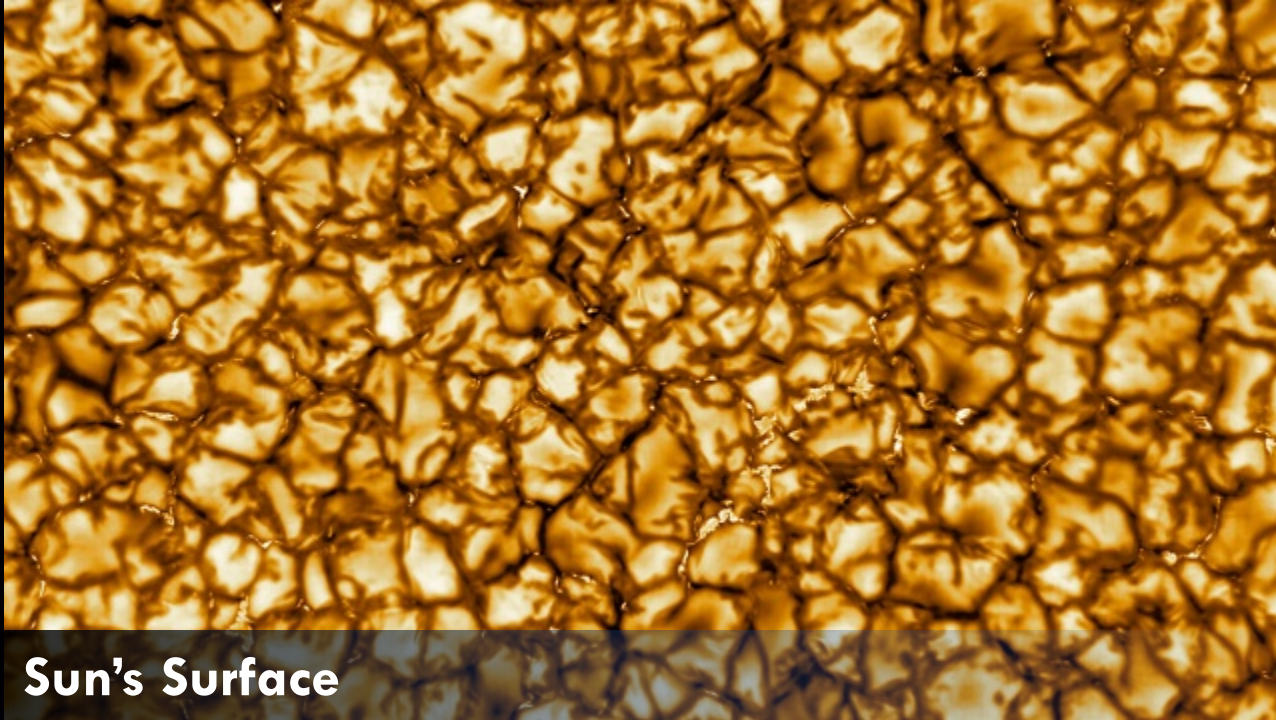
Missing Millions

Bipartisan Support



The Future of Research





Sun's Surface

Curiosity
Driven
Research







ERC for Advanced Technologies for
Preservation of Biological Systems

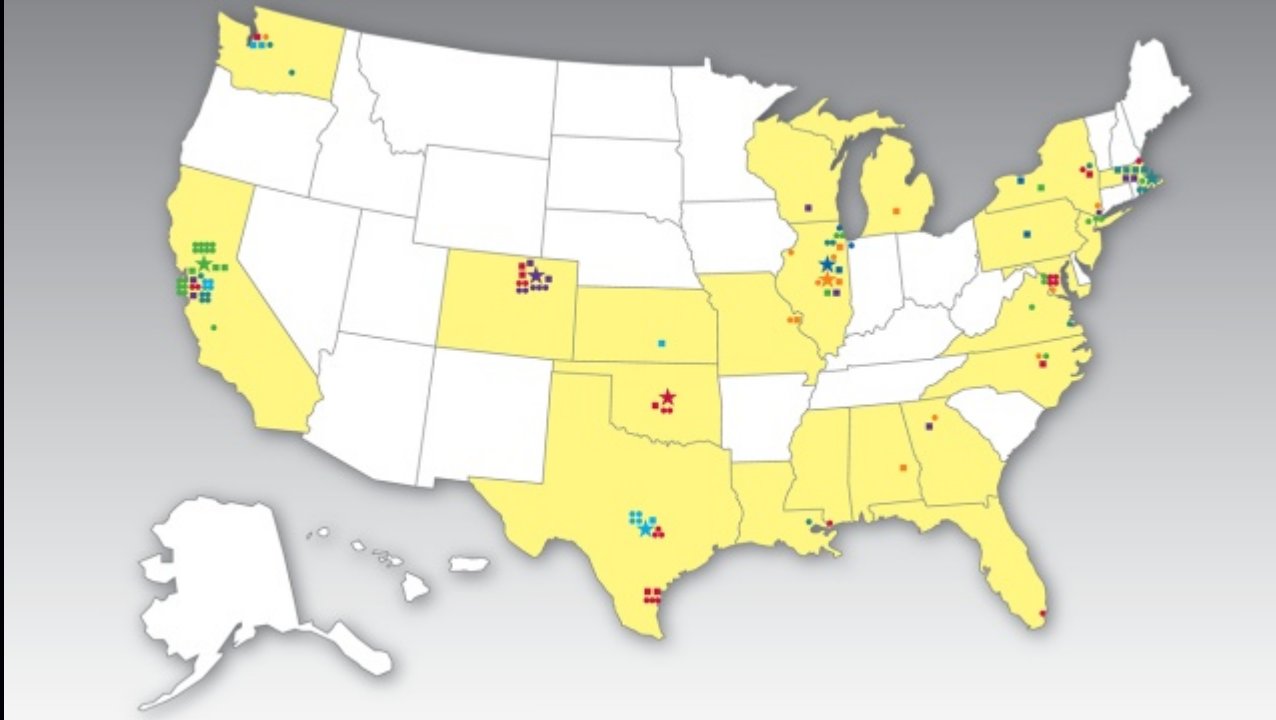
ERC for Advancing Sustainability through Powered
Infrastructure for Roadway Electrification

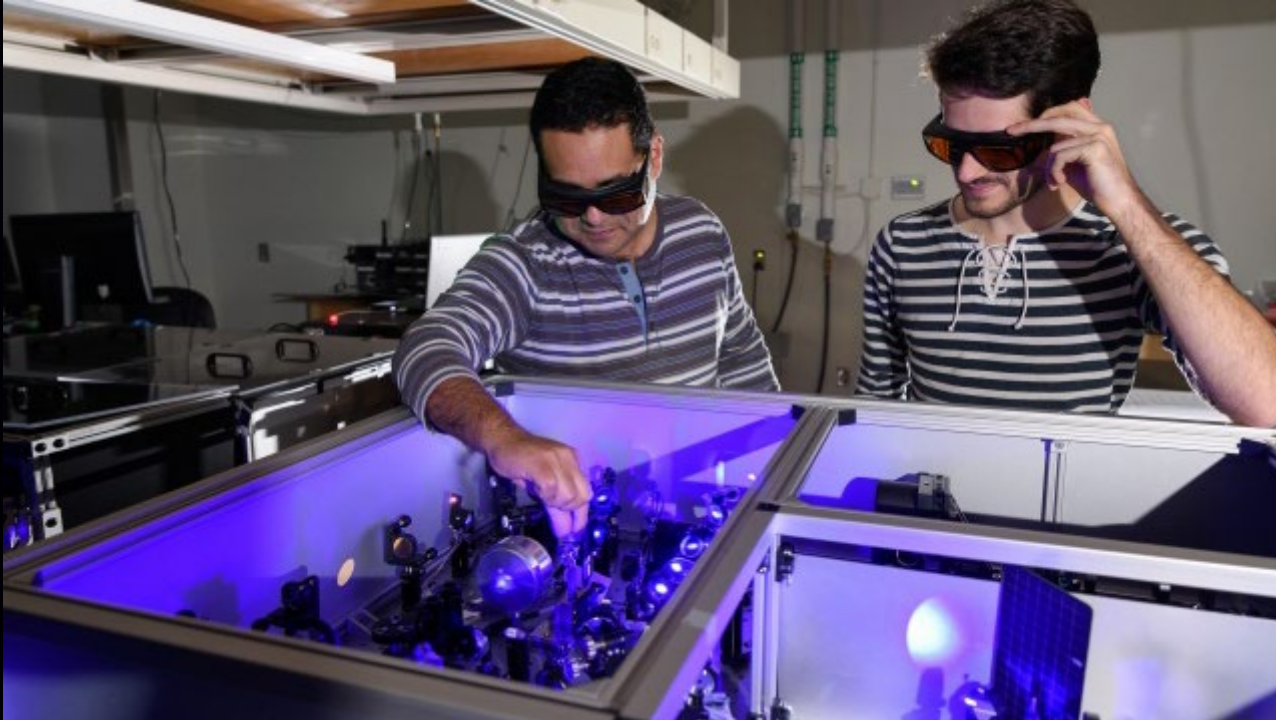
ERC for Quantum Networks

ERC for the Internet of Things
for Precision Agriculture





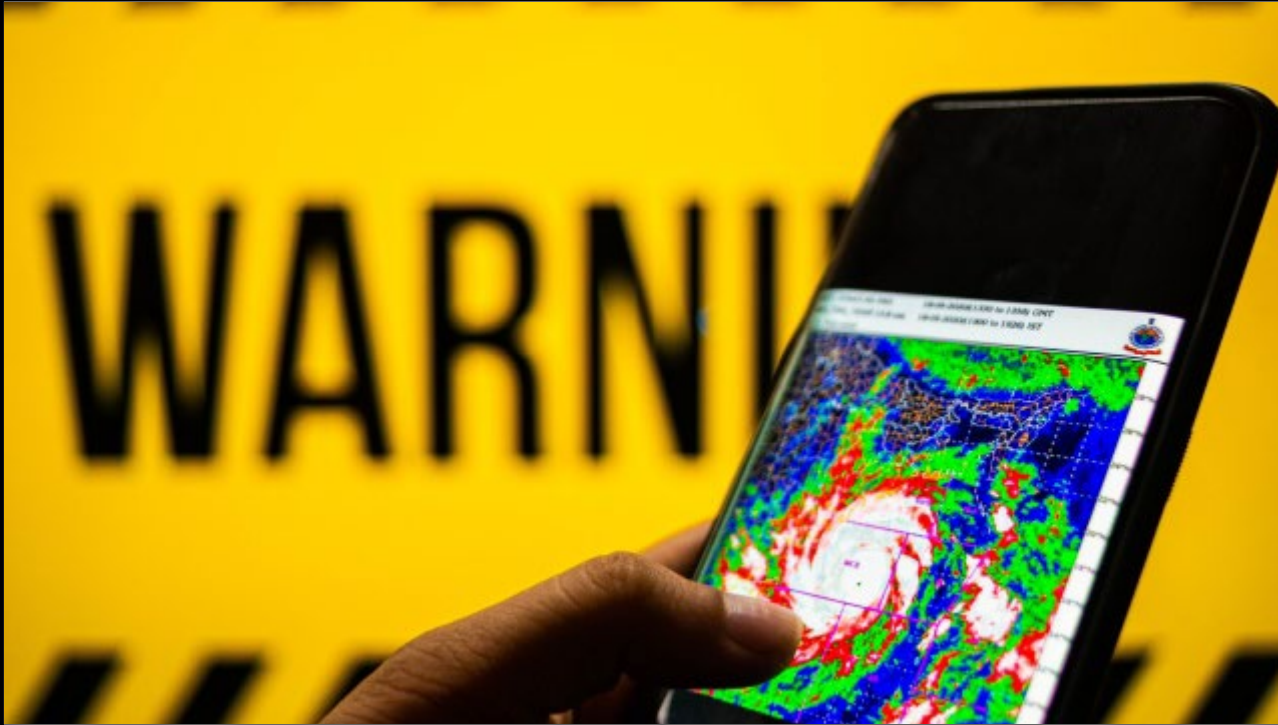












Advancing the Frontiers of Science



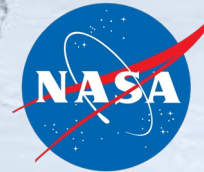




How? Intra-agency



How? Inter-agency



How? Direct Partnerships





Emerging Talent @ Scale



We need to inspire new generations across all communities to explore the wonders waiting to be discovered.



Missing Millions

Women



Hispanic or Latino



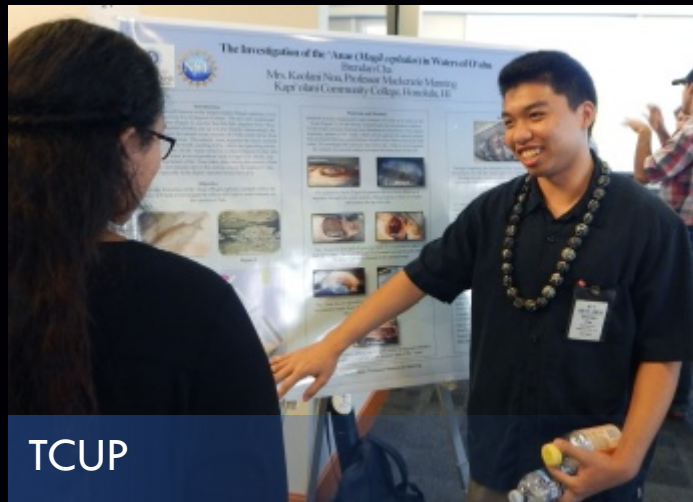
Black or African American



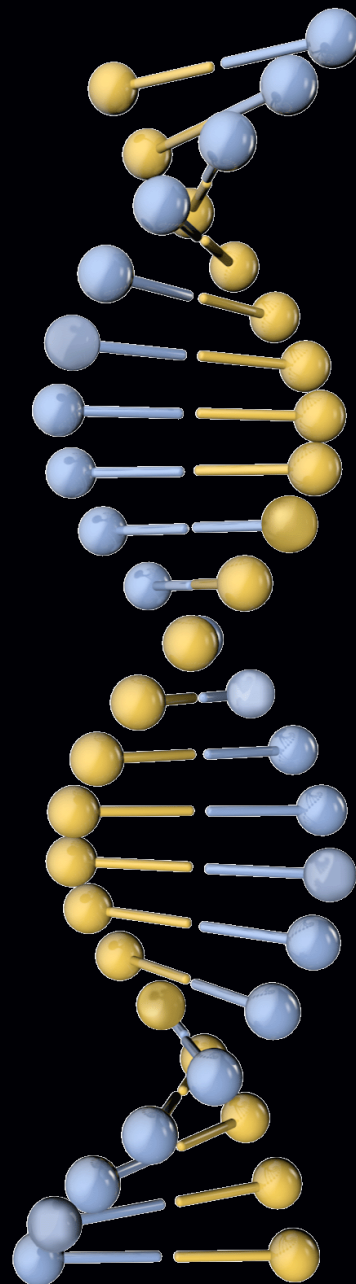
 x 100,000 people in 2020 in the S&E workforce

 x 100,000 additional people needed in 2030 for the S&E workforce to be representative of the U.S. population

Inspiring Talent Everywhere









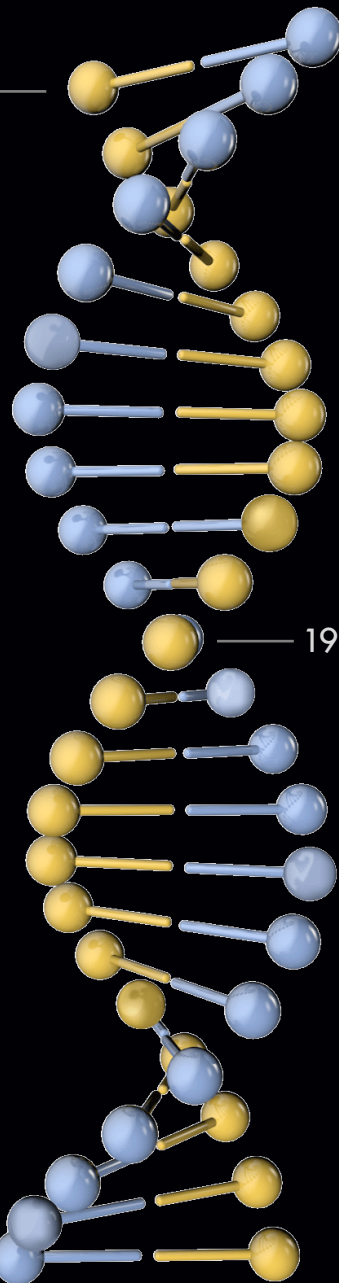
1986
AND
BEYOND

**NSFNET ENABLES EXPLORATORY
RESEARCH AT UNIVERSITIES**



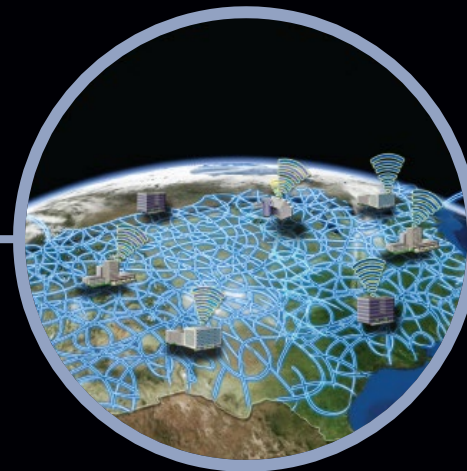
1980 —

2000 —



1990 —

1995 —



INTERNET COMMERCIALIZATION

1985 —



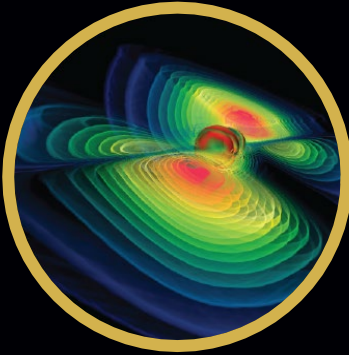
NSF NET

**LIGO ENABLES
FURTHER
EXPLORATION**



2020

**GRAVITATIONAL
WAVES DETECTED**



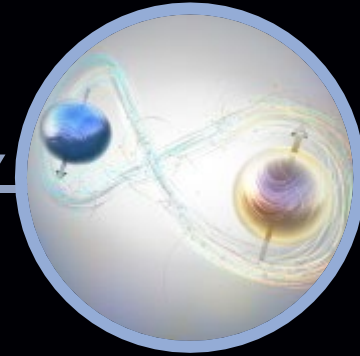
2015

**RESEARCH TO
PROVE THE THEORY
OF GRAVITATIONAL
WAVES BEGINS**



1970s

TODAY-

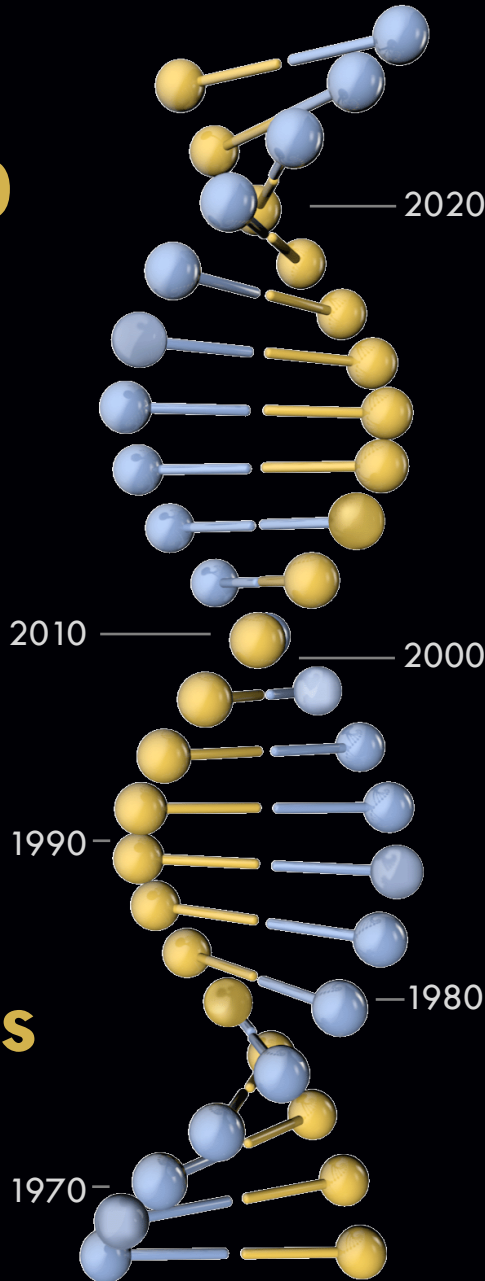


**ENHANCED
QUANTUM
SENSING
CAPABILITIES**

1999



**LIGO
DETECTORS
COMPLETED**





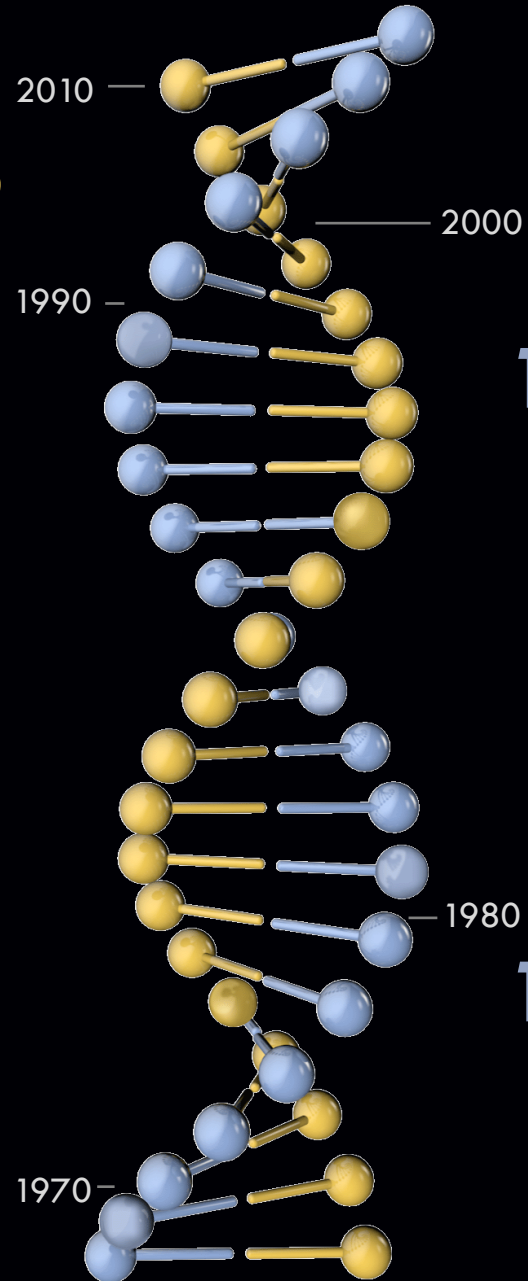
2009

**ROADMAP FOR ADDITIVE
MANUFACTURING CONFERENCE**

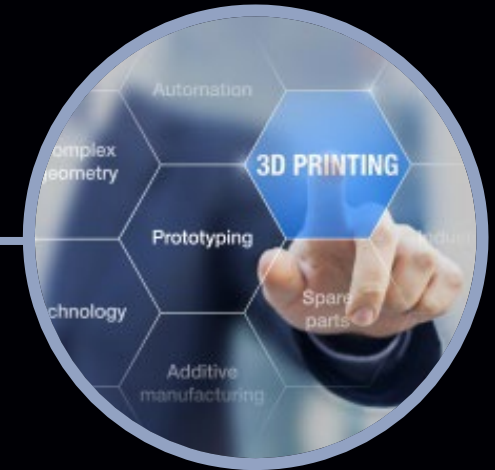


1986

**NSF MAKES THE FIRST ADDITIVE
MANUFACTURING AWARD**



1989



**(1989-1996) NSF'S STRATEGIC
MANUFACTURING INITIATIVE**

1970s



**NSF BEGINS SUPPORTING
COMPUTER AIDED DESIGN**

Knowledge Leads to Action

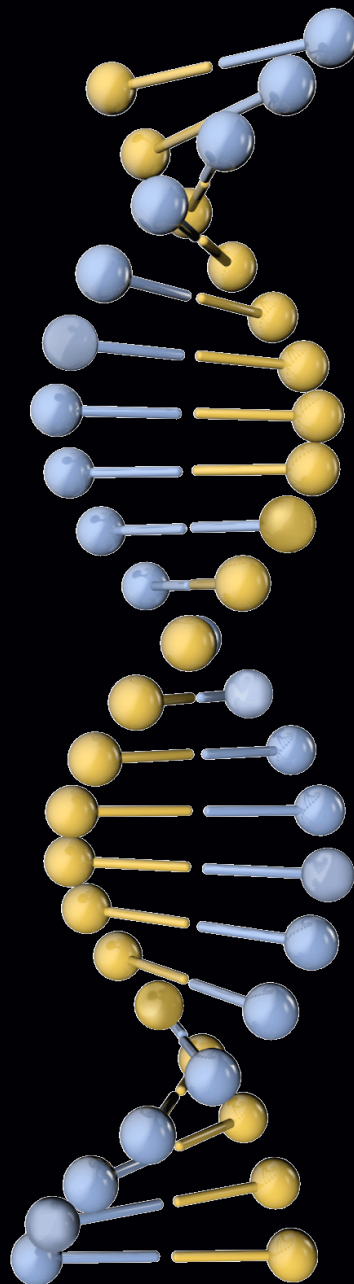


Building Innovation Ecosystems



Building Innovation Ecosystems







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*Remarks by Dr. Sethuraman Panchanathan
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