

NJIT Research and Innovation Translation Acceleration

Atam Dhawan

Senior Vice Provost for Research

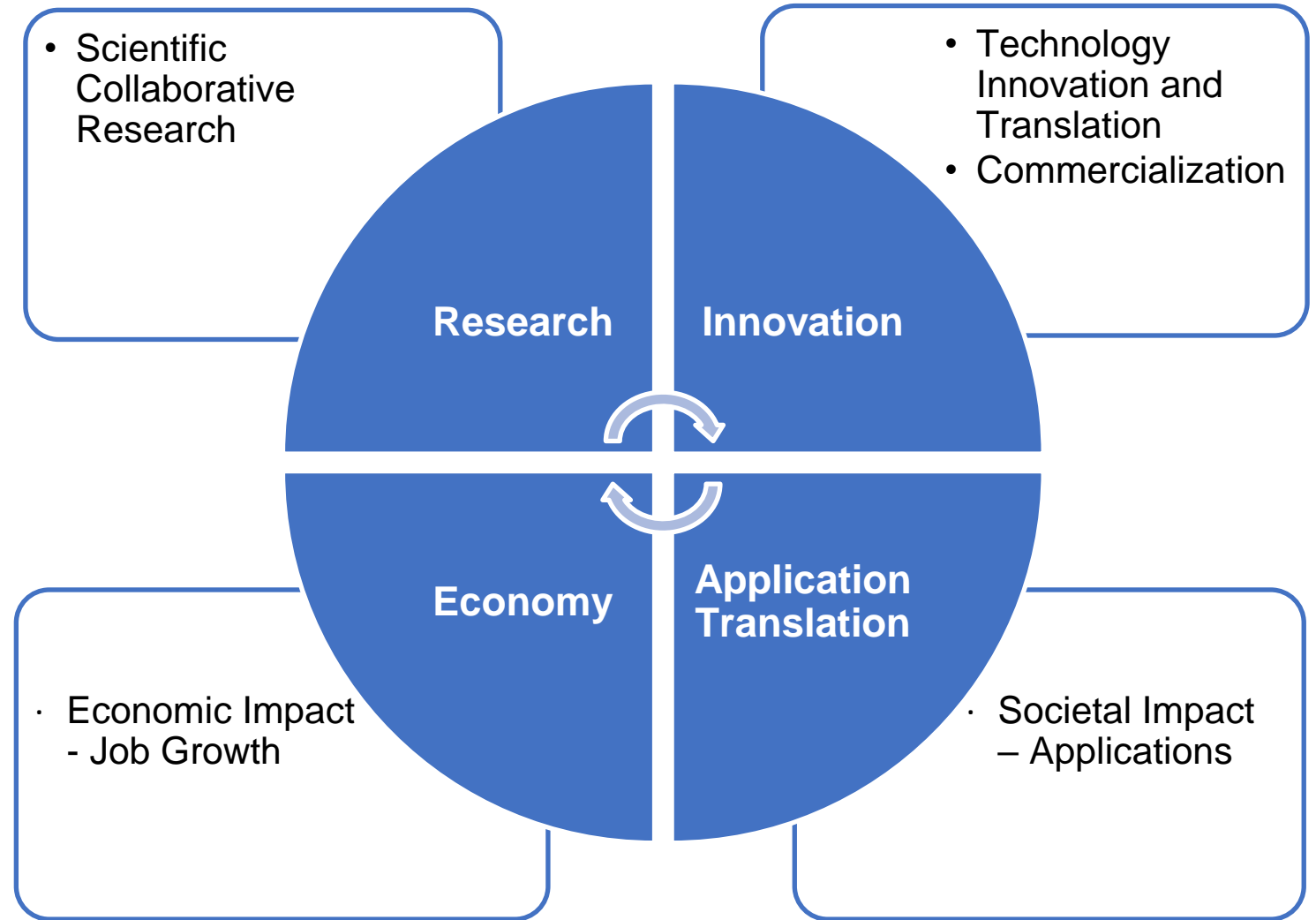
Executive Director, Center for Translational Research



Collaborative Research and Innovation Translation

Congressional Acts with Research and Innovation Translation Funding

- Endless Frontier Act
- America Innovation and Competitiveness Act
- Infrastructure Bill
- Inflation Reduction Act



Collaborative Research and Innovation Translation Funding Opportunities



National
Science
Foundation

**TECHNOLOGY
INNOVATION
AND
PARTNERSHIPS**



ARPA H

**ADVANCED
RESEARCH PROJECTS
AGENCY FOR HEALTH
(ARPA-H)**



TIP's Mission

The Directorate for Technology, Innovation and Partnerships, TIP, harnesses the nation's vast and diverse talent pool to **advance critical and emerging technologies**, address pressing societal and economic challenges, and accelerate the translation of research results **from lab to market and society**. TIP improves U.S. competitiveness, growing the U.S. economy and training a diverse workforce for future, high-wage jobs.

ARPA-H Mission

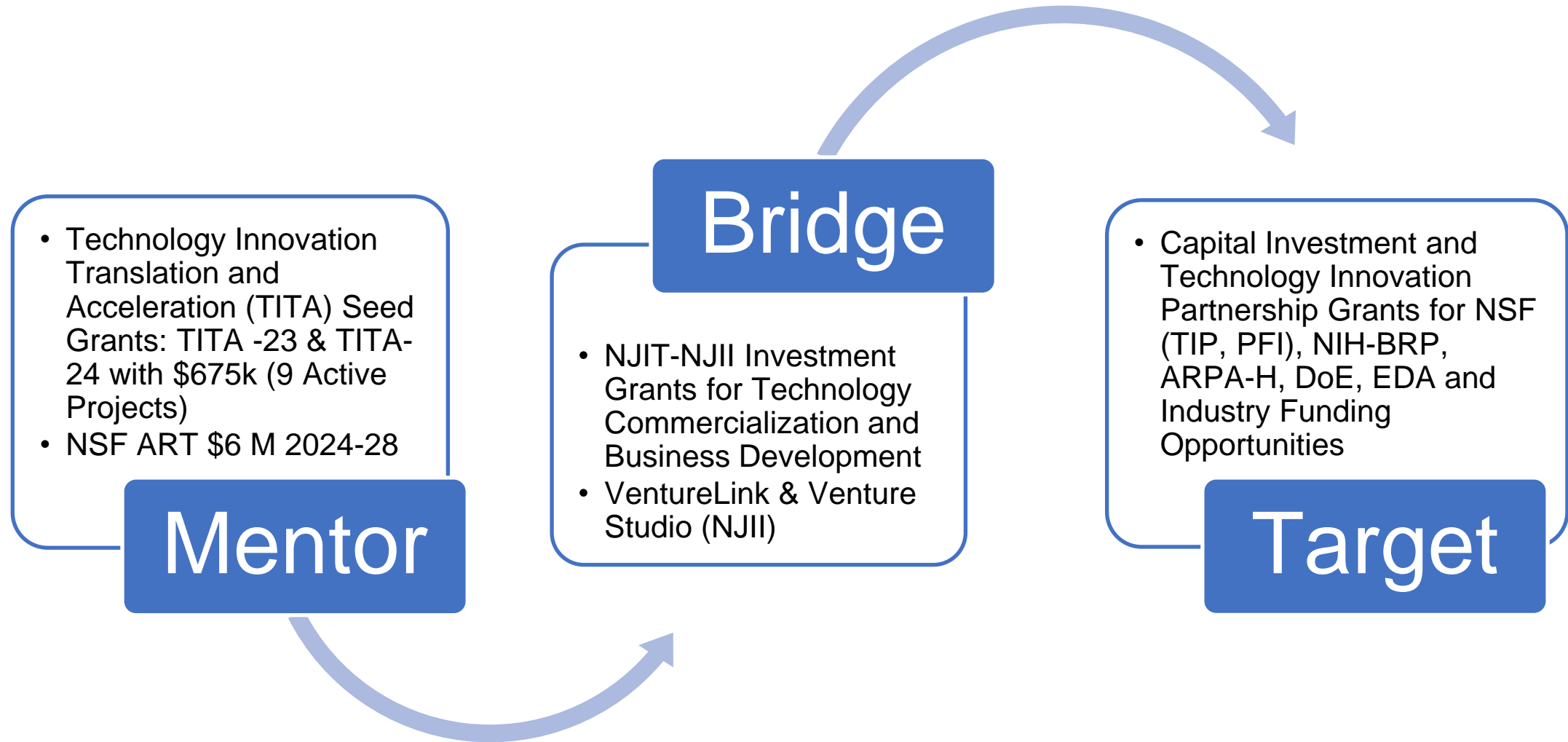
The proposed mission of ARPA-H is to make pivotal investments in **break-through technologies and broadly applicable platforms**, capabilities, resources, and solutions that have the potential to transform important areas of medicine and health for the benefit of all patients and that cannot readily be accomplished through traditional research or commercial activity.

NJIT Strategic Plan: Foster Innovation, Entrepreneurship and Industry Partnerships

NJIT-NJII



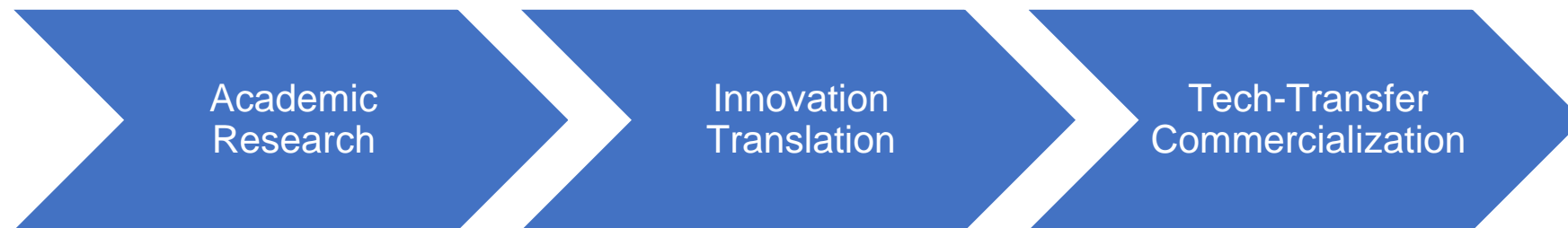
Research, Innovation, Translation and Entrepreneurship (RITE) Ecosystem



Technology Innovation Translation Acceleration (TITA) Seed Grant Program

The NJIT Technology Innovation Translation and Acceleration (TITA) Seed Grant program provides **mentored opportunities to faculty and students to successfully accelerate the translation of their research** and innovation to business development and incubation.

The TITA seed grant program aims to foster entrepreneurial pathways from research and innovation to business and value creation with the acquisition of intellectual property, market validation and engagement of stakeholders towards commercialization.



TITA Seed Grant Awards: Phases 1-3

Phase-1 (Up to \$25,000): Technology Innovation Translation Research and Proof of Validation: The TITA proposal must incorporate collaborative research and partnership with at least one external stakeholder from industry, academia, community or local government organizations, federal labs, or professional user groups (such as physicians in hospital or private practice for medical devices). The objectives of the Phase-1 proposal must include **market research for unmet need(s), developing prototype devices/technology, translational research for application validation**, and assessment of all risks associated with bringing the application to market, especially with respect to competition and future growth.

Phase-2 (Up to \$25,000): Technology Innovation Acceleration to Entrepreneurship: The Phase-2 funding will focus on the development of pre-commercial prototypes of devices or technology, scalable validation, and business plans and technology transfer to an existing company or forming a new start-up company establishing market channels. This phase, often called **the early incubation stage**, will include **advanced market validation studies** (such as early clinical trials for validation of potential medical devices). The Phase-2 goals must also include development of collaborative partnership-based business models and strategies to attract interest from external entrepreneurs, investors or a commercial entity for licensing and commercialization

Phase-3 (Up to \$25,000): Advanced Technology Innovation Acceleration to Commercialization: The collaborative partnership-based Phase-3 proposal will focus on **developing business and investment plans with advanced commercialization-ready technology** or product(s) and additional regulatory, marketing, and risk management. This phase will also include larger scalable technology validation, market trials (such as early clinical trials for medical devices) and user-acceptance studies towards submission of investment proposal and grants to secure future funding for commercialization from the angel investments, and NSF TIP or similar grant program.

NSF Accelerating Research Translation (ART) Grant

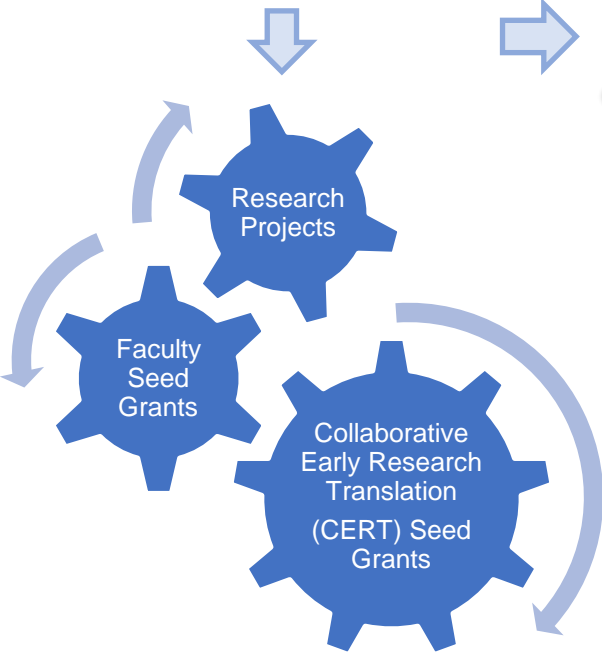
\$6 Million – 2/1/2024 – 1/31/2028



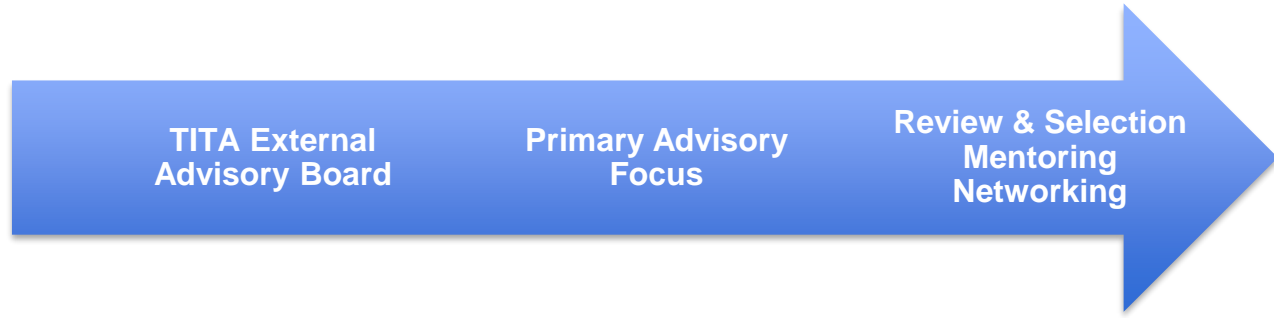
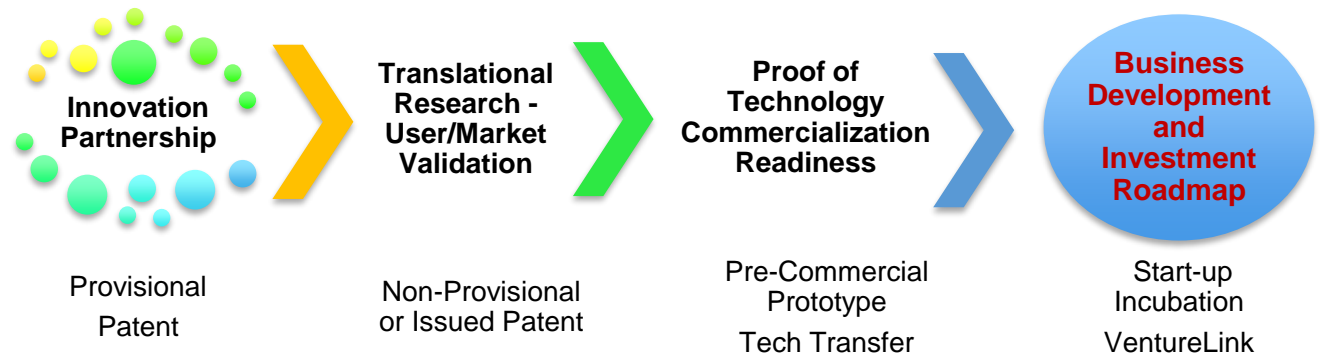
- **Establish NJIT Center for Translational Research (CTR)**
- **Enhance TITA Seed Grant Funding Program**
 - Accelerate the Translation of Promising Prototypes for Market Validation, Entrepreneurship and and Commercialization Activities working with External Stakeholders
 - TITA-2023: First Round - 4 Projects (\$75k each) – Started January 2, 2023
 - TITA-2024: Second Round – 5 Projects (\$75k each) – Starting January 2, 2024
- **Promote Technology Research and Innovation Translation Partnership**
 - Provide Undergraduate Students Translational Research Internships (10 scheduled for 2024)
 - Provide Post-Doc and Graduate Students Translational Research Training Opportunities
 - Host Networking, Workshop and Training Opportunities and Develop Partnership Opportunities for Translational Research and Innovation Acceleration to Market Validation, Entrepreneurship and Commercialization
- **Provide Additional Resources to Enhance Research, Innovation and Technology Entrepreneurship (RITE) Ecosystem at NJIT**

Pre-TITA

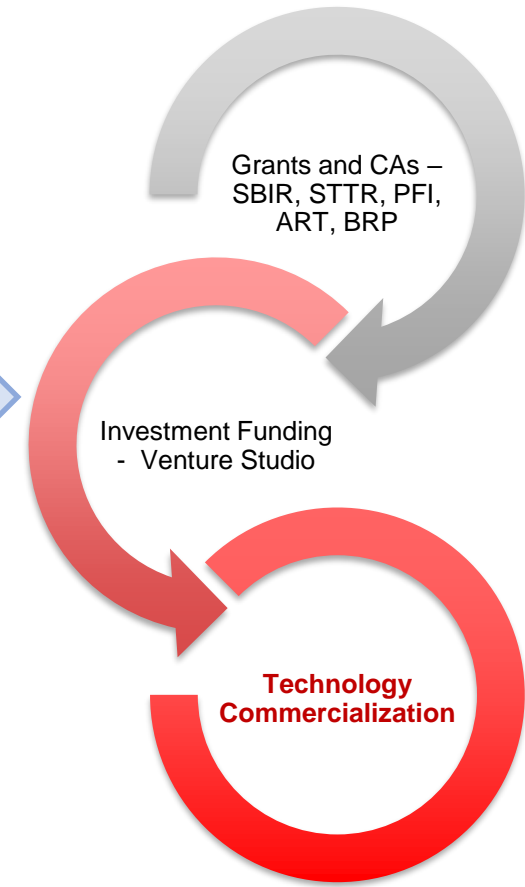
Ideation



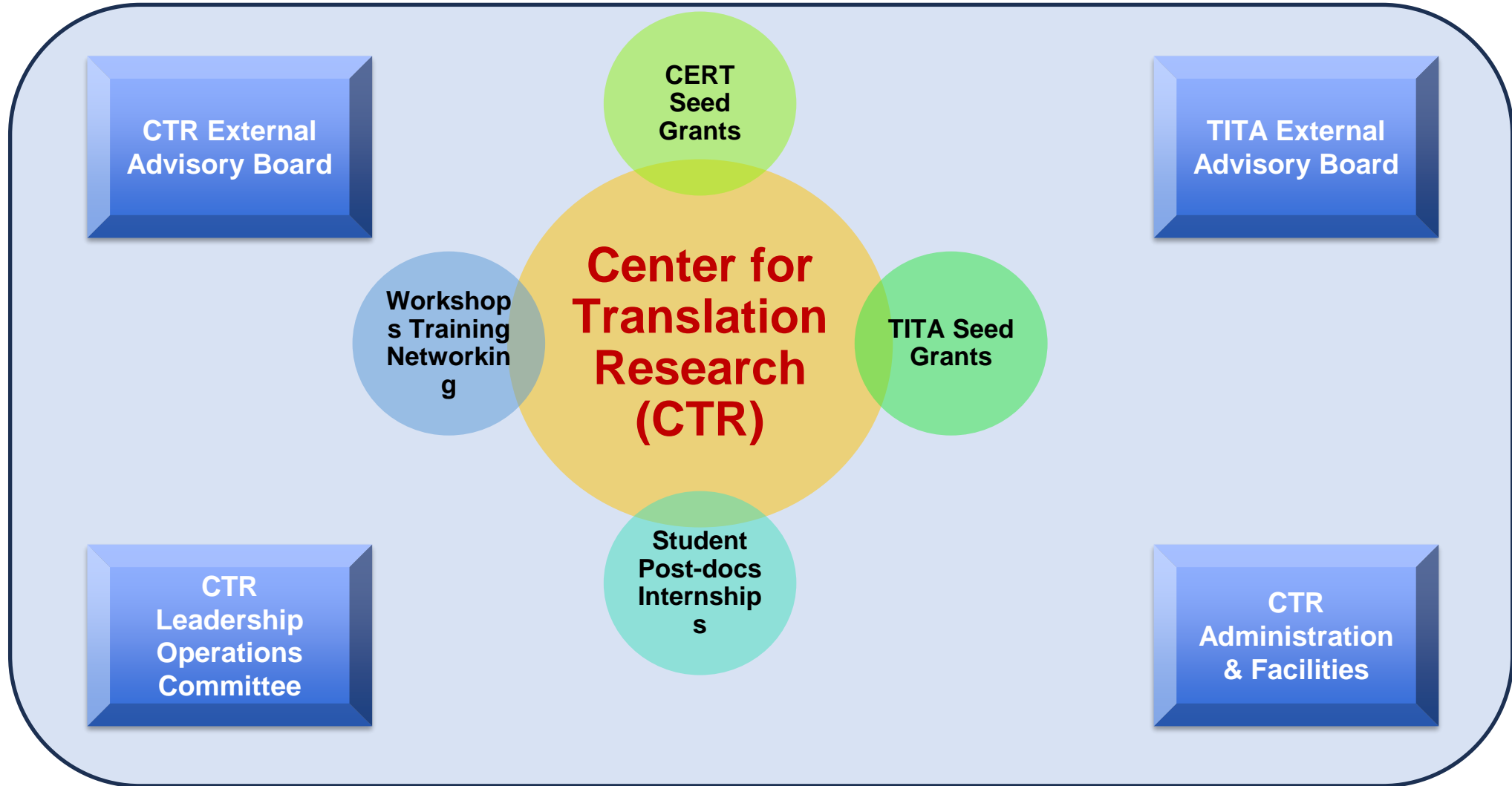
Technology Innovation Translation Acceleration (TITA)



Post-TITA



CTR Functional Environment and Infrastructure Support



TITA External Advisory Board

- Brian G. Kiernan, (Retired) vice president and chief scientist of InterDigital Communications, LLC.
- Steven C. Schachter, MD, Chief Academic Officer for the Consortia for Improving Medicine with Innovation & Technology (CIMIT).
- Nicholas DeNichilo, PE, (Retired) President and Chief Executive Officer of Mott MacDonald, North America, and currently Vice-Chair of the NJIT Board of Trustees.
- Michael Doyle, PhD, Vice Present for Research and Economic Development, New Mexico Tech; Serial Entrepreneur and Inventor. Tech Transfer Expert
- Daniel Henderson, Chair, BOO NJIT Excellence in Research Medal Committee, Serial Entrepreneur, Innovator, and Artist; Previous Assistant to Kazuo HASHIMOTO, a prolific Japanese inventor with over 1000 patents worldwide.
- Manish Patel. CEO and Founder of TrickyWater LLC, a small business advisory firm; Director of Brand Innovation at Princeton Partners, a strategic brand marketing firm.
- Marc Long, Executive Vice President of R&D at MTF Biologics, Expert in Product and Technology Development, Clinical Affairs, Intellectual Property, and Project Management.
- Govi Rao, Co-Founder and Managing Partner of Carbon Group Global (CGG); Serial Entrepreneur, Experienced in Global Marketing and Business Development in Materials, Energy and IoT space.

TITA EAB



Brian Kiernan



Nick DeNichilo



Mike Doyle



Govi Rao



Steven Schachter



Marc Long



Manish Patel



Dan Henderson

CTR External Advisory Board

- Robert Cohen, President, Digital, Robotics, and Enabling Technologies at Stryker; Chair, NJIT Board of Trustees; Expert in Global Business Development in MedTech
- Nicholas DeNichilo, PE, Retd. President and Chief Executive Officer of Mott MacDonald, North America; Vice-Chair of the NJIT Board of Trustees; Expert in Infrastructure Business Development
- Craig Arnold, Vice Dean of Innovation, Princeton University; Susan Dod Brown Professor of Mechanical and Aerospace Engineering; Inventor and Expert in Tech Transfer Strategies
- Colin Brenan, Chief Executive Officer at Kibur Medical Inc; Serial Entrepreneur, Expert in Tech Transfer and Business Development
- Dean Paranicas, CEO, Healthcare Institute of New Jersey, Expert in Corporate Development, Strategic Investments, Investor Relations and Public Affairs.
- Judith Sheft, Executive Director, New Jersey Commission on Science, Innovation and Technology; Expert in Tech Transfer, Innovation Management and Economic Development
- Virginie Maillard, Head of Siemens Technology, US SIEMENS TECHNOLOGY; Head of Global Research Activities in Simulation and Digital Twin Technologies, Expert in Corporate Technology Development
- Naor Berkner, Managing Partner, FalconCreek LLC , Expert in Corporate Financial Management, Industrial IoT, Industrial Tech / Robotics, Warehouse & Industrial Automation, and Infrastructure Products

CTR EAB



Robert Cohen



Nick DeNichilo



Virginie Maillard



Colin Brennan



Judith Sheft



Craig Arnold



Dean Paranicas



Naor Berkner

CTR Operations Committee

- Atam Dhawan, Senior Vice Provost for Research, Executive Director, Center for Translational Research
- Shawn Chester, Associate Professor, Mechanical and Industrial Engineering, Associate Director, Center for Translational Research
- Cesar Bandera, Associate Professor of Entrepreneurship, MT School of Management
- Michael Ehrlich, Associate Professor of Finance, MT School of Management
- David Jones, Chief Diversity Officer, Office of Inclusive Excellence
- Michael Johnson, President, New Jersey Innovation Institute
- Kerry Fluhr, Intellectual Property Manager, Office of Research
- Philip Marx, Manager, Center for Translational Research

CTR Operations Committee



Atam Dhawan



Shawn Chester



Cesar Bandera



Michael Ehrlich



David Jones



Michael Johnson



Kerry Fluhr



Philip Marx

CTR Advisory and Mentoring Boards: Strategic Directions, Guidance, Assessment and Resource Development

CTR External Advisory Board

CTR Mission, Goals and Strategic Plan Review
Financial Review
Assets Review

Advisory Overview
CTR Programs
RITE Ecosystem
Workshops, Training,
Networking Events

Funding and Investment Strategies

TITA External Advisory Board

Advisory Overview
TITA and CERT Programs

TITA Project Review,
Selection, and
Assessment

TITA Project Mentoring
and Advising
Networking and Resource
Development

CTR Operations Committee

Strategic Plan
Development and
Implementation

NSF ART and CTR
Programs Administration
(TITA, CERT, Workshops,
Training, Networking)

Facilities and Resources
Administration

NSF ART Program Mentoring IHE

NSF ART Programs
Mentoring

Translational Research
Capacity Assessment

NSF ART Programs
Progress Review and
Assessment

NJIT Center for Translational Research – NSF ART Funded



NJIT Microdevices Translational Research & Validation Center

NJIT Microfabrication Innovation Center (MIC)



State-of-the-Art Microfluidics and MEMS Fabrication and Characterization Facility for Prototyping Microdevices for Healthcare and Environmental Translational Applications.

Overall Strategy ... my two cents ...

We need to develop a ***community and culture*** of translational research and innovation partnerships; however, it is the high-risk high-impact innovation translation that creates the **“Transformation”**

We need to foster them from the foundational pipeline.

