

# NJIT Technology Innovation Translation and Acceleration (TITA) Seed Grant

## TITA Seed Grant Program Objective

The NJIT Technology Innovation Translation and Acceleration (TITA) Seed Grant program will enable faculty and students to successfully accelerate the translation of their innovation to enterprise development and business incubation. The TITA grant program will 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.

The TITA Seed Grants will be funded towards market driven translational research to further develop innovation ready for enterprise development and commercialization under the mentoring of a business advisor. This will increase awareness of potential benefits at earlier stages of translation and market validation and allow researchers and stakeholders to collaborate for entrepreneurial success. It will also help faculty to submit competitive translational research proposals to external grant funding opportunities.

## Eligibility

NJIT faculty members pursuing research addressing a significant unmet market need with an innovative potential solution of high impact are encouraged to apply for TITA seed grants. The following requirements must be met at the time of Stage-1 Idea Concept Paper (described below) submission:

1. Proof of concept of the innovative solution to the unmet market need of high significance has been demonstrated in laboratory settings with the ongoing research work.
2. A provisional or non-provisional patent has been filed by NJIT with the applicant inventor team.
3. A tenured or tenure-track faculty member at NJIT should be the PI and applicant team leader and may include other inventors, partners and co-investigators such as collaborators and students.

## Awards

Up to two NJIT Technology Innovation Translation and Acceleration seed grants of **\$50,000** each will be awarded in Fall 2019 through an internal competition with the following process. The awarded teams will work on translational research and innovation projects with external business mentors on milestones based on preliminary market research and validation.

After 6-9 months of working with a mentor and milestone assessment of the progress, the teams can request a supplement of **\$25,000** for advanced market research, validation and strategic enterprise development for external funding and investments.

## **TITA Proposal Submission Process**

Stage-1: Submit a simple 2-page **TITA Idea Concept Paper**

All Idea Concept papers will be reviewed by the TITA External Advisory Board who will invite selected applicants for Stage-2 submission. Comments and feedback on the evaluation will be provided.

Stage-2: If invited, submit a 5-page (with optional self-made video) **TITA White Paper**

All TITA White Papers will be reviewed by the TITA External Advisory Board who will invite selected applicants for Stage-3 submission. If invited, a mentor from the TITA Board will be assigned to the applicant team. Comments and feedback on the evaluation will be provided.

Stage-3: A mentor will be assigned to the applicant team to help submission of **TITA Full Proposal** and make a “Live Pitch” to the TITA Board.

All TITA Full Proposals will be reviewed by the TITA External Advisory Board who will invite selected applicants for a Live Pitch presentation to the Board and other potential investors. The TITA Board will make the final decision of awarding TITA Seed Grants endorsing the overall goals, milestones, and assessment on the funded projects with applicant team and mentors. Comments and feedback on the evaluation will be provided.

Stage-4: If awarded with **TITA Seed Grant**, the applicant team will work with the assigned mentors and pursue translational and market research with enterprise development

Stage-5: With the milestone accomplishments, assessment and recommendation by the mentors, the applicant team can request for \$25,000 **TITA Supplement Grant** funding for additional market assessment and further strategic enterprise development for external funding.

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The guidelines for TITA Seed Grant program proposal submission process are provided below.

### **1. TITA Idea Concept Paper**

Page-1: Cover Sheet

Title of the Technology

Proposers

Affiliations and Contact Information

Executive Summary (Brief Technical Description of the Innovation: 250 words)

Funding: Current and Previous Grants used for Technology Development

Relevant Patent(s) with Title, Status and Date of Filing/Issue

Date of Submission

Page-2: Market and Business Case

Unmet Market Need and Significance (250 words)

Current Status of the Technology Development and Validation (250 words)

Current Status of the Technology Transfer and Enterprise Development (100 words)

The Idea Concept Papers will be reviewed by the External Technology Research and Innovation Translation (TITA) Advisory Board to select and invite applicant teams to submit the White Papers.

## **2. TITA White Paper**

Revise the Concept Paper and add the following sections for Idea White Paper (total 5 pages maximum) along with a short self-made video (optional but highly recommended)

- Market Size and Future Projections (Preliminary Assessment)
- Competition Overview
- Proposed Innovation Deliverable (Product/Solution)
- Value Proposition and Competitive Advantage (For the Technology Innovation)
- Introduction of the Team

The White Papers will be reviewed by the TITA External Advisory Board who will invite selected applicants for Stage-3 submission. If invited, a mentor from the TITA Board will be assigned to the applicant team.

## **3. Full TITA Innovation and Business Case Proposal**

When invited after the review of TITA white paper, a mentor will be assigned to the applicant team to help prepare the Full TITA Proposal. The full TITA proposal will include revised and expanded version of the White Paper and add plans for translational research, product development and validation, market research and analysis, business case and potential impact. In addition, the Full TITA Proposal must provide complete review on competitors, intellectual property asset(s), preliminary financial and detailed technical milestones, assessment, deliverables and budget. The Full TITA Innovation and Business Case Proposal must include the following sections and address all comments and feedback from reviewers.

- Cover Sheet (Revised as above)
- Unmet Market Need and Significance
- Market Size and Growth
- Market Research: Competition
- Proposed Technical Innovation and Solution
- Value Proposition and Competitive Advantage
- Preliminary Work and Proof of Concept
- Proposed Translational Research and Market Validation
- Business Case and Risk Management
- Milestones, Assessment and Deliverables
- Financials and Budget with Milestones Allocation
- Budget Justification

- 2-Page CV of PI and each team member (NSF Format [https://www.nsf.gov/bio/bioac/members/bio\\_sketch/Raymond\\_NSF\\_Biographical\\_Sketch.pdf](https://www.nsf.gov/bio/bioac/members/bio_sketch/Raymond_NSF_Biographical_Sketch.pdf))

#### **4. Live Pitch**

The applicant team will make a pitch to the TITA external advisory board and potential investors who have reviewed their Full Proposal. The proposer teams will be provided format information and guidelines on the contents to be covered in each section of the pitch, time duration of each section, and a list of specific questions from the review of the Full Proposal to address. The applicant team will continue to work with mentors to finalize Live Pitch and practice delivery in order to give the best impression to the judges.

Sample pitch guidelines might include a general overview of how to draft a compelling story, specific slides to include (e.g., IP, competitive landscape), a list of questions that should be answered, and/or a list of common mistakes to avoid.

Final decision on awards will be made by the TITA external advisory board and agreement of the assigned mentors to work with the selected teams during the funding period to maximize the likelihood of additional funding/investment on the successful completion of the grant.

#### **5. Budget Preparation and Guidelines**

The funding period should start January 2, 2020 in module(s) of six month duration. The following budget period options may be used for the primary funding not exceeding \$50,000 in total:

- January 2, 2020 – June 30, 2020: Up to \$50,000
- July 1, 2020 – December 30, 2020: Remaining amount with the total funding request not exceeding \$50,000

For example, if \$30,000 is requested for the first budget period (January 2, 2020 – June 30, 2020), Up to \$20,000 may be requested for the second budget period (July 1, 2020 – December 30, 2020).

Justifications should be provided to all budget requests. The budget requests should also be allocated to each milestone tasks in a separate table.

Supplement Award of \$25,000 for additional six month funding period to further support business development and market validation may be awarded on the recommendation of the mentor and approval of the TITA External Advisory Board after completing all milestones of the primary funding. The guidelines for submission of the proposal for supplemental funding will be provided to select teams through mentors.

#### **TITA Seed Grant Proposal Submission Timeline**

- TITA Seed Grant Announcement: August 30, 2019

- Stage-1: TITA 2-Page IDEA Concept Paper Submission: September 27, 2019
- Invitation to Submit TITA White Papers: October 4, 2019
- Stage-2: TITA 5-Page White Paper Submission: October 18, 2019
- Invitation to Submit Full TITA Proposal and Mentor Assignment: October 25, 2019
- Stage-3: TITA Full Proposal Submission: November 22, 2019
- Invitation to Live Pitch Presentation: November 29, 2019
- Stage-4: TITA Full Proposal Live Pitch Presentation to the EAB Board: December 9, 2019
- Announcement of TITA Seed Grant Award: December 12, 2019
- TITA Seed Grant Start Date: January 2, 2020

**All Proposals and documents should be submitted via email attachment to [tita-group@njit.edu](mailto:tita-group@njit.edu)**

### **Review Criterion**

The review criterion of all submissions will include

- Market Need: The significance, size and potential growth of the unmet need
- Innovation: Novelty strength, acceptability and scalability of the innovation in the target market
- Competition: The competitive advantage and value proposition of the innovation
- Commercialization Readiness: Work done on the proof of concept, early assessment for use in the market, and IP protection
- Proposed Plan: Translational research plan, product development and market validation
- Business Case: Enterprise development, pre-commercialization and financial plans
- Overall Impact: Potential impact if the TITA grant and product commercialization plans are successful.

### **Other Resources:**

- NJIT Intellectual Property and Licensing Administration Office <https://research.njit.edu/patents>
- Inventor's FAQ: <https://research.njit.edu/patents>
- VentureLink: <https://venturelink.njit.edu/>

**For any questions or additional information, please contact Atam Dhawan, SVP for Research at [dhawan@njit.edu](mailto:dhawan@njit.edu).**

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**TITA External Advisory Board Members**  
(Additional members are being added)

**Brian G. Kiernan:** Brian Kiernan, retired vice president and chief scientist of InterDigital Communications, LLC, possesses a dynamic combination of technical expertise and leadership savvy that

has fueled his outstanding achievements in the development of computer and communication standards and systems. He received a B.S. in electrical engineering from Newark College of Engineering in 1970, and an M.S. in Management Science/Operations Research from Fairleigh Dickinson University. Kiernan, who was recognized at the 2016 NCE Salute to Engineering Excellence for his achievements since graduation, was directly responsible for InterDigital's worldwide technology and industry standards activities and aided in developing new market, product and technology initiatives by providing strategic technical and marketing support to InterDigital's sales, marketing and business development efforts as well as the company's worldwide patent and licensing programs.

Previously, Kiernan was president of USTC World Trade Corporation, an international sales and marketing subsidiary of InterDigital's predecessor company, International Mobile Machines (IMM). Having full P&L accountability for IMM's international business, he quadrupled revenues in two years and opened new markets—primarily in Asia and Latin America—that accounted for over 90 percent of InterDigital's past product revenue. Prior to his sales position, Kiernan was IMM's vice president of Engineering and Operations. His product line responsibilities covered all areas of product development and sales engineering, manufacturing, product support and quality assurance of IMM's UltraPhone® TDMA Wireless Local Loop product.

Under Mr. Kiernan's tutelage, IMM/InterDigital grew from an unknown tiny telecom company with a big idea and zero revenue to an acknowledged worldwide force in mobile communications with some 14,000 patents, annual revenue in excess of \$500M and a \$2B market cap.

Before joining IMM, Kiernan was a senior staff engineer at GTE Products Corporation, where he generated and evaluated military communications systems concepts that included mobile and fixed station radio, circuit and message switching, and network management and control. Kiernan's program and technical management experience encompassed TDMA and CDMA voice and data systems, digital and analog switching, and VHF/UHF and microwave radio. He was also active in both communications and non-communications Electronic Warfare systems development. He has been a speaker at numerous industry conferences, published numerous papers and articles, and holds 27 patents.

He was awarded the IEEE Standards Medallion in 2006 and the IEEE Hans Karlsson Award in 2013 for his extraordinary skill and dedication in chairing the complex task groups that developed the IEEE 802.16a, 802.16e, and 802.16m WirelessMAN standards, the world's first 4G Wireless standards. The Hans Karlsson Award honors outstanding skills and dedication to diplomacy, team facilitation and joint achievement in the development of standards in the computer industry.

After retiring from InterDigital, Mr. Kiernan has put his extensive technical and managerial talents to work, serving as Chair of the Albert Dorman Honors College Interdisciplinary Design Studio (IDS) program which morphed into the NJIT Undergraduate Research and Innovation (URI) Program. In this capacity, Kiernan, along with other URI Board members, evaluates and guides numerous student projects, several of which have developed into student companies. As an active Angel Investor, Kiernan has invested in some of these student companies and continues to guide them as they develop. He is also an active member of the NJIT ECE Industry Advisory Board and the NJIT Highlander Angel Network, where he has invested in several NJIT-related companies.

**Govi Rao:** Govi has over 25 years of experience globally, across several industries, including specialty chemicals, coatings, building materials, lighting, energy and the rapidly evolving IoT space. As co-founder and Managing Partner of Carbon Group Global (CGG), Govi is currently leading CGG's vision to scale transformational solutions, specifically to address education, total resiliency of women and resource efficiency. Prior to CGG, Govi was the President and Chief Executive Officer of Noveda Technologies, a pioneer in water and energy management solutions, based in Bridgewater, NJ. In 2007, Govi was instrumental in envisioning and pioneering one of the earliest LED lighting solutions providers, Lighting Science Group Corporation as the Chairman & CEO.

Previously, Govi was Vice President and General Manager of the Philips Solid State Lighting business in North America. He also held several leadership roles at Philips, including Vice President of Business Creation & Brand, where he was responsible for product management, strategic marketing, branding and sustainability. Prior to joining Philips, Govi spent over a decade with specialty chemicals leader Rohm and Haas Company (now part of Dow Chemicals) in various leadership roles across a range of businesses and geographies. In addition to his experience with a wide business portfolio, Govi has extensive functional expertise that includes strategic planning, business innovation, product management, marketing, operations, leadership development and general management. Widely traveled across Asia, Europe and the Americas, Govi has a keen sense of value creation in emerging markets and technologies, grounded on the principles of sustainability. Govi has built winning teams that achieved extraordinary goals in start-ups as well as mature businesses – pioneering and inspiring profitable and sustainable growth.

Govi serves on several boards including the Undergraduate Research and Innovation at NJIT and the department of Chemistry and Chemical Biology at Rutgers University. Govi also serves as an advisor to Hellothinkster, an AI based educational technology company. Govi is active in discussions with various Governments, NGOs and investment groups to drive market adoption of social impact solutions and is a contributing author of the Sustainable Enterprise Fieldbook (AMACOM 2008). Govi has testified to the U.S House of Representatives on IP and Innovation.

**Marc Long, PhD:** Marc Long is currently Vice President of R&D at MTF Biologics, leading the new tissue, product and technology development teams, clinical affairs, intellectual property and grants, and project management groups. Marc's previous 20+ years of industry experience focused on evaluating and developing biologics products and technologies for device companies. Marc's previous roles with Stryker included leadership in the Spine, Orthobiologics, Sports Medicine, and Joint Reconstruction divisions. Before that, he worked at Smith & Nephew Orthopaedics and Biologics. Marc received his PhD in Bioengineering in 1999 and MSc in Materials Science & Engineering in 1992 from Clemson University after graduating from Arts et Métiers ParisTech in 1989 with an Engineering Diploma. Marc was born in Cannes, France.

**Manish Patel:** Manish Patel, founder of TrickyWater, a small business advisory firm, is currently Director of Brand Innovation at Princeton Partners, a strategic brand marketing firm.

Manish is a skilled engineer and leader with creative and innovative capabilities. He is a successful entrepreneur with proven consultancy, product development, management, and strategic analysis skills. Analytical skills vital in referencing developmental, production, and supervisory skills across multiple

industries to maximize profitability and satisfaction of clients in various technical and creative fields. Produced results for all companies by branding, marketing, and procuring revolutionary designs and enhanced digital developments. He loves challenges and helping clients solve problems. Manish was at Omnicom Agency, Arnell where he was Lead Project Manager reporting directly to Chairman of Arnell Group. He managed Innovation Lab teams comprised of artists, designers and engineers developing innovative brand solutions, strategies and products. Key Client Experience included Project Lead for The Home Depot - OrangeWorks innovation initiative, delivering several product SKUs in key categories in collaboration with senior merchandisers, including the Home Hero brand. While having Chrysler Automotive as a client, he was Project Leader and C-Suite Liaison for innovation programs in the areas of automotive design, NAV system user interface design, and electric vehicle programs. He also managed relationships with leading global design studios Pininfarina and Giugiaro in Italy. He introduced process and stage gate methodology and applied it to creative development process.

Manish also worked on the re-brand of the iconic Fontainebleau Hotel and the strategy behind building an experience that once again made the hotel a cornerstone of the Miami high end lifestyle destination. He has also helped small New Jersey businesses maximize their advertising success with the introduction of innovative methods for reaching consumers.

Manish obtained a BSME from Drexel University and an MS Management from NJIT. Now he enjoys giving back to the school by serving on their Undergraduate Research and Innovation External Advisory Board. When he is not working, he can be seen coaching soccer, playing volleyball or managing the family dog's social media page.

**Jim Stevenson, PhD:** Jim Stevenson was a Corporate Fellow at Honeywell International from 1996 until his retirement in March of 2011. His professional work at Honeywell focused on polymer and composite materials and applications for mechanical and electronic structures and enclosures in an aerospace environment. Nine patents and 17 publications followed from this work.

Prior to joining Honeywell, Dr. Stevenson was Director of Research at Trexel, a start-up company near Boston commercializing microcellular foam technology. He proposed injection molding as the preferred foaming process, a result that led to nine patents.

For the previous 19 years Dr. Stevenson served in technical and management positions with GenCorp, Inc. in Akron, OH. One development of the Extrusion Laboratory, which he supervised, was curved extrusion technology. While at GenCorp, Dr. Stevenson received eight patents and published 23 articles, two book chapters, and a book *Innovation in Polymer Processing: Molding*.

Following a postdoctoral year at Columbia University, Dr. Stevenson joined the Chemical Engineering Department at Cornell University where he earned tenure in 1977. He was a founding member of the Cornell Injection Molding Project, was highly rated for his teaching, and prepared 17 publications. He earned his M.S. and Ph.D. degrees in Chemical Engineering at the University of Wisconsin, Madison and a B.S.Ch.E. from Rensselaer Polytechnic Institute.

After retirement from Honeywell, Dr. Stevenson founded a consulting company, Stevenson PolyTech LLC, which specializes in polymer material/ process development and industrial short courses with more than 45 presentations worldwide.



During his retirement, Dr. Stevenson helped to organize and funded the TechQuest competition which, now in its seventh year, awarded five innovation prizes and fellowships to NJIT undergraduates. He was also instrumental in setting up Innovation Day which celebrates the numerous technical awards won by NJIT undergraduates and hosts electronic presentations of their many innovative projects. Jim has been a member of the URI External Advisory Board and predecessor organizations since 2012. Jim and his wife Steffi also support endowed undergraduate scholarships for NJIT students primarily from Irvington and Newark high schools. In 2017, Jim was received the *Special Friend of the University* award for outstanding contributions by a non-alumnus. Jim is a member of the Board of Directors of the Honeywell retirees association, where, as cartoon editor of the newsletter, he is challenged to come up with graphics devoid of equations.

Jim and Steffi, who met by chance in Riverside Park, NYC 49 years ago, have two adult sons and four grandchildren, all living in the western US. The newest member of the Stevenson family, an energetic cockapoo puppy named Amber, generates lots of affection in their Morristown, NJ home.

**Nish Parikh:** CEO and Chief Innovation Officer at Rangam, Nish Parikh is a visionary who develops strategic workforce solutions for Rangam and its customers by aligning their disability inclusion strategies with current and future talent acquisition needs. Nish is an alumnus of the Harvard Business School and an Instrumentation and Control Engineer by profession. Over the past 15 years, he has built a culture of empathy and innovation, while undertaking key people initiatives both within Rangam and outside. Driven by the philosophy of 'Employment for Everyone,' Nish creates rewarding and sustainable career opportunities for individuals with unique abilities and military veterans. He serves on the external executive board of the Undergraduate Research and Innovation (URI) programs at the New Jersey Institute of Technology, and is a member of the Forbes Human Resources Council.

Winner of the NJBIZ Healthcare Heroes Award and Verizon's Powerful Answers Award, Nish has built a robust framework for total talent management. The technology that he has in place at Rangam is capable of processing a large volume of jobs every day and submitting hundreds of matching resumes to Rangam's Fortune 500 clients. Rangam's ABA-based autism intervention and job skills training apps are installed on over half-a-million devices globally.

Nish is a strong believer in cross-industry collaboration. He continues to partner with forward-thinking businesses, workforce game changers and thought leaders, disability support agencies, disability inclusion advocates, transition coaches, and non-profit foundations to do well while doing good. He has donated a 20-acre land in Princeton, NJ to build an employment research park that will create community jobs for uniquely-abled individuals in the region.

Nish lives with his wife and two children in Princeton, New Jersey. He is an animal lover and also enjoys singing as well as driving well-engineered cars

**TITA Seed Grant  
Program  
Proposal Submission  
Guidelines**

