



Gujarat Technological University

(Accredited with A+ Grade by NAAC)

Report On Technology Transfer Summit 2024

Research to Revenue

Date: 19th April, 2024

Venue: Gujarat Technological University, Ahmedabad, Gujarat

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Gujarat Technological University has organized Technology Transfer Summit 2024 (Research to Revenue) on 19th April, 2024. As GTU being IT enabled University and an International Innovative University, fostering and leading startup ecosystem since 2011 and running Incubation centers across Gujarat region (that covers at most district and population of Gujarat – Including Rural and Urban areas). The participants of the summit were a person who had registered Intellectual Properties in form of filed, published and granted (mostly from the academia faculty and students). Around 54 Technologies were registered and displayed their technology in the summit.

Following are the Chief Guest, Guest of Honour of the Summit.

- **Dr. Parvinder Maini**, Scientific Secretary, Office of the Principal Scientific Adviser to the Govt. of India is the Chief Guest of the Summit.
- **Mr. Pathik Patwari**, Past President, Gujarat Chamber of Commerce and Industry (GCCI) and **Dr. Unnat Pandit**, Controller General of Patents, Design & Trademarks, Mumbai are the Guest of Honour of the Summit.

Following experts were delivered sessions on different aspects of Technology Transfer

- **Ms. Reema Sahni**, Head, Innovation – Technology Transfer Office (i-TTO), IIT Delhi.
- **Dr. Rajababu Vyas**, Professor & Head, Agricultural Microbiology Bio fertilizer Project, Agricultural University, Anand.
- **Dr. Bijaykumar Sahu**, Sr. Regional Manager, National Research Development Cooperation (NRDC), New Delhi
- **Dr. Kamlesh Prasad**, Chief Scientist, Central Salt & Marine Chemicals Research Institute (CSMCRI)
- **Dr. Louise Boisen**, Counsellor, Intellectual Property Rights, Royal Danish Embassy, New Delhi
- **Mr. Sanjay Patel**, Patent Attorney, Excellon IP
- **Dr. Omkar Acharya**, Executive Director, H. K. Acharya & Company
- **Mr. Anil Pandey**, Head, IPFC, Setup by MSME, GOI, Confederation of Indian Industry

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Summit Outline:

The Summit started at 8:30 Am with Registration and High Tea.

Summit is categories in five session

1. Inauguration & Keynote address by the esteem guests
2. Expert Session I on the theme “Academic strategies for accelerating Technology Transfer & Commercialization”
3. Expert Session II on the theme “Strategies for Innovation Management: Valuation & Licensing”
4. Technology Showcasing and Interaction with Industry for the possibility of technology transfer
5. Panel Discussion & Concluding Session

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Expert Session I

Theme: “Academic strategies for accelerating Technology Transfer & Commercialization”

Moderator: Prof. (Dr.) S.D. Panchal, Director, GSET-GTU



Before we invite our session experts, I would like to just introduce about the theme of this particular session, which is academic strategy for accelerating technology transfer and commercialization, and experts will share their views how to accelerate the technology transfer exercise specifically in the academic environment. So our first expert, I would like to invite **Ms Reema Sahni**. Head, Innovation – Technology Transfer

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Office (i-TTO), IIT Delhi. Second expert that I would like to invite **Dr. Rajababu Vyas**. He is a Professor & Head, Agricultural Microbiology Biofertilizer Project, Agricultural University, Anand. Welcome sir. Our third eminent expert is **Dr. Bijaykumar Sahu**. Very experienced person, Senior Regional Manager National Research Development Corporation NRDC New Delhi. So we have a very eminent experts and we'll talk on the theme academic strategies for accelerating technology transfer and commercialization. So setting up the context of today's talk, I would like to mention the sum of the pillars that normally the Global Innovation index GII that WIPO is declaring every year. So India stood the rank 40 in the last declared rank 2023 it was India was at the place 81 in 2015. So you can imagine in the last ten years what a remarkable achievement in the sector of innovations we have done. And for that the academic institutions is playing a crucial role along with the industry.

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So collaboration is very much important between academia and industry. I will also just brief, not taking much time on the various pillars they are considering while calculating the global innovation index. There are five input pillars. **First is the institutions**, those who are providing regulatory environments. Second pillar **human capital and research** where they are evaluating the quality of education, research and development, investment and availability of the skilled labor. Third input pillar is **infrastructure**. So this pillar will consider the quality of physical infrastructure including crossword communication and energy network. Fourth input pillar is a **market sophistication** and fifth input pillar is a **business sophistication**. So these are the five pillars they are considering while calculating the global innovation index. And here overall rank is 40th. But if you look at the infrastructure wise, the Indian rank is little bit lagging. It is 84th.

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That means we have to do a lot of work in an infrastructure. The output pillars are the creative outcomes. After doing lot of innovation and research, what are the creative outcomes that you are producing and these pillars are basically measures the actual creative results of innovation such as patent, grid marks and design.

So here in a session also we heard that in the last year one lakh patents we have high so that acceleration is already there. But how to change the global environment, global competitions, that is the thought process. That the challenges that we have to deal with and second outcome is basically knowledge and technology outputs that we are producing. So looking into these pillars, I would like to invite our first speaker, **Ms Reema Sahni**, she holds master in life science along with the diploma in intellectual property rights and many, and in many ways she has contributed to empower the oral ecosystem in innovation with a total experience of 14 years. Now I would like to invite madam to focus on the theme and share her knowledge. Welcome madam.

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Ms Reema Sahni, Head, Innovation – Technology Transfer Office (i-TTO), IIT Delhi,
Email: reema.fitt@gmail.com

Very good morning to everyone and thank you so much for giving me this opportunity to contribute towards uplifting innovation ecosystem at GTU. So aligned with the theme, today's theme, research to revenue. So earlier the mandate of any academic institution was publication and slowly and gradually because of robust awareness session, we moved from publication to patent. Now the dire need of today's era, we are slowly and gradually moving towards tech transfer, which is the need of country as well, which is aligned with today's theme as well. So since inaugural session we all are hearing about the transfer. So before jumping into strategies for accelerating technology transfer and

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commercialization, I would like to put some light on what is technology transfer, how it happens, benefits and then I will talk about the strategy. Developer, innovators, startup to the industry. Industry can be MSME, it can be starter as well.



And the, you know, the passionate wants to take it to the next level. It seems very simple process. So it seems very simple subject or process. But believe me, being an IBM DT professional, you need a lot of patience to transfer it in the left and the stakeholders who are involved in this are tech developers, the innovators and the academic institutions, research institutions and on the right side, technology buyer, the industries, MSME startups and the facilitators who are bridging the gap from the technology developer to the industry. These are the facilitation center. It can be IPC,

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cell, technology transfer offices and organizations like Dial and NRDC. So earlier, what was the main it was only the research in the lab and the technology. They hardly see the light of success. To bridge that gap, our government has recognized how to fill it. So they established seven technology transfer offices at the pioneer institution in India and FiTT is one of them. So we are taking care of innovation management, technology transfer, collaboration and taking it to the market. So what gets transferred in the technology transfer? So first is technical information about the technology know how or the performance skill wherein we have not filed any IP, it can also be transferred. The third is IP pattern, trademark, trade secrets, and copyrights. They can also be transferred during technology transfer process and the technical material which can help the innovator in building their technology can also be transferred. So how to take the technology from lab to the market?

So there are two ways. If the, you know, if you think you don't have enough resources to scale up the technology and take it to the market, then you can give this technology to any industry and it can be any big industry, MSME. And even nowadays the startups, they want to increase the IP portfolio and they are passionate towards taking it to the market. They can also be the potential buyer for your technology. And the second is spin off creation. Spin off is the nomenclature which is used for the startups who are formed by the faculty or the student of any academic institution. So nowadays this is very good concept and booming because nowadays our government is, you know, boosting the startup ecosystem. In India at IIT, Delhi is the hub of startups and who are incubated there. And you must have heard about the big drawn show at pre wedding festivities of Ambani. Our startup botlab has done that. So you can see how we are

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moving to this ecosystem. So there are different modes of technology transfer. It is not, it depends upon the innovator, and how they want to go about in the market. But the end product is, and the inspiration and motivation for any innovator is when their technology is used by the customers, the end buyers, and they are happy to use that. So the first one is licensing. It is just like if we are giving our household rent, so we are not giving away our all rights to the industry, we are giving our technology to use by the industry and the ownership will remain with the applicant, it will not go away.

And licensing in return to that academic institution, they will earn revenue in full form of upfront payment, royalty amount or milestones, payment, whatever will be negotiated. And licensing is further divided into in licensing and out licensing. Suppose I am a starter, I'm already working on one technology, but I want to build up or increase my IP portfolio or technology portfolio and I'm taking the technology in, I'm taking it. So it is called the in licensing. Whereas in case of academic institution, if they think they don't have the resources to further scale up and they don't have the supply chain and other resources, so they can give that technology to any potential buyer like industries. So they are giving away the technology. The term is used of license. The second type is assignment. Assignment is like I'm selling out my home, and after that my registry is also transferred and I'm not able to claim that. Likewise, in assignment as well, we give away our all rights to the industry. And after that we don't have any right over our technology. But for the academic institution, it is always recommended, don't give away your future R and D rights to the industry, because after that you can't build your technology or you can do similar kind of work. The third is co-development. When developer and buyer, they come together and work mutually on a one particular

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technology, and then scale up and take it to the market. It is called core development. And the ownership of the rights and the revenue sharing it is negotiated before going into any core development project.

What is the significance of tech transfer? So this is also aligning with today's theme. It is research to revenue. I know for the academic institution, revenue matters. It does not matter to academic institution. The first thing is that because most of the projects are publicly funded, and their main aim is to help our society to uplift their lifestyle in any manner. And the second objective can be revenue generation, because the revenue which will be earned can be used for the further R and D, and to build the infrastructure at the academic institution. And also the most important thing is if inventors are getting something from their hard work, it is motivating factor for the inventors as well.

As our Professor Pandit was saying, nowadays their name can be is publishing on the patent grant certificate as well. So this is motivating for their management. So it helps in fostering innovation ecosystem at any organization. Suppose in chemistry labs, someone has transferred the technology, like Cell has transferred so many technologies. So it is inspiring other labs as well to build that kind of strategy, so that they can also, you know, transfer the technology. And of course it build brand value not only for the organization, but also for the professor and students as well. And nowadays you all are aware in the NIRF ranking. Earlier it was only the grant of pattern publication of pattern. Now they are checking how many commercialization have happened. And that's why IIT Kanpur is at number one for innovation ecosystem. And also from the technology transfer, the innovative product and processes which are coming to the

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market. They help our society to uplift their lifestyle. And in the corona in that period, we all have witnessed how many technologies have come from the start, startups and innovators. Academic institution, the PPE kit is one of the good examples of the same and the innovative masses as well. And if we are creating spin off for running a business, we need other people with different expertise. And this way we are creating employment for others as well.

And last, and these products which we are commercializing, it is always for the improvement of our lives in different manner. So this is the process for technology transfer at any academic institution. So as and when you are ready with your innovation, there is a template which is called invention disclosure form. You can fill the information about your technology and share it with your IP cell. And they can perform patentability assessment and in which they will see if your innovation is novel. It has inventive style and commercial utilization. And most important it should not lie under section three and section four of Indian partnership when they will give you go ahead. Then you can file patent application and also the associated IP for the same technology. Now even the startups or students, they are way smarter than earlier because they know the importance of various IP. Not only the pattern, because it is value addition for your technology. You can also give unique name to your product and file trademark for the same. And also you can hire any product designer and who can work upon look and feel of your technology. And you can file industrial design application for the same. Because if you are pitching and any industry or investor can ask you about the IP portfolio. So it shows the importance of IP portfolio as well. After filing IP you can again take help from the IP and technology transfer office who can perform technology

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assessment for your technology to check the word or the potential of your technology to be absorbed by the industry.

And they check how technically strong your technology is from already existing technologies and what is the IP strength, who are the competitors and how your product can help them to replace the existing is it robust technology or you have made few changes or you have reduced any cost for the same. So this way, and these are not only the steps, the story starts after that. Because from the tick tock we will come to know about the USP and benefit of your technology. And then you have to list down the industry who may hold interest in your technology. Then we start discussing with the industry and then negotiation will happen and the closure of signing of license agreement. So this is the whole process. And sometimes it took me six months to transfer the technology and in some cases it's been one year. We are still in the testing phase because industry if they want to pay you, they will check if your technology is functional or not. So different types of agreements, they play role in the same thing for that we have to sign production evaluation agreement so that the company should not reverse engineer your technology. Now today's topic, what are the challenges which are faced by academic institution during translation of I? The first thing is researchers are still. I'm not talking about the pioneer institution in India. There are other university or the private university I would say who are still struggling with this issue. They are more inclined towards publication of their technology and sometimes it happens with me as well. After publication, inventor came to me and asked about filing patent application. Once you have published, the novelty will be vanished. You can't find patent application processing and if it is in the public, it is in the public domain. Then no industry will pay

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you for getting those knowledge which can be replicated or reverse engineered by other industries as well. The second is lack of novelty searches and patentability assessment which is essential nowadays before because filing patent application is it involves cost and which is time as well. If you are filing it without doing any pre assessment then you may face objection by the indian patent office and maybe your ip may die before grant. So it is always recommended to go through these steps. The third is focus is more on the quantity, not on the quality of IP. It is also the major issue. Sometimes inventors or I should not call this but professors are also telling us okay, we only need the number of the application. So which is not good because these things are public funded. You should take the wise decision. If it is not patentable, you still have time. You can work upon your technology and fill the existing gaps in the society and maybe you will come out with the patentable subject matter and then you can file patent application for the same. The next is success rate of taking the technology from large to the market is less. There is one reason because PhD students are working on their research work. But after submitting of their thesis, their work remains in the books and there is no translation of that work. This is also the one major issue and PhD scholars are paid by government agency for doing, because you know they are getting stipend for the same. But after PhD nothing is done in most of the cases in my time I can say but there are few people who are still pursuing their PhD work. So when I talk to you at arvican solution, they told me that they are getting funding only for the research and development and after that they don't have the funding for prototype building. And truly said by Doctor Manny, for any research work or the translation of that work we need sustained funding and which is very important. So this is also the one of the challenges

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which academic institutions are facing. So the next is we, which is also very important, the low Tr. You know, industries are concerned about the technology readiness level. If the technology is at earlier level, then the risk associated with the technology, if it will work on pilot scale or not are high. So that's why industries are scared to absorb those kind of technology. So this is also the. The main issue. And for academic institution, apart from IITS and IIS is like pioneer institution. They are still lacking in the resources for TRL, how to work on the TRL and take it to the next level. Next is lack of industry and academia collaboration. So if there is no collaboration, there is less chances of technology transfer. But for the engineering students or colleges, I guess they are too fast. And the technology tech showcases like today we are having it here. So it is very important to have these kind of initiatives taken by the academic institution to have collaboration with the industry. This way you can, you know, you can discuss with the industry their pain point. If you know their pain point, you can work around the unmet needs which they are facing. And if you work like that, then the absorption of your technology by the industry will be high. So what are the approaches, so approach and strategies to mitigate these challenges? The first one is continuous awareness session. Not only for IP filing, but filing, you know, to take the quality of IP and also how you can do the technology transfer. So it all can be covered under the innovation management strategy which can be opted by any academic institution.

When I was in Denmark, I found very interesting thing. It is mapping of industries with any invention before filing IP. Here in India we are doing only patentability assessment, only to check the novelty, inventive threat and commercialization utility of any innovation. But in Denmark they are working upon mapping of those technologies with

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the industry who may hold interest in taking it in the future. Is the best example that this way we can increase the percentage of transfer of technology from any academic institution? And next is engagement of inventors with other enablers like investors or any industry partner who can help them in TRL development, who can help them in taking the technology to the other level. And innovators can face any kind of challenge in terms of funding, in terms of any technical expertise. So they can collaborate with those partner who can help them in taking their technology from TRL three to the TRL seven or nine, which is very helpful and which is triggering the rate of transfer of technology from any academic institution. The next, as I mentioned earlier as well we should focus on industry and academia collaboration as well. At the pioneer institution they are regulated conducting or scheduling tech showcase. They are inviting industry in the similar kind of domain and this is the same exercise they are performing for tech transfer as well. Recently we had one tech showcase in IIT Delhi and we got interest from the industry as well and they are ready to scale up the technology and taking it and then is it and technology transfer policy. If inventors are not aware about their rights and they are not aware about the templates and Sops, they want help you in tech transfer because the story starts from because in one of the academic institution I'm working with, inventors are filing iPad in their own way. So the IP policy should be in order and it should be available to all the stakeholders in any academic institution so that they are aware about whenever they are ready with their technology. To whom do they contain, what should be the template? Where should they discuss about the innovation and way forward? And they should know if they will go through the proper channel. The IPO TT office at their organization will help them in tech transfer as well. And after tech transfer

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there is revenue sharing model and it should be well defined in IP and TT policy like 60% or the 50% will be given to the academic institution and 50% will be given to the innovator. Likewise I free academic institution at different kind of any trading model. So this way they will be motivated towards contribution and continuously enhancement of quality of it. So you should be in connect with the industry or you should know about the trends industry trend so that you can keep on evolving your technology. Once the work is done. You should not sit tighter, you should continue your research work, you should talk to the people, you should talk to the people who are working in the same domain and how your technology is lacking behind their technology and what should you do to bridge that gap and how you can make your technology proper. So it should be the continuous process and look for development and advancement study and take help from IP and TT offices and professionals because they know how to deal with the industry and what should be the agreement and towns and closes and also from the previous cases you can learn from your mistakes. Anyone from your organization was failed to transfer the technology, then what were the reasons? What were the risks associated with that and how you can mitigate? And also as I mentioned about the PhD thesis, the professor can invite the postgraduate student and pay stipend from other projects. They can work upon the already, you know PhD students work which is not completed and they can work on the DRLS and take it to the next level they can and this will be win-win situation for both the parties, for the professors and academic institution, and for the post-graduation student as well because they will learn a lot from the previous work and they can build upon that and maybe they can be the street maker in the future. And spin off creation is another way from taking the technology from lab to

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the market. Few faculty member along with their research for can have their startup. And having startup itself is a very good concern because there are so many funding schemes, especially for the startup as well and each of innovation. So you can take help from that and regulatory compliances and validate the risk associated with the technology at the earlier step is very important so that you may not, there should not be any obstacle during transfer of the technology, mostly in case of technology from the domain of medical devices and pharmaceutical. We face these issues because lots of regulatory approvals from CDSU and clinical trials are involved with that. So as and when you are choosing your topic, you should work upon these requirements as well. And of course an annual review on your innovation management strategy is required so that you can improve your examination documents and everything. The awards and designation for the researcher and faculty who are contributing towards huge change in your academic institution and also the flexible working hours for the faculty because they already have so many duties to perform. So we should be very, you know, there should be some kind of relaxation to those innovative. So, okay. Yeah, so I think I time. So I'm concluding here, and the last thing is from the technology transfer we can achieve the objective of Atma Nirbhar. Thank you so much.

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Dr Bijaykumar Sahu, Senior Regional Manager, National Research Development Cooperation (NRDC), New Delhi, Email: bksahu@nrdc.in

Yes, time is most important. So andre ki namaskaram I came from because I'm heading my NRDC operational office.

So topic is quite relevant need of the hour when we talked about innovation, creating value and extracting value and also dream of our founding father, technology self-reliance. The mandate is clear. Aatmanidmarka the mandate is clear for the Nation and the leadership.

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Today we are standing and whenever we are reaching to the ecosystem of global innovation. India is playing a very important role today. On course, if you like to learn for someone else, it will also brighten your path. Learn Buddha and we are in the ecosystem. The ecosystem plays a very important role in bringing academia, industry and that is the largest and also some of the reform today we have seen across the country. So friends, knowledge must be create and knowledge must be managed and knowledge must be acknowledged and knowledge must be translated and that's our mission as a national organization in mitigating the challenge of the society. We have seen the corona, we lost many of our own places, I lost my own brother. But every challenge created opportunity and today and we are also my in law book parentsu at that time we did a technology classroom, technology related to testing, testing and

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feeding on COVID-19 so innovation taking from Ben side to the bad side, technology from lab to the land, technology at mine to the market that's we are playing and we are leveraging, connecting, collaborating and GTU is the first institution called the IPFC from NRDC in 2011. So we have created such momentum and that momentum pushes, we are celebrating the innovation and that's the role of NRTC in the capital. But it doesn't mean that only just connecting the dot but how we are validating, how we are scaling, how we are giving a scope and also how we are giving opportunity and how we are sharing the benefit that's the need of when we talked about as an institution in the national prospect. So I'll be presenting but how to connect, how to collaborate for sponsored research, collaborating research, granting that research and also contract research. Indian university lacks such kind of mechanism and we need to leverage that because some of the institutions are also playing very important role but others must follow and learn from each other. Unfortunate parties did not collaborate what room number one, we number two of. So that is one of the biggest challenges. But let me also tell you how we are doing in a small way taking technology to the market. You can see some of the green technology which are in the market like remote operating viking that was given, we transferred to the LNT and also bell who are part of the indian samudra and part of the deep sea vision of India. So innovation that percolate to the mass and people and we can trust is important and another most important is. So, ow we are connecting, how we are protecting, how we are positioning. Positioning that is important because that's today. Last month we organized the international tech transfer event in collaboration with USPTO. Her Excellency Kathy Gadda was there in Bangalore. I just wanted to show is that trust and belief is important because that collaboration is

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enhancing and also we are doing another program at GTU. I think probably after the election in that similar line where we can participate and celebrate some of the invention. In fact I was requesting chairman I have to go one of the leaders to meet leadership because I came here not only attending this program we are transferring to technology and that technology are also coming another region of the country. I mean of the country.

So that kind of diffusion must be there. Connecting the dot will be important because industry will not come until they will see the belief and trust and also opportunity. They are not running charitable trust. So that's the ecosystem. Because. And we have to understand because in the morning I got education from GTU. I came all the way and I went to GTU for giving such a beautiful hospitality getting Dhokla also my wife called me. The point is that that is the brand. That brand we have to populate. When I went recently to the Geneva at WIPO Green Technology for sustainable development we took indian technology. We took Indian handicraft and presented. Even I presented to director general of WIPO. He was so, so happy because you are remembering Professor Pandit because he saw some of the handicraft. And that is the branding position of our people, our community, our culture, our heritage and that is the monetization of IP as well. So how to do academia industry collaboration. We must talk about our own ecosystem.

Saraswati and Lakshmi. Saraswati and Lakshmi are. We have to live together. You and my mother is a Saraswati. My mother is also a Lakshmi. Because of her she took the loan from various people and she got me education. And you know I came from a very

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humble family. So point I wanted. That is the monetization you said with the knowledge society and that's the bringing of locksmithing. You can see from my presentation how you can connect academia to industry in technology transfer both right and left to me the investor is standing left to be the lady from the MD of heterogeneous biological private industry herself is a lady investor for that technology. And we transfer the technology. The technology. The owner, the lady and also young scholar was standing with me. Although that young. So point is that that is the livelihood and that is the prosperity. How you are taking the technology, the knowledge and taking the technology to the people and also empowering to the women who are innovation.

Let me also tell you in this platform one of my colleagues is today at technology standard meeting at Korea. Another lady is there with the honorable minister. She developed a saline water. You can see in saline water in the seawater. I think my friend is there in Korea. Point is index saline water letter sea water you can get and we transfer this technology and same technology one of the ladies manufacturing in Vijayanagarabad and many of the women are part of that product. Last month we presented to the Honorable Director General of USPTO Cafe at our international. So that is the collaboration how we connect and this is a state the space completely we own the Amul baby food.

I could not cut my mother milk but ultimately this amal baby played an important role in my life. And this is one of the technology transfer NRDC did for the nation and nation building to mitigate the challenge of the people. So coming into the technology and also academic technology transfer this is the technology we transferred to 17 MSME during

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COVID developed by scientists and also we partner with it. We protect the design, we protect the register, the trademark and today we got an affordable, available, adaptable, breathable PPE and that is the mission towards self-reliance on degrees. So friends, GTE is a great institution. I came in 2012 and time to time I have been coming. Some of my good friends are having leadership position. In fact I am going there. That's why I requested you here. So innovation we must not confine to intellectual property. How you are behaving, how you are connecting, how you are collaborating that is also yourself monetizing your institution and you are giving that kind of scope and opportunity. When there is an assessment your institution will get because assessment nobody come and ask you about your university. People are the ambassador and they can take to the next level. So innovation not confined to the patent of design or trademark. Innovation is nothing but how we are leveraging to the people of the various stakeholders in the GTU that you connect and connect in the ecosystem. So how academic technology transfer you can see the AUTM report making the difference to the nation towards self-reliance and this is in the US but on we are not into a collaborative move.

That is one of the challenges because I have some strength, you have some strength. Let's compliment and make the difference and there should be ownership and there should be a benefit share. And that is one of the biggest challenges today in the ice facing a bilateral and multilateral drug, particularly USPTO. The USCR report will come on 29 April. Every year India is getting a position. That position is nothing but India prior to the provision. So being an institution, being a university, you must look into the holistic arrangement of the w two and if we are part of it, we have to sensitize role of India and role of everyone and how India is playing important role in connecting,

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collaborating and celebrating innovation and also taking technology to various levels. IPR is the biggest challenge. Not only at bilateral level, at multilateral level that we have been seeing. But it is very difficult for academic institution. And fortunately we have an IPR policy, an institutional IPR policy. IPRCR has been. I think GTU has also IPRCR. But how we are creating value and. Extracting value is most important. IP is just a piece of paper, it is just a trust. But it doesn't mean that how you are creating royalty. Because infringement, piracy and priority. The biggest challenge for the nation in every institution. Also including some of the university which we are part of it. So legal is legal, law is law. So point I wanted to tell you is that we have to respect the law. We have to leverage the law.

And that only we can post a loyalty and trust. Then we can create the opportunity, an intellectual property we need to bring to the institution. Not for the sake of the faculty awareness. Our students, when they are doing project, when they are doing any kind of study, how they are doing original paper, original project. That is most important kind of mindset. In fact my daughter once told me so. Point is that because that's also created of challenge and how to connect academia industry. You might visit IIT Madras research back to IIT.

IIT Madras there is a breach and the name of the breach. You can see academic industry breach. And that's the role of IIT. Today everyone are celebrating such kind of innovation. And we are privileged to do some of the activities. And we are part of the innovation. The indian Bollywood movie is nothing but a movie that change the mindset about generation. The Funsun, Wangu and Satoramalika.

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The 420 packets. So that is the story how we leverage. And that is also one of the movie talks about plagiarism, violence and also not respecting. And we have seen the. This is between Vidhu, Viro, Chapra and Chattanooga. How much time, sir? Five minute, I think so. Academia industry. Not for only the collaboration industry. Academia industry. One of the commissioner of higher education talked about your GTE because I was there. So point is that how a leader of a department also talks about that we need to access and connect. Because we have to respect the ownership, leverage the royalty and also benefit sharing of that thing. And that's the national IPR policy. And also institutional IPR policy. And that is the guiding by way for everyone in the institution to the respect. We have seen Delhi University high chancellor also part in play arranger. So that is one of the biggest how we are respecting the inventor. Is the effort of the inventor? What kind of benefit sharing he or she is getting that we have to outlive. And also that policy talks about. Because it is a by way it will respect. Right. So friends in that part we are part of the AseAn. Recently I had been doing present India position of public private partnership on innovation management. Also technology transfer. And also my role is also institution to the technology readiness level. Technology maybe you have created and every parents or every parent high about their children. But at the end of the day those children the market may have a way that is also we must have to understand. When we are talking about technology readiness level. We must manage the technology freely of death. Where you will get the fund for leverage. At the end of the day the technology readiness level at the lab is not normally working. But how we are taking into a commercial scale that is the most important. And thats NRDC intervention. And also support up to two crore rupees under the technology

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development validation of commercialization program. So I think so technology you have but market may not be ready. So we need a market readiness level. Market may be ready business clock and in a manner be ready. We have to create that kind of business readiness level may be business ready. Society is not ready. Suppose or suppose if I have come and make those so point is that we have to make it.

Then only we can take the technology to the market. And we have a technology readiness level assessment. We do valuation of the technology of the NeSA institution. We collaborate with CSR. Our secretary Kalai Selvi recently inaugurated that. And we need certification of the technology. So that tomorrow third party can and also respect. So we are part of the USPTO collaboration.

Madam dkpto the reddy herself is here. We have a Mou with DkPTO and we are part of the Wipo team. Recently we have been to the WIPO brain to showcase indian technology. And also part of the ASEAN framework on innovation. How we can take the challenge of indian control to create ASEAN region. Because all are from a very same region. Same challenges same. So let's connect, collaborate and mitigate the challenge. In India also established Indian Technology Demonstration Center NRDC. Particularly in various countries. Taking indian technology indian importance indian product. And one of the beautiful example is Dhana. Dhana was importing 50 90% tomato. But India plays a very important role in growing up tomato. Taking indian entrepreneur indian variety from the IRI and connecting the many technology and transfer that you can see. And also support to the start of protection of intellectual property is very very important and also how to connect, how to negotiate is most important.

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When we are transferring any technology you can see I was in on that day that was I was recovering from coal and we are transferring one technology to another company. In fact the company the CEO was not coming with mask. This is the light. So let's embrace and also mitigate and connect, collaborate and support one of the beautiful technology I will say recycling the first thing and you know this technology will transfer you can see the type that can be useful and will transfer to I think seven, eight startup and MSME in the country. One of the very interesting story I wanted to tell you one of the startup for Nascon startup award this year only from the government of India and that is for the robot technology and because time come over these are some of the techniques how we reach out to players, to the community and also rural entrepreneur and we are part of the WIPO so that we have to showcase indian technology so that we can have an international technology transfer and that we have done in many ways in connecting the dot, reaching out to industry, reaching out to MSME, reaching out to the various industry stakeholders and also taking technology in the global platform digitally and WIPO greed and mitigating the challenge of the society connecting to the women towards entrepreneurship and also getting confident the women towards entrepreneurship and we have respect to the women towards their efforts and some of the women are making us proud of their innovation and that's the visibility and that's the collaboration and that's the effort and that's the nitty gritty of the today economy. The economy we are talking about knowledge economy we have to respect the knowledge, leverage the knowledge and also translate the knowledge. That's the role of India. That's the role of NRTC India.

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So friends, the problem is never how to get a new innovative thought into our mind but how to get the old one out. We change our mindset as for the demand of time because there is a momentum, there is an ecosystem and we have to celebrate the innovation and put in the dream of our founding Mahatma Gandhi self-reliant and that is the dream of our prime minister for the Nation and SMB. Thank you all of you. God bless you joining.



Moderator: Prof. (Dr.) S.D. Panchal, Director, GSET-GTU

Thank you very much sir for your excitement talk now I would like to request **Dr Rajababu Vyas** to share his thoughts.

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Dr Rajababu Vyas, Professor & Head, Agricultural Microbiology Biofertilizer Project,
Agricultural University, Anand

Email: rvvyas@aau.in

The earlier speaker has made my task very easy. Madam has given excellent detail how to go ahead. The NRTC representative Sahooji has given you detail about success at national level. I will only talk about Gujarat. I am of another field agriculture. So in agriculture sector what we do and what we have achieved into decade in Gujarat. All these things we have already done in Gujarat and that I am showcasing you in the best possible way. So public private partnership that is our slogan. With that we started business planning and development unit at Anand Agriculture University. And PPP was our main slogan. With that we started at that time. In 2010 government of India and government of Gujarat said go ahead with the PPP. So we started with this log and PPP. But for PPP what was the role that we defined. And accordingly we went ahead. In first talk madam told lap to lab second top we have been told that people should got interest in your technology. And for that you have to go outside the lab. You have to showcase your technology. And then only public private partnership is possible. So this is our popular slogan how to go ahead success and finally profit. And this is a special picture one artist has drawn at Anand. And that keeps we have put in as our logo of our business planning and development unit. And this is the technology basket which I have started in 2010 with the Burbank project. This remains the most important technology and success story is there of liquid biofertilizer technology versus multinational pressure

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in agriculture sector. Till today we are backing for fertilizer internationally. And we are paying just 130 lakh crore rupees internationally as well as in house subsidy to farmers. So see our tax money. 30% of tax money goes in fertilizer industry. And for that we need some indigenous solution. And that we have developed and promoted. These are some of the dairy technology and probiotics.



We have sold our probiotics in Kerala. We have sold our probiotics in our Bihar Milma deli Sudha dairy. And we have motivated them come towards the Gujarat. Have the technical money from us. Then biodiesel. Of course 50 50 market is there. But the technology basically we developed at Anand Agriculture University and promoted then seed the biggest business in the world. The Ghana storage. You have read the seed

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which has gone from India to Ghana has made changes, big changes in that small country in Africa. So seed business. Fortunately my university and we are having our own brand. We are manufacturer. We are not only teacher and scientists. We have eight technology plants. And we are manufacturing all different seeds selling to the farmers. And our product brand name is Anub Bhav.

This is the tissue culture technology. When our Prime Minister Modi brought Prime Minister to Ahmedabad four years before I showed them sir with a very politely I said, sir, today we are importing tissue culture of date farm from your country. We are paying rs3000. My farmers are paying rs3000. We have developed technology, just rs1500, half the cost. Then this ice cream provided for senior citizen like me. Ice cream and so many equipment and machinery for the farmers. So they can have that small machinery at that farmhouse and they can work. So these are the four plant. We have specific mineral mixture, biology result all dairy products making small dairy as well as liquid. So this four plant we started with the support of World bank in 2010 onwards. And now these four plants are producing products and we are earning from this as Anubo branded products. So now I will go in depth of my own technology. There is liquid biofertilizer. So we went lab to land, transfer of technology and public private partnership. All the three milestones we have achieved in make in India in last two decades.

So when this article came in the newspaper, one lakh crore fertilizers invested in India. Then we started and this is the data you can see in the chemical fertilizer. The growth is not up to the mark. We were starving. We were searching food in country. We were not

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self sufficient at that time in nineties. So we need some indigenous technology like bio fertilizer. So many benefits are there. But I will show you some pictures. You can see in the previous picture 50% fertilizer is cut down which is not important and subsidy is not given. So lot of money has been saved with a very small bottle of bio fertilizer which is costing rs60. You can see our lab to lab. Every year 200 farmers. We are targeting especially tribal area and we are providing them the product. We are demonstrating that at their farm. So other farmers are taking interest in that. Slowly all industry who have taken and the technology are also earning from that. So left to land is very very important. This is the protocol of production. Impact of biofertilizer is self reliance in the country. And Atman yogurt Bharatapia that you have sold. This is my own bio fertilizer plant. I am a scientist, I am a teacher, I am a CEO of this plant. I am a producer. And this is my bottling unit. This is my R and D lab to support my research. Unfortunately when Modi was here in Gujarat as a chief minister he became the brand ambassador of this product. He said, we want to fight against multi Leishnar. We don't want fertilizer, we want indigenous product. And you see, I show you two pictures. First picture of Gandhiji. Second is Modiji. Both is taking interest in research IPR and technology. See microscope. So you have to nurture the soil for future generation. We have to promote bio fertilizer and reduce cost of cultivation. And these are all state, different state farmers. We are calling it here at Gujarat we are showcasing our technology and they are buying from us. And then they are taking the message to their states. And this is the patent which got published in NRDC journal.

But unfortunately patent is not granted to me. They say oh you are doing business. No you will not be given patent. I said thank you sir. But these are eleven my company

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partners. Eleven partnering company. GSFC Gujarat Agaram. You may have heard the name. Even your Ahmedabad Municipality Corporation is my partnering company. The piranha waste they are now segregating the waste in organic matter, plastic and other waste. So in organic matter they are fortifying with biofertilizer. And that fortified product they are using in 200 gardens of Ahmedabad municipal. So your city Ahmedabad itself is my customer. And recently now I have targeted cooperative sector. Amul dairy and banas dairy. Both are my partner. Both has taken the technology. Now they have their own plant. They are manufacturing and providing to their stakeholders. Because thousands of farmers are member of cooperative degrees. So state farm going to the farmers hand. Because of this intermediate companies. This is the future of biofertilizer. Globally people want organic food.

You can see the growth is expected of this particular product is 4.2 billion in 2027. So future is there. So now I am looking for international partner. Of course african countries have contacted. But I am finding the way because agro Innovate Company Limited a separate company like NRDC is there in Delhi which is looking after all agricultural technology commercialization. So I may take their help and I will go to african countries now. And this is the thing which today we are doing technology transfer research to revenue meet. We did for industry meet. I think it was 2012. We called upon industry of Gujarat as well as Maharashtra and we showcased our all technology. And these are the partnering industry with me or almost more than 50 industry are partnered right now with me with my business planning and development. So that is our great achievement. Whatever we do new they are our customer ready customers. So that type of customer base is to be prepared by GT. And this is the Mou licensing of Gujarat agrarian. And this

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is your Ahmedabad municipality plant. And the product is bio gold of Ahmedabad municipality phone. Then I targeted indoor municipality. Indoor municipality. The swarch city of the country. Indoor municipality has also Miu some young entrepreneurs. Young girl is now CEO of a bio fertilizer company. She is just 23. You can see our agriculture minister taking interest.

So many chemical producing fertilizer company. We have tried to convert that mindset coming towards this environmental friendly and natural technology in house indigenous technology. And this is the showcasing to Israel partners. And we also got lot of coverage in times of India. We got JP Morgan award Times of India. And it was given by Colonel Mukherjee ji at Delhi. Even nearby state is also taking note of our agriculture sector technology transfer thing in Marathi. I don't read Marathi well. But something good has been written about us. And this is the humble story. I can say the CEO of Amul, chairman of Amul and NDDP. All have released the product last year and very recently this Banach day. Yes. So our university has a formula. Out of whatever money we are earning. 60% goes to San frit. 30% university corpus fund and 10% goes to other activities. So this is the formula our university management has decided. So scientists get maximum benefit out of this. And this is the product released on the 15 January by Banast Delhi for north Gujarat and Rajasthan farmer by hand of our chief minister Upendraji. And this is all our partnering MoU. Mainly we did majority of MoU during the vibrant majority. Majority of MoU at vibrant Buddha. I will show you some of the consultancy service related our experiences. This was all PPP. Now consultancy. See the Maharashtra company which was exporting chicken internationally. They were facing problem. So they came to us. Or one of the veterinary. I think your biotech head

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is aware of him. And he's right now looking after Gujarat biotechnology. Chetanya, Josie. I spared his services. I said, chaitanya, go to Nasik. Solve their problem. They gave us just two lakh rupees. But we were happy. We have solved the problem and the chicken has got exported internationally. India is earning mainly to serve the society or give something to the society. Second is a dairy. It's a small, small dairy. I can say farm is there nearby. Anand, that husband and wife are not much learned. But they were preparing paneer and selling only paneer. No milk. They came to us said sir, what to do? He said okay. I send our expert of dairy technology. He has increased his paneer from 12% to 18% by making small changes in him. How much we can pay? I said, whatever you want to pay, you can pay. But you have to pay. Then he gave us just rs25,000. But today since last ten years daily getting 6% more paneer than he is earning last is our dairy Panjambar dairy. They wanted to launch Gulab Jammu versus Amur. I said we Amul is our tax door. Never how we can give. Then also we give the technology. And now Panchamru dairy Gulab Jambu is in market competitive to Amur. So this is all we need. And because of this scientist as I said we got many awards. Of course my team and myself Moditi himself has given the award. So this is the advantage of scientists. You get the award. See Kasturi Ramani first mo internationally done from India by Kasturi ran when he was head of Israel at Ahmedabad. It was of 200 crore rupees Moe first biggest Moe missile. Some of the component of the missile it was by when I was taking the aurman he said ah. He talked to Mitni Gujarati. He is the prime minister personal scientific adviser. He said oh I am very happy. You started this activity. You know I did the mob for 30 years and World bank director India he gave me appreciation. So this I'll be achievement of a scientist in his career. If you do something

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out of the college, go to lab, come out of the lab, go to lab, and go to work. Then our some of the startup has also got the award. Nabar award another award. Even sir summit and advantage of the university is getting name and fame. Our one company crypto is selling bio fertilizer in 18 states. On every bottle of crypto.

Anand Agriculture university technology our name is going on Amul. Amul Brand is associated with Anand Agriculture University. Amur organics, biofertilizer, foot line technology of Anand Agriculture University get lot of fame even financial support name in newspaper. And finally our aim is to serve the public. I am a senior citizen anytime I may pass away. But whatever the technology I have given to society remain liar for years. That is the advantage of PPP. So my request to all the young people who have achieved the patent for whatever the fantastic work you have done scientifically and you have something in your hand give it to public and you will get blessing also. Yeah. And this is the product of different company which is right now in the market. And fortunately I am not to say but GTU and EU were in competition for getting Uttal innovation award. I was on fourth and Navin Seth was on fifth. Your previous lifestyle and these are some of the books we have published in there. We have narrated our experiences. You can read any time. And fortunately the recent our idea of the government is doubling the farmer income. And that was released by our governor of Gujarat Acharya Devrachi. And this is some information which is readily available on NaT. You can if you can remember at least my name, Rajawaboo Gyas, you can go to YouTube or Google. You will get all this information. My experience is available in Google also. So with this I will end my talk here. But I can say success is always there if you work hard. Thank you.

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So thank you very much. All the experts, they have shared much knowledge and also shared their experiences. There are so many dots we have collected, but now it is about our objective, how to connect them. So with this we are concluding these sessions. Thank you very much too all the experts for spending your valuable time. Thank you.



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The 2nd session of the summit started with the welcome and introduction of the speakers by Prof. Pankajray Patel, Director, Graduate School of Management, GTU and by Dr. Rajesh Thakker, Director, Research and Development Cell, GTU.

Dr. Louise Boisen, Counsellor, Intellectual Property Rights, Royal Danish Embassy, New Delhi has expressed her views on IP Rights and its significance for Denmark and other countries. She pointed the need for technology collaboration among nations of mutual interest. She stressed upon the need to innovate for society at large and congratulate the Gujarat Technological University for organizing an event full of information on Technology Transfer.

Mr. Sanjay Patel, Patent Attorney, Excellon IP has explained the process of innovation to commercial use of technology in a very interesting and enriching way. He explicitly call upon the innovators to think at grass root problems of the society and find their solutions as a feasible commercial product for a win-win call for all.

Dr. Omkar Acharya, Executive Director, H K Acharya & Company has explained the process of licensing the patent, in a very comprehensive and detailed manner and put light on the legal aspect related to the technology transfer deals which need to be taken care by all inventors while making such agreements.

Mr. Anil Pandey, Head, IPFC, Setup by MSME, GOI, Confederation of Indian Industry has presented few remarkable case studies and use cases of the innovations from various parts of the society which has made a significant impact on the society at large which are very inspiring for the budding innovators.

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Finally, the second session ended with the concluding remarks by Prof. Pankajray Patel, Director, Graduate School of Management, GTU.

The **Panel Discussion session** was initiated and moderated by Dr. Sanjay Chauhan, Professor, Graduate School of Pharmacy and Coordinator of Technology Transfer Summit 2024. He floated a question to Dr Rajababu Vyas, Professor & Head, Agricultural Microbiology Biofertilizer Project, Agricultural University, Anand about what should be a mindset for developing a technology that can be transferred for revenue generation? Dr. Rajababu emphasized on selecting a research area addressing a solution to an unmet problem of the society.

Second question floated by Dr. Chauhan was to Ms. Reema Sahni, Head, Innovation – Technology Transfer Office (i-TTO), IIT Delhi about what are the parameters used to evaluate the technology that can be transferred? Ms. Reema highlighted various parameters that are considered during evaluation. She highlighted what to disclose and what not to disclose during the presentation of any innovative study undertaken.

Dr. Chauhan floated third question to Mr. Anil Pandey, Head, IPFC, Setup by MSME, GOI, Confederation of Indian Industry about how the academia can address the industrial needs and commercial aspects for development and transfer of technology? Mr. Pandey emphasized on legal challenges to be addressed to have confidence building to have industrial research that can be commercialized. Industrial personnel may be invited to have informal discussions at academic institutions.

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Next question floated by Dr. Chauhan to Mr. Sanjay Patel was about the technology readiness level that is appropriate to transfer. Mr. Sanjay narrated with various possible approaches that can be used to promote your innovation to create interest to the buyer for your innovation. He emphasized that unless commercialized, the IP is a monetary burden to the holder to maintain the IP. Dr. Rajababu highlighted the contribution of Vibrant Gujarat Summits in reducing the gap between industry and academia. Ms. Reema highlighted the industrial sponsored projects at IITs. Three technologies were successfully transferred during the event from the technology showcase of 56 innovations. Dr. Chauhan opened the session for questions from participants. Finally, the session was concluded with thanks to the panelists by Dr. Chauhan.

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Feedback of Technology Transfer Summit 2024

Feedback from the summit participants was collected at the conclusion of the event. When queried about the relevance of the topics discussed, the overwhelming majority of respondents indicated agreement, with many expressing strong agreement. Similarly, in regard to the organization and utility of summit presentations, nearly all participants expressed strong agreement. Feedback regarding the overall learning experience yielded responses predominantly in the strong agreement and agreement categories, indicating a consensus on the usefulness of the knowledge gained. Furthermore, all participants unanimously acknowledged the expertise of the presenters, affirming their knowledge and competence in their respective fields. This feedback underscores the success of the summit in addressing pertinent topics, delivering well-structured presentations, and providing a valuable learning experience for all attendees.

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Feedback Technology Transfer Summit-2024

