SPORT SCIENCE & MEDICINE (including BIOMECHANICS) and PHYSICAL EDUCATION: JAPAN SPORT EXPERTS-CONTINUING INDIA PROJECTS

(December 6th to 12th, 2017)

A GENERALIZED REPORT – **To STAKEHOLDERS** (Japan and India)

BACKGROUND

The 4th Business Trip/PROJECT (Prof. Randeep Rakwal, TIAS, University of Tsukuba, UT) **to India** was the outcome of the **previous 3 fruitful academic and scientific exchanges** between TIAS (UT) on holistic sharing of SPORT and OLYMPIC STUDIES-related knowledge by the **Japan Sport Experts both from TIAS-TAIIKU-UT Faculty (and also Nippon Sports Science University (NSSU) as part of the SFT-Tri University Cooperation,** *and the SHOWCASE Conference held on Dec 14th, later in Dec, 2018 to highlight the importance of cooperation and networking*), therein.

- But, briefly, to summarize, the previous aims and outcomes of 2017 India-Projects (Business Trips form TIAS), they are as follows: **a)** Spreading the **TIAS educational legacy program** (Professors, Modules, Research and Activities therein), University of Tsukuba, and the OLYMPIC MOVEMENT/OLYMPISM to wide range of participants; **b)** obtaining Student's **Internships** (2nd Batch, & IDS program); **c)** application for **TIAS Master's program** (3rd Batch); **d)** Identifying **Guest Speakers** for Sports Science and Medicine, Olympic-Paralympic Education, Olympism, SDP, and NGOs; **e)** Identifying areas of **further cooperation** with SAI-(Ministry of Youth Affairs and Sports, Government of India) NS-NIS and LNIPE and follow up on **COACHING CERTIFICATE TRAINING (Football)** and **HIGH-PERFORMANCE SCIENCE CENTER (Swimming)** and Pre-Olympic Training Camp discussions with Ibaraki Prefectural Government (**Joso City** submitted a proposal to the **Embassy of India**, The Ambassador of India to Japan, **H.E. Mr. Sujan R. Chinoy**) and UT, and **f)** signing of **LETTER OF INTENTS with SAI and LNIPE**. In regards to the LOIs, post-signing, now we are progressing towards the MOUs finalization and signing.
- The translation and sharing of knowledge in SPORTS as a whole is also a part of the **TIAS ACADEMIC LEGACY**; i.e., **developing projects and continuing them till Tokyo2020 and with an impact down the road Beyond 2020**.

Thank you Japan Sports Agency (International Affairs Division; Fujimoto san and Aya san) and Thank you Embassy of India (Dr. Rupal, Counsellor, S&T, and Sport)

- As it was mentioned in the previous reports, **2017 is the KEY YEAR** for the first-steps forward, as also designated under the "The Year of Japan-India Friendly Exchanges".

To be able to continue these initiatives, I express my sincere thanks to TIAS-University of Tsukuba, **Prof. Sanada, Chairman of TIAS, JSA, and the Indian counterpart SAI**; and where the great support from a 2nd Batch TIAs student, and who is also the AD (Assistant Director) of SAI, Mr. Manikant Sharma is also appreciated; and finally starting with December 2017 with Profs. Ae and Okade (NSSU) and Asst. Prof. Kinoshita (The University of Tokyo) support to India projects. **International Team Work is KEY to SUCCESS**.

The Current Business Trip, undertaken by Prof. Randeep Rakwal (also serving to coordinate various Japan-India projects, including as part of networking with NSSU, under the SFT-Tri-University cooperation) at two different locations, of North India, i) **SAICON2017 Sports Science and Medicine International Conference in New Delhi**, and ii) discussions/meetings on the SPORTS SCIENCE and COACHING programs to be developed at **NS-NIS, Patiala**, including follow-up of the previous coach training programs. **Thank you once again Prof. Ae and Prof. Okade. Thank you too Dr. Kinoshita.**

DAY to DAY ACTIVITIES

1. MAJOR WORKS 1

2017, Dec. 7th to 9th : The CONFERENCE (1,000 Delegates)

Starting on the previous night, 6th December, I had discussion with Mr. Manikant Sharma, AD-SAI on the 5-day plan for India projects, starting with SAICON2017 (7th to 9th) and meetings with various organizational heads (including SAI, Director General and Sec. Sports (MYAS), DDG, and Director of NADA, and Executive Director of NS-NIS, and Dean Sports Sciences, and Principal and Regional Director of LNCPE (for Physical Education curriculum) during the coming days. The next day was the start of the **International Conference-1st SAICON2017** in New Delhi, India.

The **Conference** started with the opening by the **Minister of State for Youth Affairs and Sports, Col. Rajyavardhan Rathore** (Retd.), who is an OLYMPIAN – **As a shooter, competing in the double trap event, he won a silver medal in the 2004 Olympic Games (Athens)** – who impressed upon the idea of **SPORTS SCIENCE** as a key factor behind developing the **ATHLETES of tomorrow**. He was joined on the podium by prominent OLYMPIANS

to support the cause for development of Indian SPORT.

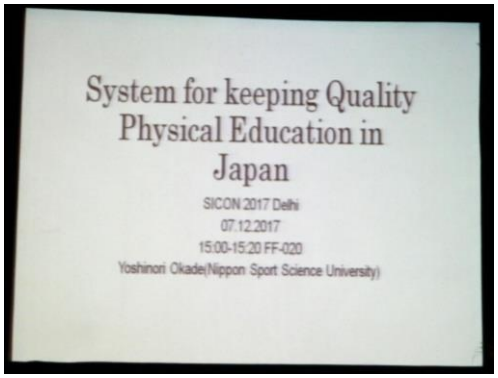
The **Book of ABSTRACTS** was also presented as a **SOUVENIOR** to the participants so as to remember and share the accumulated knowledge.

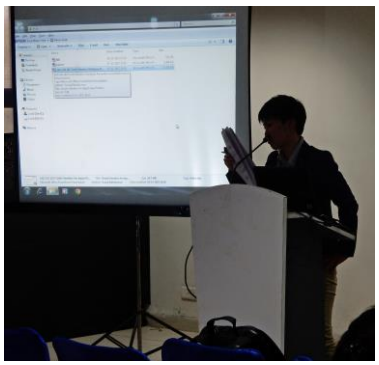
Minister of State for Youth Affairs and Sports, Col. Rajyavardhan Rathore (third from left)

Minister of State for Youth Affairs and Sports, Col. Rajyavardhan Rathore (second from left; DG, SAI, third from left; Olympians on the right)

Keynotes by famous sports scientists from India and then around the world, were the day's events, followed by discussions. I (Randeep Rakwal, along with **Prof. Ae (NSSU), Chairperson of Session 1)** was the **vice-chairperson of the 1st Day SCIENTIFIC sessions**. **Dr. Okade (NSSU)** and **Dr. Kinoshita (University of Tokyo)** were my Japanese colleagues joining the Conference.

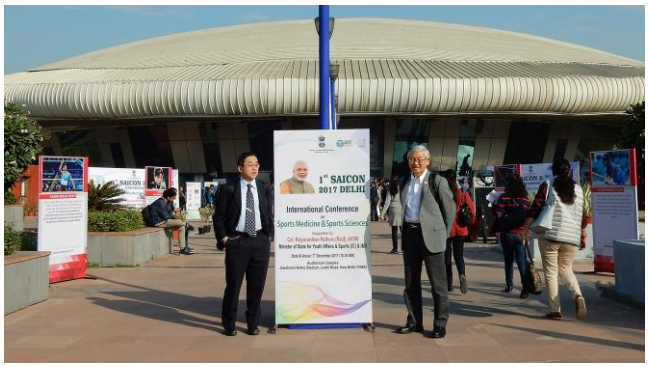
(Prof. Okade, Dr. Kinoshita, Prof. Ae)

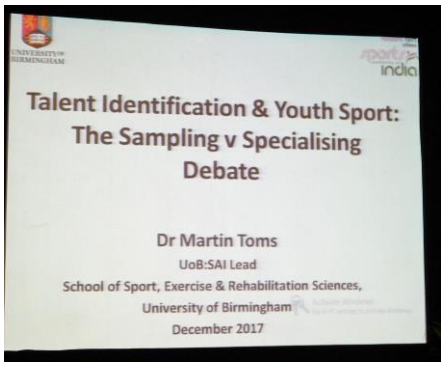





The following 2 days were spent in listening to various lectures and meeting with the sport scientists from SAI, India and globally (UK, South Africa, Italy, Norway, Germany, Malaysia)-a great networking chance and also to introduce the TIAS MA program and SFT to International Sport Scientists. I (and **my colleagues**) was presented the Certificate of **Recognition for the Contribution** to the Conference in Delhi, which I am happy to display in my office in GSI403, University of Tsukuba.

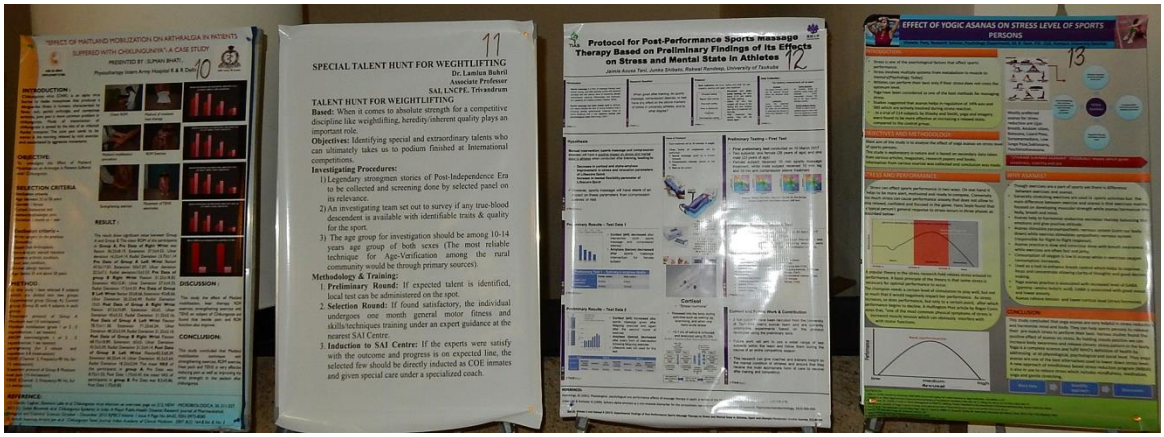
Meetings with Dr. PSM Chandran, Secretary, SAICON2017 and Manikant Sharma





Another important contribution was a POSTER PRESENTATION- As part of the TIAS 2nd Batch Student (Ms. Jaimie A. Tani, who was not present but represented by myself) Research being supervised by myself and Prof. Nishiyasu, Head, **Sports Science and Medicine** module. The RESEARCH was well received by the participants who were impressed by the details of such an

experiment focusing on the sports massage therapy for ATHLETES.



This was also an opportunity to discuss new potential collaborations with sports scientists from SAI, others, and physiotherapists, including the use of Yoga-based therapy for athlete high performance and endurance. Personally, a good interaction and networking with Sports Scientists from SAI and India and Globally, and I would like to see the SAICON2017 develop into a movement for change in sports sciences and sports education, with more concrete collaborations and sharing of knowledge, for the athletes and coaches in India. Here Japanese Sport Universities can play an important role, by not only having **"Japan Sport Experts"** provide expertise to India at various levels but also the bigger opportunity for younger (budding) Japanese Sports researchers and graduate students to learn from the experience of working together with Indian counterparts; i.e., it is a good learning experience early on in their careers.

MINOR WORKS 2

2017, Dec. 7th to 9th : The MEETINGS/DISCUSSIONS

An important **highlight** was meetings with the **Director General of SAI (Shri. Rahul Bhatnagar, MYAS, GoI)** and the top leadership on the current state of the INDIA-JAPAN Projects (under the LOIs and MOUs with both NSSU and UT-in progress)

This continues the process started in Feb 2017, when we visited SAI HQ under the leadership of **Prof. Sanada**, and met with the then Sec. Sports and DG, SAI, **Mr. Injeti Srinivas**, and in July 2017, when the Indian delegation visited Japan. From the **TIAS perspective**, it sets the stage for a **SUSTAINABLE ACADEMIC LEGACY**. From **NSSU perspective**, it initiates the process of **Future Collaborations**, starting with this first visit to both Delhi (Prof. Ae and Prof. Okade) and followed by NS-NIS (Prof. Ae), as part of the signed MOUs.

Indian-side (SAI) delegation

Japanese-side (NSSU and UT) delegation

The main points was: that both sides (countries) have established good relations and that now a **ROAD MAP** is required to be created (as also desired by the Embassy of

Japan, in India) to step up the cooperation between SAI and the two Japanese Universities. The DG(SAI) mentioned that the establishment of two separate Centers for Science and Coaching (National Center for Sport Science Research, NCSSR; and National Center for Coaching Research, NCCR) by SAI, will require the support (hand-holding) of both NSSU and UT in terms of infrastructure (equipment's input, design, layout, etc.) and course curriculum (Faculty) for future Degree programs. The request was for the "concrete and specific" support at these areas by both universities', and who specifically to invite (as experts-Professors) from NSSU and UT. Also, the question of distance learning/e-learning was discussed. The next steps were to be discussed and presented to the DDG, SAI, Mr. Sandip Pradhan and Dr. S.S. Roy ED of NS-NIS and also the Director of NADA Mr. Navin Agrawal (and VC, designate of the new and upcoming Sports University in Imphal, Manipur-North East India); and on the aspects of Physical Education with Dr. G. Kishore, LNCPE.

This followed by a meeting with **NADA**, and the main point was the development of the new Sports Science University, and the possible support by both Universities on Instrumentation, Human Resources, and Academic Programs. Prof. Ae mentioned about the importance of Coach minded Scientists and Scientists-Coaches; dual benefit of coach and teacher. "Some NSSU professors could serve as good role models". Prof. Okade mentioned about Teacher-Student ratio and lecturing time and regulation of staff time is very important for efficiency. A follow-up on the course curriculum and other aspects of the support (sport technology, infrastructure, faculty mentoring, etc.) was considered.

NADA meeting (center, Mr. N. Agrawal, Director)

MINOR WORKS 2

2017, Dec. 7th to 9th : The PE MEETING with LNCPE, Trivandrum

The meeting was: carried out on aspects of Physical Education and the Curriculum between the TEAM led by with Dr. G. Kishore, Principal and Regional Director, SAI-LNCPE and Prof. Okade of NSSU and joined together by Prof. Ae; and myself as a non-expert on this subject. The LNCPE has 12 faculty members and the UG course has Bachelor's in PEd and PG course has Master's in Ped; and then MPhil followed by PhD. Revision of the course curriculum is being planned by the committee for a Basic Degree Course + 1-year Teachers Education Course.; to be innovative – Theory/Practical/Teaching/Coaching, and field experience; so syllabus modifications are needed. Prof. Okade mentioned about the 5-year course. Further the 2-times field

experience in the 3rd year and the 5th year possibility. In Japan there is the 4-year B.PE course in Universities. These require a high degree of standards and especially in the PE. Japan has developed the standards. For the future job, the issue is the same everywhere, in Japan, the graduates have to pass the recruitment exam for being PE Teachers, and it is under each Prefecture (i.e., equivalent to State in India). Moreover, the students have to go through 4 years in different schools. **Critical Thinking** is an important/critical aspect of the education. Certification is another point, and the Government controls the System-the Exam. In the field of PE, there are a number of steps; and same requirement for all courses: Knowledge and Society-contribution to. Future visit by Prof. Okade to LNCPE was desired and continue knowledge exchange.

2. MAJOR WORKS 2

2017, Dec. 10th and 11th : NS-NIS, Patiala, Punjab (met around 50 people)

The last one and half day was spent at **NS-NIS, Patiala, the premier National Institute of Sport, in Punjab state of India**. From the Japanese delegation, there were only 2 persons, Prof. Ae (NSSU) and myself (Randeep) to undertake the trip to the NS-NIS, in Patiala, around 6 hours' drive from Delhi towards the North, in the state of Punjab. Other than follow-up on the previous visit and programs in Feb 2017 (by TIAS delegation), it was also an opportunity to have **Prof. Ae, an expert on Sport Sciences (BIOMECHANICS)** to personally have a site/field visit to this sports science institute to observe the facilities, and sports science set-ups, in particular biomechanics lab, and also interact with the sport scientists therein. The kind invitation by the **Executive Director (NS-NIS), Dr. S.S. Roy** to visit the institute is greatly appreciated, and the great welcome and hospitality by **Dean, Sport Sciences at NS-NIS, Dr. Rajdeep Kaur** is much appreciated (being a Sunday on the day of arrival). The Handball and Fencing Head Coaches are also greatly appreciated.

(Dr. Rajdeep Kaur, Prof. Ae-presenting)

(Dr. SS Roy, ED-NS-NIS and Prof. Ae)

The discussions started with a **pre-lunch meeting (10th)** with the Dean, Dr. Kaur on the Course (Sport Science) structure between Japan and India. "Coaches are very good in performance but not academically strong in India". The mention of the start of the courses in NS-NIS was informed following up on the Delhi meetings; and that courses will have the Foreign Faculty at NS-NIS. The topic was how to develop the Sports Science and Coaching courses to a higher level…Was it to follow the Japan model? As has been the choice from the former DG Mr. Srinivas, following the 2017 visit to Japan. The point was to help see and provide inputs to the sports science and sports coaching 3-year Degree program (Bachelors) at both General and Honors levels. They would be part of the 2 centers – NCSSR (National Center for Sport Science Research) and NCCR (National Center for Coaching Research).

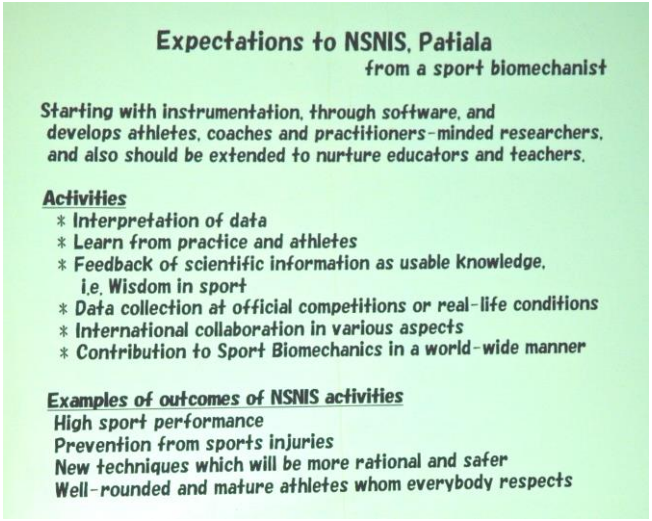
Post-lunch, the **first meeting started at 3:30 PM,** with Dr. Rajdeep Kaur and Senior Scientists and Research Officers of the Faculty of Sport Sciences (NS-NIS) in the Conference Room of the Main Guest House (for distinguished Guests). Dr. G.L. Khanna, previously known to us at University Tsukuba for the Tsukuba Summer Institute program, and now Consultant with the SAI (Delhi) was also present at the meeting.

Prof. Ae was welcomed as a Biomechanics Expert from NSSU and me from Tsukuba (TIAS) and working since 2017 with SAI/NS-NIS for a 'number of program of activities' between Japan and India, which is an honor and great responsibility. The agenda of the meeting was laid out by **Dr. Rajdeep Kaur**, as to listen/hear from Prof. Ae today (10th) and tomorrow (11th) and to describe and introduce the Sport Sciences Faculty by herself and discuss the activities therein towards establishment of the new centers and degree programs.

Prof. Ae started with explaining the background on NSSU (high performing Athletes and success at the Olympics-Paralympics, and value and contribution of sports sciences) and the previous visits by the Indian delegation in 2017, and one phrase

stands out **"Athlete-minded Practitioner"** in the setting of a strong sport science center and towards high performance in sport by the athletes. All disciplines are required and should be taught in Sports University too. Prof. Ae mentioned about his books / journal for coaches and athletes and how it is important to communicate the science to the athletes and coaches and to work together. In sports versus physics: it the use of or application of obtained data, which is important. NS-NIS scientists mention that they are "impressed by the far-sightedness "looking ahead" of Prof. Ae". Prof. Ae went on to explain the **"SPORT SCIENCE STRUCTURE"** by using the white Board, by explaining where each "coaching science – applied science – nutrition – sport medicine-physiology-psychology – and philosophy stand in the PYRAMID structure. Another key phrase worth noting form Prof. Ae was **"The Mind of the Teacher"** for coaches.

Multiple questions and discussions followed on the nature of the proposed 3-year degree program at NS-NIS, and on the Honors (specialization) and Prof. Ae mentioned "we have to know all (subjects) to apply it as the competitions needs all"; "Coach as an Educator"; and "Coaching is Education". **Prof. Ae also presented a SLIDE (below) on his EXPECTATIONS.**



Finally, to the end of this meeting, by explaining the area (268 acres) and the Sports Science Faculty, how many members (exercise physiology-6, the most), teaching loads, achievements of the scientists; and the plan for the NCSSR, which is in motion (and also Prof. Ae and I have been requested to give our inputs on it), building design, basic labs, specialized labs, etc. I (Randeep) talked about the importance of doing research projects for degree course students and also involvement of the Scientists to help facilitate them as the NS-NIS has an excellent resource of athletes and coaches to develop new research and apply it as Prof. Ae has nicely elaborated.

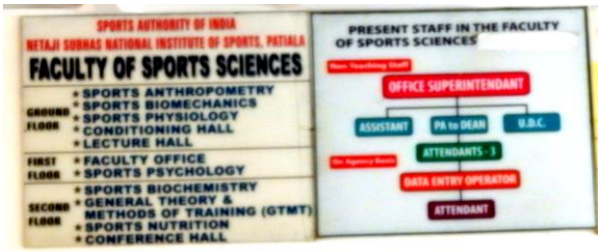

Scientists of various Departments successfully conducted 1304 Theory and 539 Practical classes for the courses as mentioned below:

Sr. No.	Name of the Course	No. of Classes	
		Theory	Practical
1	Diploma in Sports Coaching	358	275
2	Master's in Sports Coaching	359	158
3	Diploma in Sports Medicine	04	01
4	Certificate Course in Sports Coaching	160	43
5	Physical Conditioning courses for TOT of Odisha police	126	42
6	Skill development courses for supporting personnel for sports	14	---
7	Orientation program for MD sports medicine students	15	02
8	Special certificate courses for J & k sports personnel's	121	---
9	Sports Science Courses for Coaches	151	18

(images from Dr. Kaur's presentation on NS-NIS)

<u>On the 11th (Monday), Prof. Ae was welcomed by the ED (NS-NIS), Dr. S.S. Roy</u>, and honored as a distinguished scientist and guest from NSSU, Tokyo, Japan.

Prior to that main lecture and discussions, we visited the Faculty of Sport Science building and Laboratories therein (site visit within the NS-NIS campus), and it was important to see what are the existing facilities at each discipline, and detailed observations, discussions and advice was given by Prof. Ae to the Sport Biomechanics Senior Scientist, Dr. M.D. Ranga and Research Officer on the facilities there and what needs to be improved and how.



Practical discussions were also done on the software's (tools) and current experiments ongoing at the laboratory.

Prof. Ae started his second lecture to the assembled NS-NIS scientists, Administrators and Researchers and Coaches; by saying that NS-NIS has a lot of potential to contribute to Sports and Sport-Biomechanics in particular, and the reason for his visit here. ["Instruments for understanding the Functions, Recent Major Research" and "techniques for biomechanics"] was the topic of the TALK in both Theory and Practical Examples. To design the laboratory it was suggested to follow the Pyramid design. Prof. Ae further mentioned that the Coach should know all as possible. Coach should have knowledge of at least 10 principles (out of 40) of BIOMECHANICS. Why the athlete won or got injured? It was further explained that for example, JAAF activities started in 1991; and as a team, Prof. Ae and group did the analysis of the World Championship (on the 9.86 sec World Record). The presentation extends to how the science explained each sport and as required, its classification. Is Champion motion peculiar / unique or standard? These were points of discussion during the presentation and it was further explained that "Science (of Biomechanics) has begun to reveal that the Champion motion is closer to Standard than speculated; i.e., science of biomechanics really relates to the understanding of a winning motion". Use of an Integrative Model – Good relationships between the Scientists and Coaches and ATHLETES is critical. Finally, Prof. Ae recommended to NS-NIS to PREPARE THEIR OWN STANDARDS (Indian Context).

As of my (Randeep) comments, on the specially the new Degree program was as follows: Each laboratory and department in Sports Science at NS-NIS would benefit from preparing objectives of the lab./dept. in line with the vision and mission of the new NCSSR and NCCR, as a module-based system. In other words, each module can decide their curriculum and having compulsory and optional courses and foundation subjects, especially in regards to research projects and dissemination of research output to the scientific community.

The last part of the visit (post-lunch on the 11th) was to see the **sport-coaching facilities at NS-NIS campus**, meet the coaches and to give some recommendations (Prof. Ae) in context of the use of BIOMECHANICS feedback during training.





We will continue the next steps forward both from NSSU side (-Prof. Ae has already submitted his recommendations on curriculum for sports science/biomechanics set-up equipment's)**, and from TIAS side** (follow up on Coaching and Olympic education programs and Sport for All-Inclusive – Adapted Sports for Blind)**; and TIAS delegation** is going from **10th to 22nd Feb., 2018** to NS-NIS, Patiala, for UT-TAIIKU-TIAS & SAI-related projects, and to Punjab University, and New Delhi (SAI/Swimming Academy).

Thank you.

Dated: Jan 21, 2018

Signed: Randeep Rakwal

Randeep RAKWAL, Ph.D., Professor
(Coordinator, UT [Japan] - SAI [India] Projects)