

**UNESCO CHAIR/UNITWIN NETWORK PROGRESS REPORT FORM**

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| <b>Title of the Chair/Network:</b>                                      | UNESCO Chair in ‘Inclusive Adapted Physical Education and Yoga (1004)’   |
| <b>Host Institution:</b>  | Ramakrishna Mission Vivekananda Educational & Research Institute (RKMVERI), Belur, Howrah-711202, India.   |
| <b>Date of establishment of Chair/Network:</b><br><i>(mm, yyyy)</i>     | 12, 2012 (December 2012)   |
| <b>Period of activity under report:</b><br><i>(mm, yyyy - mm, yyyy)</i> | 05, 2017—12, 2021 (May 2017 – December 2021)   |
| <b>Report established by:</b><br><i>(name, position, email)</i>         | <ol style="list-style-type: none"> <li>1. Outgoing Chair: Dr Asis Goswami, former Head, Department of Sports Science &amp; Yoga, RKMVERI Belur. Email: <a href="mailto:asis.goswami@gmail.com">asis.goswami@gmail.com</a></li> <li>2. Incoming Chair: Dr. R. Giridharan, Head, Department of General and Adapted Physical Education &amp; Yoga, RKMVERI Coimbatore. email: <a href="mailto:giri.pd@gmail.com">giri.pd@gmail.com</a></li> <li>3. Incoming Co-Chair: Dr. Arkadeb Dutta, Head, Department of Sports Science &amp; Yoga, RKMVERI Belur. Email: <a href="mailto:arkadeb@gm.rkmvu.ac.in">arkadeb@gm.rkmvu.ac.in</a>, <a href="mailto:arkadeb@gm.rkmvu.ac.in">arkadeb@gm.rkmvu.ac.in</a></li> </ol> |

To be returned by electronic mail to both: [unitwin@unesco.org](mailto:unitwin@unesco.org) and [i.nichanian@unesco.org](mailto:i.nichanian@unesco.org)  
 Or by mail to UNESCO, Division for Policies and Lifelong Learning Systems  
 Section for Higher Education  
 7, place Fontenoy – 75352 Paris 07 SP, France  
 Fax: 33 (0)1 45 68 56 26/27/28

**1. Executive Summary:**  
*Major outcomes, results and impact of the Chair, including on national policies, in relation to its objectives as stated in Article 2 of the Chair Agreement (between the Institution and UNESCO)*  
 (Not exceeding 300 words)

During the period 2017-2021, the Chair has undertaken several educational, training and research activities in the areas of Disability Management, Special Education, Adapted Physical Activity, Sports Science and Yoga, spanning across the Coimbatore campus and Belur campus of the University, with an aim to disseminating and strengthening knowledge in these highly specialized areas and improve lives of people, especially the differently abled, through Inclusive Adapted Physical Education, Sports and Yoga. The major milestones achieved by the Chair during this period are as follows:

**Infrastructure development:** In 2018, a five-storey building christened as 'Atma-Vikas' (literally, five-layered self-development) that houses the Department of Sports Science and Yoga, equipped with modern laboratories and classrooms, state-of-the-art conference room, a fully functional fitness centre and huge Yoga halls, was inaugurated and was dedicated exclusively to teaching and research in the fields of Sports Sciences and Yoga.

**Teaching:** Two new postgraduate programmes (M.Sc. in Sports Science, and M.Sc/M.A. in Yoga) and two new research programmes (Ph.D. in Sports Science and Ph.D. in Yoga) have been launched during this period in the Department of Sports Science and Yoga to create the necessary human resource well versed in the scientific aspects of sports and yoga.

**Research:** On the research front, extensive research involving visually impaired children resulted in development of an innovative gaming platform named *Drishtiheen Digdarshan Sabda-kreeda* (Spatial Perception Audio Game for the Visually Challenged) which aims at enhancing self-sustenance and self-dependence skills in daily life and activities of the visually impaired. This research resulted in patent/design registration and award of Ph.D. in Sports Science to the first research scholar in this area by our RKMVERI Deemed University.

**Extension:** On the extension activity and knowledge dissemination front, the Chair has undertaken notable activities for popularization Yoga as an easy and effective life-style-improving mind-body technique by organizing International Yoga of Day on 21st of June every year for three consecutive years 2017, 2018 and 2019; organizing subject-specific focussed workshops relating to Yoga : Yoga and Diabetes (2017) and Yoga & Women's health (2019). A 5-day Yoga Camp was also organized at Ramakrishna Mission Vidyapeeth, a remote tribal school at Narainpur in the State of Chhatisgarh which was attended by 300 tribal students.

**Conferences:** Two National seminars were organised by the Chair in Belur campus : one on

“Recent Trends: Research in Sports Science and Yoga” (9-10 March 2018) and “Scientific Approach to Sports Performance and Assessment” (15-16 March 2019). During covid-19 pandemic when regular activities were jeopardised, the Chair quickly adopted the digital mode and organized a national level webinar on “New Horizons In Sports Sciences: Achieving High Performance” (19-20 June 2020) which saw overwhelming participation. In the Coimbatore campus of the University, two national conferences were held, one on “Addressing Barriers in the Environment and Universal Design” (14-16 November, 2019) in collaboration with National Institute for Empowerment of Persons with Multiple Disabilities (Divyangjan), Chennai, and the other on “Inclusive Education and Adapted Physical Education: Traditional and New Approaches in Developing 21st Century Skills for Students with Special Needs” (21-22 February 2020). Apart from the above, the Chair also organized a national level webinar on “Swami Vivekananda’s Educational Vision vis-à-vis National Educational Policy 2020” on 19 October 2020 wherein Dr Ramesh Pokhriyal ‘Nishank’, the Hon’ble Minister of Education, Government of India was the keynote speaker.

**Collaboration:** The Chair also was instrumental in establishing Memoranda of Understanding (MoUs) with two leading Government of India organisations, namely, the National Institute of Mental Health and Neurosciences (NIMHANS), Bengaluru, and the Institute of Neurosciences Kolkata (INK) in order to forge research collaborations in the fields of neuro-scientific and neuro-physiological aspects of inclusive physical education and yoga.

**Manpower:** Five highly qualified faculty members were recruited during the four-year period under report, two in 2019 and three more in 2021, to strengthen and reinforce the academic activities (research, teaching and extension) in the Department of Sports Science and Yoga at Belur campus. A major faculty recruitment drive is going on in Coimbatore campus at the Departments of Disability Management and Special Education and General and Adapted Physical Education, in order to on-board some of the best personnel specializing in Special Education, Hearing Impairment, Mental retardation, Intellectual Disability, Speech Therapy, Audiology, Occupational Therapy etc. With such a wide variety of expertise of great diversity, it is planned to conduct translational human research with promises of scientific and technologically helpful solutions in the lives of the disabled. **We report with evident pleasure and pride that RKMVERI University as a whole was accredited by National Assessment and Accreditation Council (NAAC) under the Government of India with the highest A++ grade (CGPA 3.66/4),**

**with an all-India rank second in the whole country among the higher educational institutions accredited by NAAC in the Revised Accreditation Framework.**

## **2) Activities:**

*Overview of activities undertaken by the Chair during the reporting period*

### **a) Education/Training/Research**

*(key education programmes and training delivered and research undertaken by the Chair during the reporting period, target group and geographical coverage)*

#### **i) Education (leading to certificate)**

1. The following courses are being conducted by the Faculty of General and Adapted Physical Education and Yoga (GAPEY) of the University on a regular basis:

- i. Ph.D in Physical Education
- ii. Master of Philosophy (M.Phil.) in Physical Education
- iii. Master of Physical Education (M.P.Ed.)
- iv. Bachelor of Physical Education (B.P.Ed.)
- v. Bachelor of Science in Physical Education (B.Sc.)
- vi. Diploma in Physical Education

2. The following courses are being conducted by the Faculty of Disability Management and Special Education (FDMSE) of the University, Coimbatore, on regular basis:

- i. Ph.D. in Special Education [Visual Impairment (VI), Hearing Impairment (HI), Mental Retardation (MR)] M.Phil. in Special Education (VI, HI, MR) Other Courses running with the recognition/approval of the Statutory Body names 'Rehabilitation Council of India (RCI)'
- ii. M.Ed. in Special Education (VI, HI, MR)
- iii. B.Ed. in Special Education (VI, HI, MR)
- iv. D.Ed. in Special Education (VI, HI, MR)
- v. DSLI – Diploma in Sign Language Interpretation (VI-Visual Impairment, HI-Hearing Impairment, MR-Mental Retardation)

In addition Diploma in Theatre Arts for Holistic Development and Certificate course in Assistive Technology were also conducted.

Academic courses in Main Campus at Belur Math: The Department of Sports Science and Yoga is conducting the following programmes at present:

1. Integrated M.Phil.- Ph.D. in Sports Science
2. Integrated M.Phil. - Ph.D. in Yoga
3. M.Sc. in Sports Science
4. M.A./M.Sc. in Yoga
5. Post Graduate Diploma in Yoga
6. Certificate Course in Basic Ayurveda, Panchakarma and Naturopathy

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|   | <p>(CBAPN)</p> <p>7. Certificate Course in Yoga (CCY)</p> <p>8. Outreach programme in Yoga for Health and Wellbeing</p>  |
| <p><b>ii) Training (short term)</b></p> | <p><b>2017:</b></p> <p>1. Wheelchair Accessibility and Sports One day workshop on Wheelchair Accessibility and Sports was jointly organised by GAPEY, Leonard Cheshire Disability and University college of London and Global Disability Innovation Hub on 31.05.2017.</p> <p>2. Training programme on "Cardio-pulmonary resuscitation (CPR)" was organised for the Sports Science and Yoga Students of Belur Campus on 8th September, 2017. The training was delivered by Dr. Tapas Mondal, Associate Professor, Division of Paediatric Cardiology, Dept. of Paediatrics, McMaster University, Canada.</p> <p><b>2018:</b></p> <p>3. Faculty members from Coimbatore campus, Dr. P.J. Sebastian and Dr.R. Giridharan attended the Special Olympics Leadership Academy Level III programme held in Kolkata during January 2018. Mr. Triloki Prasad, Research Scholar of Belur Campus of the University, attended Level I programme. The programme was delivered by Ms. Mary Davis, CEO, Special Olympics International and Dr. John Dow, MD, Special Olympics Asia Pacific Region.</p> <p>4. Dr. Asis Goswami (outgoing Chair) participated and delivered lectures at the Athletic Coaches Association of Bengal on "A few scientific considerations for running events" in August 2018. This lecture was aimed at providing solutions to specific issues related to analysis of performance of the sports persons. About 30 coaches had attended the programme.</p> <p><b>2019:</b></p> <p>5. Training sessions were conducted to provide Yoga practice for students. This activity includes teaching of Asana for healthy living and wellbeing. This has started from 15 January and would continue till 30 April 2019, in the gymnasium of the Belur Campus.</p> <p><b>2021:</b></p> <p>6. A short term Faculty Development programme was organized at the Faculty of Disability Management, RKMVERI, Coimbatore, on the theme "Training for Social Connectedness and Inspiration" during 1<sup>st</sup> to 5<sup>th</sup> February 2021 in online mode. The programme was sponsored by AICTE-ATAL Academy, New Delhi. Total number of 134 participants from all over the country attended the programme. Swami Atmapriyananda, Pro-Chancellor, RKMVERI – Belur Math, inaugurated the programme and delivered a lecture on "Harmonizing Eastern Philosophy &amp; Western Science". N. Muthaiah, Dean, School of Rehabilitation Science, RKMVERI, delivered the welcome address.</p> |

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| <p><b>iii) Research</b></p> | <p><b>Ongoing Research Activities</b></p> <ol style="list-style-type: none"> <li>1. Improving self-sustainability of visually impaired is one of our prime research goals. The Chair wants to address and understand spatial learning ability in the blind persons through sound source localization, planning and reaching abilities and accordingly developing sound-assisted technological devices to be used by visually impaired subjects for precise navigational skills in daily activities. In this regard, a physical-gaming platform called "Dristiheen Digdarshan Sabdo Krira" was designed at RKMVERI which improves acuity in spatial mobility and reaching through proprioception has been developed. "Dristiheen Digdarshan Sabdo Krira" is registered as Intellectual Property (The Patent Office Journal No. 27/2019 Dated 05/07/2019 page 28999).</li> <li>2. Another ongoing project in (FDMSE) sponsored by Indian Council of Social Science Research, Southern Regional Centre, Osmania University Library, Hyderabad is improving the ability of students with visual impairments in the classroom to take notes on any relevant subjects being taught by the teachers in inclusive settings by using a laptop with a screen reader, as well as to access information about their surroundings and to write exams without the assistance of a scribe.</li> <li>3. Moreover, the chair is committed to the improvement in tribal children education and has recently undertaken a project that will look up the Problem Based Learning Method, an evolving strategy for educational research, to teach science concepts among tribal Children. The project has started in 2021 under FDMSE-RKMVERI, Coimbatore has financial support from Division of Educational Research (DER), National Council for Educational Research and Training (NCERT), New Delhi</li> <li>4. Full-fledged research activities on physiology of human performance by the chair has come up with the establishment and opening of the research laboratories for Sports Science and Yoga at the Belur Campus from 2018. The construction of the new five-storeyed building christened "Atma-Vikas" (meaning Self development) dedicated to</li> </ol> |
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|  | <p>Sports Science, Yoga and Fitness hosted a number of research laboratories with scientific equipment functioning under several departments and has initiated and continuing PhD programs in the following research areas,</p> <ul style="list-style-type: none"> <li>a) Understanding the effect mind-body techniques on motor abilities and neurocognitive functions in the students going through stress ;</li> <li>b) Effect of General and Specific Training on Anthropometric Profile and Cardiorespiratory Endurance of the Cricketers.</li> <li>c) Exploring Spatial Perception of Visually Impaired Through Auditory and Other Feedback.</li> <li>d) Effect of various combinations of yogic practices on physical performance of non-sport and sport persons.</li> <li>f) Studies on heart rate variability during various sporting activities</li> </ul> <p>The Chair experienced difficulties in research activities on human subjects due to the outbreak of COVID-19 pandemic. In spite of the adversity, faculty members have continued to work with limited human resources whenever possible under lockdown restrictions obeying necessary precautionary measures. Dr. M. Srinivasan of Sri Ramakrishna Mission Vidyalaya Maruthi college of Physical Education conducted a questionnaire survey to understand the "Impact of COVID-19 on Physical activities" in India from more than 400 participants. Despite the unprecedented situation of pandemic the students MSc Sports Science completed dissertation under the joint cooperation of faculties of both the Department of Sports Science and Yoga (DSSY) of Belur Math Main Campus and Faculty of Disability Management &amp; Special Education (FDMSE), Coimbatore Campus.</p> <p>During the tenure research proposals have been submitted to different funding agencies and are under process of review. The list is mentioned below :</p> <ol style="list-style-type: none"> <li>1. Exploring Spatial Learning Abilities with Non-Visual Cues for the Visually Impaired Persons—submitted to West Bengal-Dept. Of Science and Technology (DST) Scheme 2019 by DSSY</li> <li>2. Improvement of general health, cardiovascular and metabolic risk factors in visually-impaired teenagers through yoga, meditation and</li> </ol> |
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|  | <p>orientation ability training. (Submitted to Sree Padmavathi Venkateswara Foundation-2019 by DSSY)</p> <p>3. Hepato-Ayurgenomics: Combining Genetics and Ayurveda for personalized diagnosis and therapy against chronic liver diseases. (Submitted to the Ministry of AYUSH (Ayurveda-Yoga-Unani-Siddha-Homeopathy) under the Govt. of India's extramural funding 2019 by DSSY)</p> <p>4. "Management of Pain in Knee Osteoarthritis by Yoga" (Submitted to AYUSH extramural funding 2019 by DSSY).</p> <p>5. Evaluation of Different Combination of Yogic Practices on Stress Management and Cognitive Performance in Elderly Population: A Randomized-Controlled Study. (Submitted to DST's Scheme called SATYAM 2020 by DSSY)</p> <p>6. A molecular and genetic study towards understanding the beneficial effects of Yoga on asthma patients. (Submitted to DST-SATYAM-2020 by DSSY)</p> <p>7. Thymic intolerance to cardiac myosin: Finding underlying cause of idiopathic dilated cardiomyopathies (IDCMs), an array of seemingly unrelated forms of cardiomyopathy in Eastern India patients. (Submitted to DST-SERB (Science and Engineering Research Board)-2020 by DSSY)</p> <p>8. Development of Accessible Resources for Improving Mathematics Learning among Children with Visual Impairment at Lower Primary Level. (Submitted to Azim Premji University Research Funding Programme 2020 by FDMSE)</p> <p>9. Digital Oracy Toolkit for Children with Intellectual Disability. (Submitted to Azim Premji University Research Funding Programme 2020 by FDMSE)</p> <p>10. Designing, Validation and Feasibility of Yoga Therapy with Task Oriented Functional Activities on Selected Physical Fitness parameters and Cognitive Functioning of Children with Spastic Cerebral Palsy. (DST- SATYAM 2020 by GAPEY)</p> <p>11. Influence of mind-body therapies with yogic approaches on parasympathetic nervous system functions among children with intellectual disability and autism. (DST- SATYAM 2020 by GAPEY)</p> |
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|  | <p>Individualized and Combined Effects of Yoga asanas and Meditation on Selected Cardiopulmonary and Psychological Variables of Children with Intellectual Disabilities. (DST- SATYAM 2020 by GAPEY)</p> <p>12. Effect of Yoga on Lifestyle Management, Physical and Mental Fitness of Rural and Urban Women and Their Family (DST- SATYAM 2020 by GAPEY)</p> <p>13. Isolated and Combined Effects of Power Yoga with Omkar Meditation on Selected Body Weight Body Composition Biochemical Variables and Brain Rhythms of Adolescent Obese Children (DST- SATYAM 2020 by GAPEY)</p> <p>14. AYUSH intervention for Managing Pain and Improving Lifestyle in Common Musculoskeletal Disorders in Rural Population of West Bengal. (AYUSH PHI Scheme 2020 by GAPEY).</p> |
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**b) Conferences/Meetings**

*(key conferences and meetings organized by the Chair or to which its Chairholder contributed)*

**i) Key conferences and workshops hosted by the Chair**

(In Reverse Chronological Order)

1. **19 - 20 June 2020:** National webinar on “New Horizons In Sports Sciences: Achieving High Performance” was held with invocation address by the Vice-Chancellor of the University, Swami Atmapriyananda and special lecture by Prof. Sanmuga Nathan, Sultan Idris Education University, Malaysia, followed by presentations of research topics related to the webinar theme by the participants and summarization of the events by the chair holder.
2. **7 July 2020 :** Informal meeting of the UNESCO Chairs in India was organized in collaboration with support of Prof. Madhav Nalapat and his team. This meeting was attended by Ms. Yadav and Mr. Juan Pablo.
3. **27 May 2019:** Prof. S. Nathan Jeganathan (Sultan Idris Education University of Malaysia) was invited to deliver a special lecture on “Sports and Games Training Methodology”. This programme was attended by the students of the Calcutta university and RKMVERI.
4. **15-16 March 2019:** A national level seminar on “Scientific Approach to Sports Performance and Assessment” was held and eminent personalities from sports and exercise, Dr. Ajay Bansal, Former Chief Coach, Hockey India ; Dr. Mantu Saha, Defence Institute of Physiology & Allied Sciences, DRDO, Government of India, New Delhi ; and Dr. Pralay Majumdar, Sports Authority of India, Bangalore, delivered invited special lectures. The seminar concluded with a workshop in the field of Exercise physiology and Biomechanics with participation of about forty students from different universities.

**ii) Other conferences/organizational activities undertaken by the Chairholder**

1. On **8 December 2020** eighth Tamil Nadu Sitting Volleyball Championship was organised by the Faculty of GAPEY at the Vidyalaya Indoor Stadium, Coimbatore. RKMV Trophy for the State Level Tournaments in Adapted sports was awarded to the Winner.
2. On **3 December 2020** the International Day of Persons with Disabilities was celebrated with various types of Inclusive sporting activities.
3. During **22- 24 October 2020** a series of webinars was organized by the Faculty of General and Adapted Physical Education on the theme “Inclusive Adapted Physical Education” (in online mode) under the leadership of Dr. R. Giridharan. Suzanna R. Dillon from Texas Women's University, Denton, USA enumerated different strategies for Physical Education Teacher Education (PETE) professionals to promote Inclusive practice on the first day. Aspects of

Classroom strategies in Physical Education (PE) under inclusive setting was elaborated by Dr. Linda Hillgenbrinck, an adapted Physical Education Specialist, Texas, USA. On the third day of the webinar an elaboration of the Indian Legislation in relation to Inclusive Physical Education and Adapted Sports was made by Sri PadminiChennapragada, of Indian Wheelchair Tennis Tour, Bangalore.

4. On **19 Oct 2020**, a webinar was hosted in the University with the theme "Swami Vivekananda's Educational ideas and the New Education Policy" to elaborate the alignment of the vision of Swami Vivekananda and the new education policy of the country. The programme was inaugurated by then the Hon'ble Education Minister, Government of India, Dr. Ramesh Pokhriyal 'Nishank'. Several eminent speakers discussed different aspects of the new education policy.
5. On **22 August 2020**, the Vivekananda Centre for Consciousness Studies and Research (VCCSR) of the university, in collaboration with Centre for Consciousness Studies, National Institute of Mental Health and Neurosciences (NIMHANS), Bengaluru, had organized one-day webinar on "The Four Yogas: Ancient Scriptures and Swami Vivekananda's Modern Interpretation". Eminent monastic members of Ramakrishna Mission and speakers from Krishnamacharya Yoga Mandiram, Chennai delivered special lectures. Notably, Swami Sarvapriyananda, Minister-in-Charge, Vedanta Society of New York, USA spoke on "Mundaka Upanishad's twin bird imagery and Swami Vivekananda's 'Real and the Apparent man". Swami Atmarupananda, Resident Minister, Vedanta Society of Greater Houston, USA, discussed "Teachings on Karma Yoga in the Bhagavad-Gita and by Swami Vivekananda". Sri S.Sridharan, Trustee, senior most mentor-teacher and consultant therapist, Krishnamacharya Yoga Mandiram, Chennai: Patanjali Yoga Sutras and Swami Vivekananda's Raja Yoga. Swami Vireshananda, Editor, Prabuddha Bharata, Belur Math: "Narada Bhakti Sutras and Swami Vivekananda's lectures on Bhakti Yoga (Divine Love)". Swami Atmapriyananda, Pro-Chancellor, Ramakrishna Mission Vivekananda Educational & Research Institute, Belur Math, West Bengal, India: "Yoga-samanvaya – synthesis of the yogas as taught by Ramakrishna-Vivekananda".
6. During **21-22 February 2020** a two day National Conference on "Inclusive Education and Adapted Physical Education: Traditional and New Approaches in Developing 21st Century Skills for Students with Special Needs" was jointly organized by FDMSE and GAPEY, Ramakrishna Mission Vivekananda Educational and Research Institute, Coimbatore campus was held. Swami Nityadipanandaji Maharaj, Ramakrishna Math, Kavundampalayam, Coimbatore, delivered the Presidential address. Dr. K. Balabhaskar, Head, Adult Independent

Living, NIEPMD, Chennai, delivered the Keynote address. Swami Garishthanandaji Maharaj, Administrative Head, RKMVERI, Coimbatore campus, inaugurated Innovative Assistive Technology Stalls displayed for the benefit of delegates. Dr. M.S. Nagarajan, Senior Manager Sports, Special Olympics, Chennai delivered the valedictory address and Dr. S. Parween, Asst. Professor FDMSE proposed the vote of thanks. A total of 205-delegates including special educators, para professionals from various parts of southern India, student trainees from FDMSE and GAPEY attended the conference. 30-papers were presented on various themes related to the conference in three parallel sessions on two days.

7. During **23-24 January 2020**, European Commission ERASMUS+ Tutorial Meeting was organized and the visiting members EU delegates, Claudio Colosio, Kenesh Dzhusupov, Gert van der Laan, Triin Veber, and Anja Wipper presented various e-learning methods and held interactive sessions to introduce and clarify different issues in large scale data collection and knowledge dissemination. The project is being carried out by Prof. P.K. Nag. and the chair holder took active part in this programme.
8. During **6-11 January 2020** six students accompanied Dr. Kunal Sikder, faculty member of Department of Sports Sciences and Yoga from Belur Math University Campus visited to LNIPE, Gwalior for a five day educational tour for hand on experience on the state of art sports equipment, facilities and analytical tools in biomechanics, psychology, exercise physiology and performance analytics. They also participated in sports activities namely shooting, tennis, cricket with staff and trainees.
9. During **7 - 17 December 2019**, an educational tour for the Master of Physical Education 2nd year students was organized. Swami Divyaprajnananda Maharaj, Asst. Administrative Head, Dr. R. Giridharan, Dr. A. Sathiya Moorthy and Sri S. Rajavarman accompanied the team to the sports facilities, sports laboratories & sports assessment facilities of Lakshmi Bai National Institute for Physical education (LNIPE), Gwalior and Commonwealth Sports Village, Jawaharlal Nehru Multipurpose athletic sports complex, sports assessment and performance laboratories, New Delhi.
10. During **14<sup>th</sup>-18<sup>th</sup> December 2019**, the Department of Sports Science & Yoga had organized a five-day long off-campus Yoga Camp at Ramakrishna Mission Ashrama Narainpur in Chattisgarh for the residential tribal students and staff numbering 300 from Vidyapeeth and ITI. Interestingly the tribal children are from far flung remote areas of the state and majority are the first generation learners. The usefulness of Yoga as a prominent mind body technique was explained to the participants by combining both the evidence from Yogic philosophy and science through lectures by monastic and academic faculties. A very comprehensive teaching and training of yoga postures, mindfulness meditation were offered under the two running

sessions by the M.A and PG Diploma students in Yoga of the Department of Sports Science & Yoga. A pre-session was conducted by monastic faculty and a special talk on the effect of Yoga on brain development was delivered by Dr. Arkadeb Dutta, assistant professor from the Department of Sports Science & Yoga, Belur Math Campus.

11. During **14-16 November 2019**, the Faculty of Disability Management and Special Education of the University in collaboration with National Institute for Empowerment of Persons with Multiple Disabilities (Divyangjan), Chennai, had organized a 3 Day State Level Conference on “Addressing Barriers in the Environment and Universal Design”. Universal Design, Universal Design for Learning, Universal Design of Assessment, Positive Learning Environment, Technology and Persons with Disabilities, Barriers to Effective Learning and Communication, and the likes were the topics of discussion during these three days. Feedbacks were collected from the participants and certificates were distributed in the function. In total 50 special educators attended the programme.
12. During **14- 26 November, 2019** Faculty of General & Adapted Physical Education and Yoga along with Wheelchair Basketball Federation of India Jointly organize INDIAN WHEELCHAIR BASKETBALL TEAM TRAINING CAMP at Ramakrishna Mission Vidyalaya Indoor Stadium, Coimbatore. The inaugural function was held on 17th November 2019. Dr. R. Giridharan, Associate Professor and Head, Faculty of GAPEY, welcomed the gathering. Mrs. P. Madhavi, President, Wheelchair Basketball Federation of India and Captain N. Vinod Sankar, Commandant, Air Force Administration College, were introduced to the athletes who gave a motivational talk on “Elite Sports Participation and Performance by Persons with Disabilities”. Dr. R. Giridharan had assisted the Head Coach of the team, Mr. Sharad Nagane, and Mr. ThayumanaSubramaniam, Asst. Coach, in the conditioning and game specific skill training part throughout the camp.
13. On **12 September 2019**, Dronacharya Awardee Kabaddi Coach Sri Prasad Rao was invited to the university for an interaction with the students to discuss the differences between professional type of Kabaddi and the Asian games style. The students of Sports Sciences were given the opportunity to observe the professional environment of the Kabaddi match.
13. On **7 September 2019**, Dr. Tanuja Nesari, CEO, National Medicinal Plant Board and Director of All India Institute of Ayurveda, New Delhi, visited the Belur Main Campus under invitation by Hon'ble Vice Chancellor Swami Atmapriyananda Maharaj and addressed a gathering of the faculty and students of Sports Science & Yoga, followed by a group discussion on opportunities for research and funding.
14. In **November 2019**, Dr. Sourav Bhattacharjee from Washington University, St. Louis was invited to deliver a lecture at the Belur Campus. The students had an opportunity to learn about

recent developments in immunological research.

15. During **15-16 March 2019**, a National Conference on “Global Trends in Assistive Technology and Adapted Sports” –was held by the Faculties of GAPEY and FDMSE at Coimbatore. A total of 172 delegates attended the conference. Fifty delegates presented papers on various themes related to the conference in three parallel sessions on two days. This included 17 from FDMSE and 33 from GAPEY.

**iii) A selection of conference presentations by the Chairholder and other colleagues**  
(In Reverse Chronological Order)

A. The Chair holder delivered lectures on the effects of COVID-19 on physical activity patterns of the disabled persons and also the general population. He had also Chaired various sessions of webinars organized by other universities / organizations as given below:

1. Attended the online “International Conference on Creating Sports Culture in Universities” Faculty of Physiotherapy, SGT University, Gurugram, Haryana, India and also Chaired the lecture session of Prof. Ulrich Rosen. Prof. Rosen delivered the lecture on "More Success for High Performance athletes Understanding Epigenetics" on May 9, 2020.
2. Delivered a lecture on “Application of Biomechanics in Sports Performance: A COVID-19 perspective" in the webinar series organized by Physiological Society of India and Department of Sports Science, University of Calcutta, on September 13, 2020.
3. Chaired a session on "Latest trends of Research in Yoga for Health and Immunity" on 17th June 2020. The programme was organized by Faculty and Naturopathy and Yogic Science in collaboration with Fitness India Committee. The lecture was delivered by Dr Sat Bir Singh Khalsa, Director Of Yoga Research for the Yoga Alliance and the Kundalini Research Institute, and Research Associate at the Benson Henry Institute for Mind Body Medicine, Research Affiliate of the Osher Center for Integrative Medicine, and an Assistant Professor of Medicine at Harvard Medical School.
4. Delivered a lecture on "Framework for safe return of athletes to the playground after COVID 19 disruption in training" during a Coaches Education Programme organized jointly by Athletic Coaches Association of Bengal and Bangladesh Athletic Federation held October 4, 2020. The programme was attended by more than 150 participants from India and Bangladesh.
5. National Web Lectures on 'Health and Fitness Awareness for the Community' was organized by School of Education, Netaji Subhas Open University, Kolkata on November 27, 2020. Prof. Asis Goswami delivered a lecture on "Exercise and health - in the present day perspective".

B. The following special lectures were delivered by faculty members and the Chairholder during

the national seminar in the Belur Campus.

Prof. U.S. Ray - Mountaineering as a sport: emerging trends of applications of high altitude physiology;

Prof. Rupayan Bhattacharya – Principles of Biomechanics;

Prof. Asis Goswami - Technical aspects of Tests in Exercise Physiology;

Prof. Asok K Ghosh – Anaerobic threshold: Its importance in High performance sports.

C. The faculty members of FDMSE, RKMVERI, Coimbatore, Dr. S. Parween and Dr. Saumya Chandra, delivered excellent elaboration on the topic "Not All Disabilities are Visible" on the 'International Day of Persons with Disabilities'. The online programme was jointly organized at Visva-Bharati, Santiniketan, West Bengal and RKMVERI, Coimbatore campus, Tamil Nadu.

D. Webinar titled “International One-day Webinar on Consciousness Studies and Research: Ancient and Modern” was held on 30 July 2020 as a collaborative effort by Vivekananda Centre for Consciousness Studies and Research (VCCSR), School of Indian Heritage, RKMVERI and Centre for Consciousness Studies, National Institute of Mental Health and Neurosciences (NIMHANS), Bengaluru. Several eminent monastic members of RKM, faculty members from NIMNAHS and the Department of Sports Science and Yoga deliberated on ancient concepts of consciousness and modern explanations that are emerging at present. The theme revolved around the vision of Swami Vivekananda. The programme included the lectures by the following persons and theme:

- i) Invocation and Inaugural address Swami Atmapriyananda, Vice Chancellor: Consciousness as discussed by Sri Ramakrishna in the Kathamrita (the Gospel of Sri Ramakrishna);
- ii) Lead Speaker on behalf of the ancient studies on Consciousness: Swami Sarvapriyananda, Minister-in-Charge, Vedanta Society of New York, USA: Consciousness Studies in ancient India: Mandukya Upanishad perspective;
- iii) Lead Speaker on behalf of the modern studies on Consciousness: Dr. Bindu M. Kutty, Professor, Department of Neurophysiology, Associate Dean of Basic Sciences and Officer In-Charge, Centre for Consciousness Studies, NIMHANS, Bengaluru: Understanding consciousness from the meditative brain : a neuroscientific perspective;
- iv) Dr. P N Ravindra, Associate Professor, Department of Neurophysiology, Centre for Consciousness Studies, NIMHANS, Bengaluru: Understanding sleep consciousness from neuroscience perspective;
- v) Swami Sarvasthananda, Minister-in-Charge, Ramakrishna Vedanta Centre, Bourne End, UK: Consciousness: Yoga perspective with special reference to Swami Vivekananda's Raja-Yoga;
- vi) Dr. Subrata Chattopadhyay, Professor of Physiology, West Bengal University of Health

Sciences: Chetana, Dharma, Darshan—Vignaner aloke (in Bengali) (Consciousness, Religion, Philosophy in the light of modern science);

vii) Dr. Arkadeb Dutta, Assistant Professor, Department of Sports Science and Yoga, RKMVERI: Consciousness and Modern Brain Research;

viii) Valedictory Address by Swami Kaleshananda, Controller of Examinations, RKMVERI: Consciousness as taught in the Bhagavad Gita;

D. Swami Atmapriyananda, Pro-Chancellor, RKMVERI, was invited to be the Chief Guest at the 'Dr Reeta Peshawaria Oration Award; function on 22-02-2021, held at National Institute for the Empowerment of Persons with Intellectual Disabilities (Divyangjan), Hyderabad.

E. Students of the Department of Sports Science & Yoga attend an International conference on "International conference on Physical Education, Yoga and Sports Science in 2020's era" organized by State Institute for Physical Education for Women in Kolkata, India and gave oral presentations on their research topic.

### **c) Interuniversity Exchanges/Partnerships**

*(principal exchanges/partnerships between the Chair and other institutions including UNESCO Chairs/UNITWIN Networks)*

1. Partnerships and networking for research activities are initiated with premier Institutions and hospitals involved in the translational human research in the areas of neuropsychiatric, neurodegenerative and neuroinflammatory disorders by signing Memorandum of Understanding (MoU). One of the goals of the MoU are exploring brain science in a differently abled population with wide degrees of intellectual and motor disabilities. The details of the research areas are included in the Future Plan section of the report.

a. Memorandum of Understanding was signed between the INSTITUTE OF NEUROSCIENCES KOLKATA, 185/1 A.J.C. Bose Road, Kolkata 700017, West Bengal, India, and The School Of Biological Sciences, Ramakrishna Mission Vivekananda Educational And Research Institute, Belur Math, Howrah, West Bengal, India, (Declared by the Ministry of Human Resource Development, Government of India, as Deemed University under University Grants Commission Act, 1956) for academic cooperation in the areas of common interest in regard to research, teaching, training, publications, projects.

- b. Memorandum of Understanding was signed between the CENTRE FOR CONSCIOUSNESS STUDIES, Dept. of Neurophysiology, NATIONAL INSTITUTE OF MENTAL HEALTH AND NEUROSCIENCES (NIMHANS), Hosur Road / Marigowda Road, (Lakkasandra, Wilson Garden), Bengaluru 560029, Karnataka, India, and Vivekananda Centre For Consciousness Studies And Research, Under ‘school Of Indian Heritage’, Ramakrishna Mission Vivekananda Educational And Research Institute (Rkmveri), Belur Math, Howrah, West Bengal, India, (Declared by the Ministry of Human Resource Development, Government of India, as Deemed University under University Grants Commission Act, 1956) for academic cooperation in the areas of common interest in regard to research, teaching, training, publications, projects.
2. The Chair holder has taken active part in the Board of Studies meetings of School of Education, Central University of Rajasthan, Ajmer, and enhanced the introduction of credit transfer system through SWAYAM platform.
  3. The Chair took part in PGBOS meetings of MYAS Sports Science Department of University of Calcutta. Also delivered lectures to the students of the department as guest faculty.
  4. The Chair established network with the following UNESCO Chairs for various types of collaborative activities: a) Prof. Catherine Carty, UNESCO Chair Project Manager, "Transforming the Lives of People with Disabilities, their Families and Communities, Through Physical Education, Sport, Recreation and Fitness", Institute of Technology Tralee, Co Kerry, Ireland. b) Prof. Paolo Orefice, UNESCO Transdisciplinary Chair, Human Development and Culture of Peace, University of Florence, Via Battisti, 4 - 50122 Firenze, Italy. c) Prof. Carmine Gambardella, UNESCO Chair on Landscape, Cultural Heritage and Territorial Governance, Italy.
  5. Collaboration with Prof. Arkadiusz Stanula, Dept of Exercise and Sport Performance, Institute of Sport Science, The Jerzy Kukuczka Academy of Physical Education, Katowice, Poland and Dr. Subir Gupta, Faculty of Medical Sciences, The University of West Indies, Cave Hill, Barbados, led to a research publication on "Peak blood lactate concentration and its arrival time following different track running events in under-20 male track athletes", accepted for publication in the International Journal of Sports Physiology and Performance (Human Kinetics).

**d) Publications/Multimedia Materials**

*(major publications and teaching/learning materials)*

*Please tick relevant fields of output and indicate volume of output:*

**Books**

[tick]

[no.]

**Books (edited)**

**Books (chapters)**

|                               |                                     |                                   |
|-------------------------------|-------------------------------------|-----------------------------------|
| Monographs                    | <input type="checkbox"/>            |                                   |
| Research Reports              | <input checked="" type="checkbox"/> | 1(PhD)+6 (M.Phil.)                |
| Journal Articles (refereed)   | <input checked="" type="checkbox"/> | 6                                 |
| Conference Proceedings        | <input checked="" type="checkbox"/> |                                   |
| Occasional Papers             | <input type="checkbox"/>            |                                   |
| Teaching/Learning Materials   | <input checked="" type="checkbox"/> | 12                                |
| Multimedia Materials (CD-ROM) | <input type="checkbox"/>            |                                   |
| Multimedia Materials (Video)  | <input checked="" type="checkbox"/> | 14                                |
| Multimedia Materials (Other)  | <input checked="" type="checkbox"/> | Several online lectures conducted |

*Give details of major publications and materials including full citations.*

**i) Theses**

**Ph.D. in Sports Science:**

" On Mobility Patterns of Visually Impaired in Sporting Activities" by Triloki Prasad under the supervision of Prof. Asish Goswami, Department of Sports Science & Yoga, RKMVERI.

**M.Sc. in Sports Science:**

1. "Analysis of Dynamic Stability of Spatio-temporal Parameters of Gait among Individuals with Visual Impairment" by Alfa Khatun under the guidance of Dr. R Giridharan, Associate Professor & Head, GAPEY, RKMVERI.
2. "Effect of passive echolocation training on spatial cognition among amateur football players with visual impairment" by Anisha Mukherjee under the guidance of Dr. R Giridharan, Associate Professor & Head, GAPEY, RKMVERI.
3. "Effect of task-specific gross motor training programme on spatiotemporal gait profile of a child with cerebral palsy" by Debduhita Bhattacharyya under the guidance of Dr. R Giridharan, Associate Professor & Head, GAPEY, RKMVERI.
4. "Impact of positive reinforcement by high tempo motivational music during cardio-respiratory exercise on treadmill" by Debabrata Chatterjee under the guidance of Dr. Kunal Sikder, Assistant Professor, Department of Sports Science & Yoga, RKMVERI.
5. "Evaluation of motor ability in sedentary adults trained under a short-duration balance and motor skill enhancement program" by Arpan Chattopadhyay under the guidance of Dr. Arkadeb Dutta, Assistant Professor, Department of Sports Science & Yoga, RKMVERI.
6. "Indian endurance athlete's perspective on the menstrual cycle: practices, communications, health status and the changes in perception across the phases" submitted by Tanugatri Majumder under the guidance of Øyvind B. Sandbakk, Professor, Faculty of Medicine and

Health Science, Department of Neuromedicine and Movement Science, Centre for Elite Sports Research, Norwegian University of Science and Technology (NTNU), Norway

**ii) Publications**

**Journal Articles:**

1. Prasad,T., Ghosh,S., Goswami, A. Static Balance Ability of Visually Impaired and Partially Sighted Persons on Firm and Foam Surfaces, *European Journal of Adapted Physical Activity*, 13(2), 2020. DOI: 10.5507/euj.2020.002
2. Indrajit Sarkar, Santi Ranjan Dasgupta, Kunal Sikder, and Rupayan Bhattacharya, Reverse-Relative Age Effect on motor fitness of district level handball players of West Bengal in course of talent hunting, *European Journal of Sports & Exercise Science*, 2020, 8 (3): 01-13
3. Dhiraj Dolai and Rupayan Bhattacharya, Utility of Range of Motion Measurements On The Classification of Athletes, World Academy of Science, Engineering and Technology, *International Journal of Sport and Health Sciences*, Vol:14, No:12, 2020
4. Gopinath Bhawmick Bhunia and Uday Sankar Ray, Improved aerobic capacity with progressive incorporation of breathing maneuvers in yoga training. *Journal of Advances in Sports and Physical Education*. 2020; 3(11):199-206. DOI: 10.36348/jspe.2020.v03i11.001
5. Prasad, T., Goswami, A., Ghosh, S. (2019). Walking Pattern of Sighted Volunteers with Open Eye and Closed Eye Conditions, *Journal of Disability Management and Special Education (JODYS)*.2019 ; 2(2) :1-10.
6. Roy, R., Ray Uday Sankar. Effect of yoga breathing manoeuvres (shitali and sitkari pranayama) on heat stress management. *Journal of Complementary Medicine and Research* 2021; 12(2): 182-188.

**e) Cooperation with UNESCO Headquarters, Field Offices**

Based on the directives to build a more informed & active network of UNESCO Chairs in India presented by the UNESCO New Delhi Director Eric Falt on a two-day consultation on the 10th & 11th December 2018 at the UNESCO New Delhi office, the chair agreed to cooperate and look into forming e-groups of UNESCO Chairs to increase knowledge sharing, networking and frequent meeting and also utilization of indigenous resources and ideas. The meeting was attended online by the Hon 'ble Vice Chancellor of RKMVERI, Swami Atmapriyananda Maharaj. Dr. N. Saravana Kumar, Joint Secretary (ICC), Ministry of Human Resource Development (MHRD) thanked UNESCO for organizing the meeting and highlighted the need to engage meaningfully with the UNESCO Chairs in strengthening the programmes and policies of MHRD.

Later in the second consultation of UNESCO Chairs in India organized on the 9th & 10th December 2019 at Maharashtra Institute of Technology in Pune, the chair holder presented a report on the activities of the Chair and had informative interaction for upholding the spirit of cooperation and promoting a value based education system.

The chair holder also participated in the UNITWIN SURVEY on " UNESCO HED Section Survey of UNITWIN/UNESCO Chair host Institutional responses to COVID 19" as requested by Peter J. Wells, Chief, Higher Education, ED/ESC/HED, UNESCO, Paris. Based on the agenda of value based education the chair holder submitted joint proposal with Dr. P.K.Nag, Professor, School of Environment & Disaster management of RKMVERI entitled " Man-making - the way forward of education development and delivery in the coming decades" for the UNESCO programme 'Futures of Education: Learning to become".

The other noteworthy activities of the chair holder are as follows:

1. Contributed in UNESCO HED Section Survey of UNITWIN/UNESCO Chair host Institutional responses to COVID 19.
3. Attended "Implications for the Global Higher Education Campus - COVID-19 education webinar #9" held on Friday, 15 May 2020 organized by UNESCO HED office.
4. Dr. Asis Goswami attended the Annual meeting of the UNESCO Chairs in India on Friday 12 March 2021 from 11.00 am - 1pm.
4. Attended the Annual meeting of the UNESCO Chairs in India on Friday 12 March 2021 from 11.00 am - 1pm.

**f) Others**

*(any other activities to report)*

**Inauguration of ATMAVIKAS :**

On 31 Oct, 2018, Most Revered Srimat Swami Smaranananda Maharaj, President of Ramakrishna Math and Ramakrishna Mission, inaugurated 'Atma-Vikas', a five-storeyed building devoted for the educational and research purposes and equipped with modern classrooms, conference room, and laboratories, such as exercise physiology, biomechanics, training method & gymnasium.

**Extracurricular Activities for imparting man- making values education:**

The Chair is also devoted to encourage differently-abled children for participation in extracurricular activities and also organize lectures on the ancient Indian philosophical scriptures on 'Karma Yoga' (action), 'Jnan Yoga' (knowledge), 'Bhakti Yoga' (devotion) and 'Raja Yoga' (meditation) for growing positive psychological attributes and qualities of selflessness in service, confidence, motivation, determination, resilience important in man-making and also promoting holistic development of mind and body. Some noteworthy events during this tenure were :

1. Organized an eventful week for Holistic Welfare of the Children from 14th-20th Nov, 2018. A number of activities were undertaken by Faculty of Disability Management and Special Education (FDMSE), Coimbatore Campus, in partnership with Ramakrishna Mission Vivekananda Educational and Research Institute (RKMVERI), Belur, West Bengal and globally with ARIGATOU International, Japan. The events included in this week were a nature walk, art and craft related activities, community orientation, cultural performance, storytelling, field trip, screening wildlife movies, practical exposure to adapted yoga and unified sports, and talk on self-help skills, safety measures, health and hygiene, and environmental care. A large number of children with disabilities had participated in this programme. A two-day training programme for parents of children with disabilities was also conducted along with this programme
2. Observation of International Day of Persons with Disabilities on 8th December 2018 at GKD Auditorium, SRK Vidyalaya in Coimbatore, where Dr. Sudha, Asst. Prof., FDMSE, welcomed the gathering. Swami Bakthivathananda, SRK Vidyalaya gave the benedictory address, Swami Divyaprajnananda Maharaj, Asst. Admin. Head, graced the occasion. The Chief guest of the programme was Mr. V.G. Jagadeesh, Web Developer & Graphic Designer, Coimbatore. Cultural and oratorical programmes were performed by children with special needs. Medals were distributed to children with disabilities who won first prize in various sports events. Persons with disabilities who are studying and working in Vidyalaya institutions were honored.

Teachers working for persons with disabilities were also honored. In total 132 persons with disabilities had participated in the event.

3. A 10-day internship to Krishnamacharya Yoga Mandiram (KYM), Chennai during December 2018 for PG Diploma students to complement the education imparted on various theoretical aspects of yoga.
4. A programme 'The Resurrection of Yoga' – Yogasanas demonstration was held at Belur Math on 12 & 17 March 2019. This programmed was also telecasted in DD Bangl and DD Urdu.
5. An event was organized by Italian Yoga Federation dedicated to their teachers and students. Swami Atmapriyananda, Vice Chancellor of RKMVERI, delivered a talk "Comments on the Bhagavad Gita" on 10 March 2019, in the Conference Room of the Embassy of India, Rome. Antonietta Rozzi visited the University and delivered a lecture in November 2018.
6. 4th International Day of Yoga was observed at the Belur Main Campus on 21 June 2018.
7. Yoga Camp in the State of Jharkhand. The students of PGDY course went to Ranchi campus of the university to conduct Yoga camps in different villages of Jharkhand state.

**Awards & Prize :**

Dr. K. Dhanalakshmi, received the State Award for Best Teacher for Visually Impaired by Department of Welfare of Differently abled Persons, Tamilnadu

**Other Prominent Activities:**

1. One of the future plan reported in last year's report was successfully established. Assistive Technology (AT) Laboratory has started its activities from this year at Faculty of Disability Management and Special Education (FDMSE). Important goal of this facility is to promote access to available AT devices, creates awareness and advocates by experiencing on usage, research and development towards empowerment in education through an inclusive environment. This would also help in employment generation and in daily living of persons with disabilities.
2. Disabled Sports Meet 2017: Faculty of GAPEY at Coimbatore campus and Sports Development Authority of Tamilnadu jointly organized Coimbatore District Level Sports and Athletic Meet for Disabled on 27.10.2017. A total of 157 persons with disabilities from 11 schools/institutions participated in various events for Physically Challenged, Visual Impairment, Hearing Impairment and Intellectually challenged. Sri H.S. Anandh, Proprietor, Lights and Lites, Coimbatore and Dr. R. Annadurai, Assistant Professor, Bharathiar University were the guests and distributed medals and certificates.
4. Leadership Training Camp 2017 – Faculty of General & Adapted Physical Education and Yoga, organised Leadership Training Camp 2017 at Sri Avinashilingam Krishi Vigyan Kendra, Vivekanandapuram from 22.10.2017 to 28.10.2017
4. The Chair was invited by the Ministry of Youth Affairs and Sports, Government of India, to

develop curriculum for different courses in the field of Sports Science and also to facilitate selection of priority areas of research to be funded by the Government.

**3. Future Plans and Development Prospects:**

*Outline of action plan for the next biennium and short/medium and long-term development prospects.  
Please do not hesitate to refer to difficulties that the Chair has experienced  
(Not exceeding 300 words)*

**Research Projects in the Next Four Years (2021-2025):**

Our future action plan has an immense outlook towards popularizing and promoting traditional contemplative Indian mind-body practices including yoga and martial arts in the Indian population for health and well-being. Our precise goals in the next four years are creating awareness on yoga and scientifically incorporating a section of our population suffering from intellectual, executive, movement-related disabilities, other socio-economically related vulnerable conditions and from lifestyle related chronic diseases. According to the Census in 2011, India has 2.21% of disabled population, of which 7.62% are children including physical, mental and sensory disabilities. This population faces difficulties in fulfilling their daily life activities due to several shortcomings in their physical, mental domains and need our constant support and assistance. Even worse is that the COVID-19 pandemic lockdown restrictions has led to a major problem in their regular developmental therapeutic routine and consultations. We will conduct few short-term projects during the period of next four years mainly focusing on understanding the effectiveness of yoga as an active goal-directed mind-body controlling practice and if it significantly works out to overcome their deficits in the neurocognitive and other related domains. It is now known from scientific literature that Yoga benefits a wide-range of mental and physical performances and promotes neuroplasticity through rigorous training in normal populations. Though little has been done on understanding if there is an equivalent effect in the brain and the mind of the children suffering from intellectual, motor-related disabilities or from children of very poor socio-economic background. So, our precise scientific research goals will be to look at the neuroanatomical association in these children with extreme socio-economic backwardness and disabilities and find out to what degree does mind-body interventions modify the influence of negative factors and promote mental, intellectual, cognitive growth and development necessary for self-sustenance. Besides expanding the interests in the areas of disability and adapted sports with inclusion of traditional Indian mind body practices and inclusion in curriculum of disabled children, we expect that the outcome of our projects in the long-term will be helpful and enriched with novel strategies and directions for large scale implementation of mind body techniques in promoting self-sustenance, self-dependence in vulnerable and disabled children of backward, rural and urban areas and including them in our sustainable economic growth equally.

Common musculoskeletal disorders (osteoarthritis, rheumatoid arthritis, fibromyalgia, gout, low back pain) related pain and disability management through a combination of ayurvedic treatment and yoga is our another future initiative. The work will commence in the rural areas of West Bengal where these disorders are very common. Chronic pain and movement related disabilities poses challenge to quality of life and can affect socioeconomic growth. It has been reported that rheumatic disease affects 15 million Indians every year from age of 30 to 50 years. Considering the growing number of people affected, it has been predicted that by 2025 India may have endemic of rheumatic diseases. These chronic diseases are not completely curable from conventional nonsteroidal anti-inflammatory drugs and may have side effects from long-term intake. Even in severe cases of rheumatic diseases sometimes expensive surgeries are common. In order to provide a low-cost yet effective treatment to the rural population where high treatment cost is unaffordable, our plan is to integrate Ayurveda along with adapted yogic practices for better lifestyle management and reducing chronic pain and disabilities. India's ancient traditional contemplative practices, Ayurveda and Yoga, can bring immense potential in offering effective treatment for a large number of low socioeconomic rural population.

Yoga as an important non-pharmacological, life-style management intervention has a well-established preventive, prophylactic and curative role in lifestyle related diseases like cardiovascular diseases and diabetes in a systematic way. Ayurveda comprises low-cost multimodal components, nutritional therapy and herbs, manual therapies, life-style counselling and yoga-based exercises. Ayurveda is potentially an ideal multimodal therapeutic system to boost its inclusion globally as an efficient traditional system for global health care under recommendation of the World Health Organization (WHO). Our future project outline is reaching to the patients and providing them effective combinatorial treatment to treat pain, improve mobility and life-style in the patients with musculoskeletal disorders and at the same time collecting comprehensive scientific data of the treatment outcome on a significant population size.

### **Sports Centre for the Disabled**

(proposal booklet attached)

**Appendix:**

**1) Human Resources during the reporting period**

- a) Eight full time faculty, two Monastic faculty and two adjunct faculty are serving in Department of Sports Science and Yoga, Belur Campus.
- b) Nine full time faculty / staff are serving in Faculty of Disability Management, Coimbatore campus.
- c) Ten full time faculty / staff are serving in Faculty of General and Adapted Physical Education, Coimbatore campus.

**2) Financial Resources during the reporting period**

*Please tick sources of financial contribution and specify the amount in U.S. dollars*

|  | [tick]                              | Amount (\$)                                |
|--|-------------------------------------|--|
| Host Institution   | <input checked="" type="checkbox"/> | <b><u>1,16,90,000/- INR (approx.)</u></b>  |
| Partner Institution  | <input type="checkbox"/>            | _____                                      |
| Government Body  | <input checked="" type="checkbox"/> | <b><u>1,55,49,489 /- INR (approx.)</u></b> |
| Other Public Institution/Body<br>(incl. Research Councils) | <input type="checkbox"/>            | _____                                      |
| UNESCO   | <input type="checkbox"/>            | _____                                      |
| Other UN Agency  | <input type="checkbox"/>            | _____                                      |
| IGO  | <input type="checkbox"/>            | _____                                      |
| NGO  | <input type="checkbox"/>            | _____                                      |
| Industry   | <input type="checkbox"/>            | _____                                      |
| Other Private  | <input type="checkbox"/>            | _____                                      |