REPORT

Report on participation of the ICMR International Fellow (ICMR-IF) in Training/Research abroad.

1.	Name and designation of ICMR- IF	Dr Fouzia Siraj
2.	Address	ICMR-National Institute of Pathology, Safdarjung Hospital Campus New Delhi-110029
3.	Frontline area of research in which training/ research was carried out	Artificial intelligence in Pathology
4.	Name & address of Professor and host institute	Dr. Nasir M. Rajpoot, Director, Tissue Image Analytics (TIA) Center, Dept. of Computer Science, University of Warwick, United Kingdom.
5.	Duration of fellowship with exact date	6 weeks from 30-03-23 to 10-05-23
6.	Highlights of work conducted	
i)	Technique/expertise acquired	Basic training in Artificial Intelligence and machine learning for Pathology. It encompassed the scope of application, strengths, and limitations of machine learning in a Pathology diagnostic and research lab
ii)	Research results, including any papers prepared/submitted for publication	**A) Initiation of work on the project entitled: "Application of Artificial Intelligence in molecular subtyping of gliomas"** Study Hypothesis: Early determination of IDH status may guide surgical treatment plans, preoperative counseling and choice of adjuvant management plans in gliomas Aim: To develop deep learning algorithms to non-invasively predict IDH status in low grade and high- grade gliomas Work done: • Preliminary analysis of data from publicly available cohorts (TCGA and TCIA)

		• Collation of relevant information from the data • Selection of representative images (800) for the training set **B) Pilot study conducted on the standardization of triple staining method for Ki-67 and IDH 1 in gliomas.** • The usefulness of this method will be explored for developing AI based tools to detect IDH mutation in gliomas and estimate the proliferative activity. **C) Contribution to pathology annotations in 3 projects related to** 1. Endometrial cancer 2. Growth patterns in lung cancer 3. TLS identification and characterization in head and neck squamous cell carcinoma
iii)	Proposed utilization of the experience in India	**1)Development of indigenous AI based pathology solutions for diagnostics and prognostics:** Development, promotion and regulation of AI based algorithms on digitized pathology data for research, diagnostics and education **2)Establishment of a Digital Pathology image bank of well-annotated data:** Image bank prepared at ICMR-NIP would serve as publicly available Indian database for pathology images and would aid in educational and research activities pan-India. 3) An initiative has been undertaken to have future collaboration between the parent and host institute in the area of Artificial Intelligence research. Meanwhile I am collaborating with them in several projects as a pathology expert

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