

REPORT

1. Name and designation of ICMR-IF : **Dr. K. Ramanathan, Professor.**
2. Address : Department of Biotechnology,
School of Biosciences and Technology,
Vellore Institute of Technology, Vellore, TN-632014.
3. Frontline area of research in which training/research was carried : Molecular simulation studies & NGS data analysis:
A case study with NSCLC.
4. Name and address of Professor and host institute : **Dr. Daisuke Kihara, Professor,**
Department of Biological Sciences,
Purdue University, West Lafayette,
IN – 47907.
5. Duration of fellowship : Six Months (Dec 2018 to June 2019).
6. Highlights of the work conducted :
 - I. Techniques/expertise acquired : RNA-Seq Analysis and PL-PatchSurfer2
 - II. Research results, including any papers prepared/submitted for publication
 1. **K. Ramanathan, Sayoni Maiti, V. Shanthi, Woong-Hee Shin, and Daisuke Kihara** (2019) Implementation of Pharmacophore-based 3D QSAR model and scaffold analysis in order to excavate pristine ALK inhibitors, Medicinal Chemistry Research (Revised version submitted). **Impact Factor: 1.720**
 2. **K. Ramanathan, Sayoni Maiti, V. Shanthi, Woong-Hee Shin, and Daisuke Kihara** (2019) Current progress and future perspectives of polypharmacology : From the view of NSCLC, Seminars in Cancer Biology, In preparation. **Impact Factor: 9.658**
 - III. Proposed Utilization of experience in India:
 1. Proposed to develop High end computing facility to facilitate the analysis of RNA-Seq data of cancer patients with primary foci on differential gene expression analysis.
 2. Proposed to develop an algorithm to predict lung cancer in early stage by deep learning application utilizing digital pathology data.