

## REPORT

### Report on ICMR International Fellow's (ICMR-IF) participation in Training/Research abroad.

1. **Name and Designation of ICMR- IF:** Dr. Balamurugan Ramadass, Additional Professor
2. **Address:** #149, First floor, Academic Building, Department of Biochemistry, AIIMS Bhubaneswar, Bhubaneswar, Odisha
3. **Frontline area of research in which training/research was carried out:** Gut-Bone Axis
4. **Name & address of Professor and host institute:** Prof Solomon Lucien Bogdon, Department of Trauma and Orthopaedics, Royal Adelaide Hospital, Adelaide, Australia.
5. **Duration of fellowship with exact date:** 4 weeks (06<sup>th</sup> February 2023 to 6<sup>th</sup> March 2023)
6. **Highlights of work conducted** :
  - i) **Technique/expertise acquired:** During my Short visit:
    - a. We identified evidence of microbes in different sections of bone. The Periprosthetic joint infection (PJI) bones mainly had more bacteria (yet to be characterized) than those from traumatic fractures.
    - b. Developed three Collaborative Projects between the two teams:
      - i. Does Vitamin K Affect Bone Microarchitecture?
      - ii. Is Gut Dysbiosis responsible for Prosthetic Joint infections?
      - iii. Next-generation sequencing as a Precision Medicine Tool in treating and managing Patients with Prosthetic Joint infection.
  - ii) **Research results, including papers prepared/submitted for publication:** PJI Signals, a chronic infection needing revision surgery, and elderly bone health, are the research focus at RAH, Adelaide. Immediate outcomes are that I will be an external guide for a Ph.D. candidate working on PJI and Gut Microbiome. We will mutually benefit from collaborating on this. Immediately, before June We will submit a Joint Systemic review article.
  - iii) **Proposed utilization of the experience in India:** Gut-Bone axis is unexplored in the context of Antibiotic use, hygiene & nutrition conditions, gut microbiome, and infections in two different populations. This can be developed as a Bilateral Research Proposal. Immediately, I am preparing a Proposal addressing the Gut-Bone axis in Post Menopausal Women to be submitted for funding in India.

Signature of ICMR-IF

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