

Fellowship Profile

IAEA PROGRAMS
AT ARGONNE NATIONAL LABORATORY

Building National Nuclear Legal
Infrastructures

TRAINING SUMMARY

I, along with a colleague from Portugal, participated in a 3 month fellowship at the Center for Disease Control (CDC) in Atlanta Georgia. The major elements of the training program included among other topics:

- 1) Culturing and Maintaining Long Term Stocks of *Leptospira* Species: We have learned the basics of culturing and sustaining long-term stocks of *Leptospira* species.
- 2) Isolation of Nucleic Acids and Inactivation of *Leptospira* Species: This aspect centered on isolating DNA from *Leptospira* species, a process necessary for subsequent sequencing applications.
- 3) Preparation of Libraries for Bacterial Whole Genome Sequencing: We were trained in library preparation techniques specifically adapted for DNA whole genome sequencing using Illumina platforms.

Overall, the training program offered a comprehensive overview combining laboratory techniques with bioinformatics analysis, providing us with a thorough understanding of the genomics of *Leptospira* species. We were also provided instruction and hands-on experience in every aspect of the sequencing process and bioinformatics analysis, ensuring a solid foundation in microbial genomics. This training has not only expanded my technical proficiency but also deepened my understanding of microbial genomics and its applications in public health and biomedical research.

WHATS NEXT?

Equipped with proficiency in culturing *Leptospira* species, sample preparation, operating MiSeq instruments, and bioinformatics analysis, I anticipate utilizing these skills in various ways in my home country: Enhancing Disease Surveillance and Outbreak Response, Strengthening Epidemiological Investigations, Advancing One Health Initiatives: Collaborating with veterinary and environmental health authorities. Recognizing the continuous learning journey in bioinformatics, I am committed to ongoing education and professional development in this field. Leveraging resources such as online courses and workshops, I aim to further enhance my skills and contribute to addressing pressing health challenges in my country.



“The training in whole genome sequencing with MiSeq technology and subsequent bioinformatic analysis has been transformative, significantly boosting my professional capabilities and career trajectory.”

Iva Benvin- Croatia

February 26th to May 24th 2024

**Hosted by: U.S. Centers for Disease Control
and Prevention**