



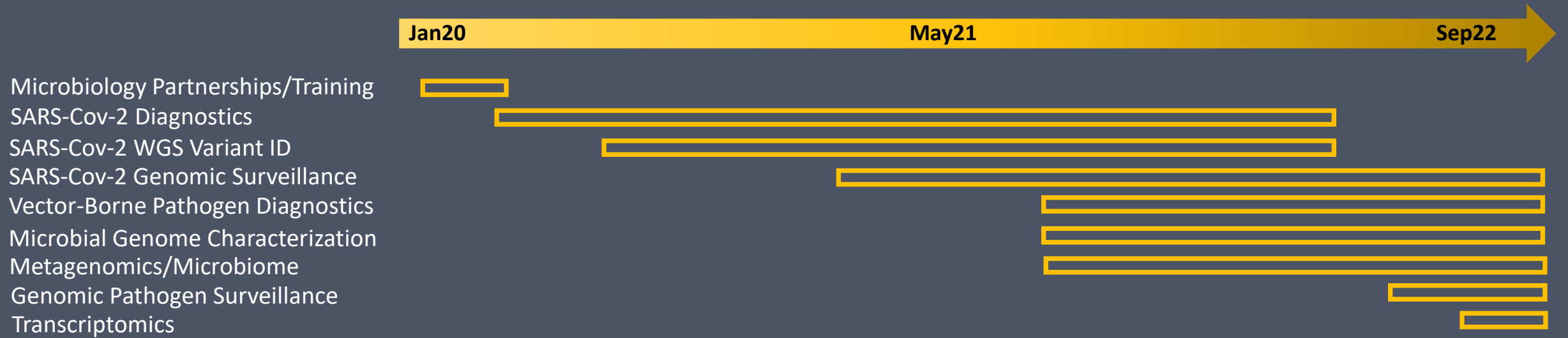
OSU Infectious Diseases Institute AMSL Genomics Lab:

Supporting Microbial Genomic Research In Foods For Health And Beyond

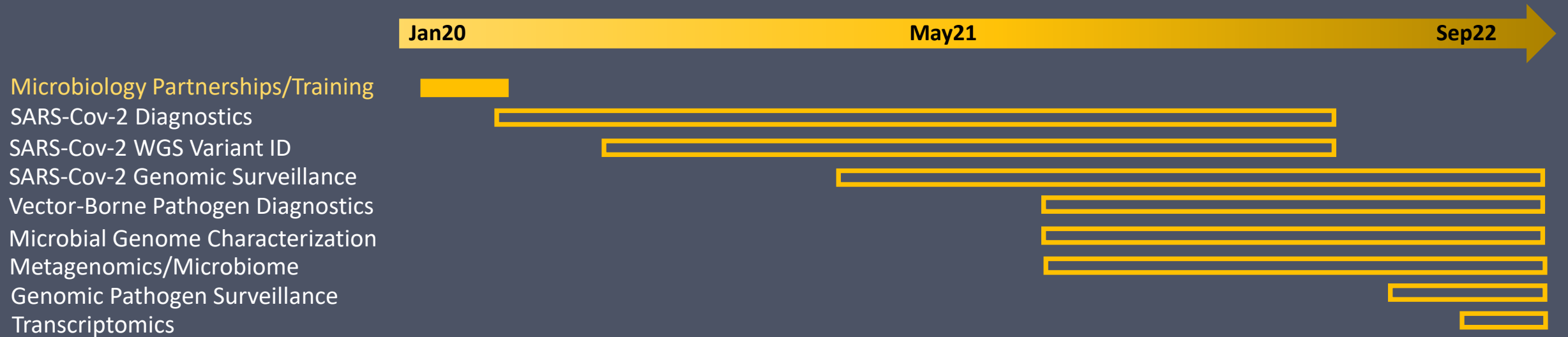


DEPARTMENT OF MICROBIOLOGY

History of Applied Microbiology Services Lab (AMSL)

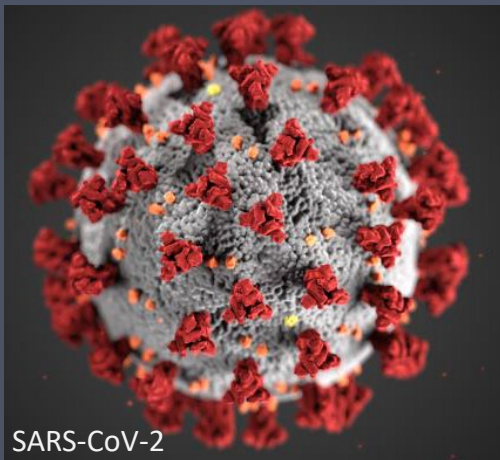
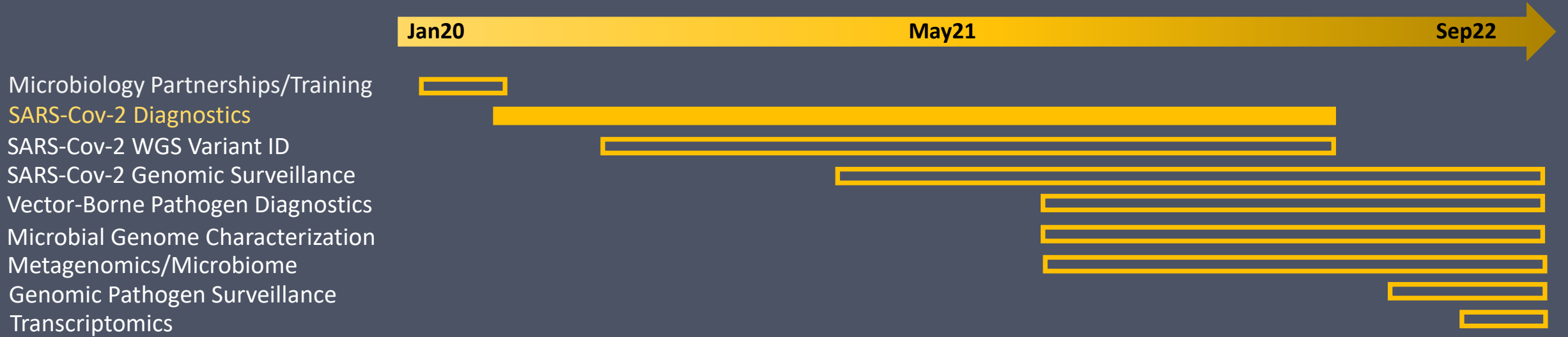


History of Applied Microbiology Services Lab (AMSL)



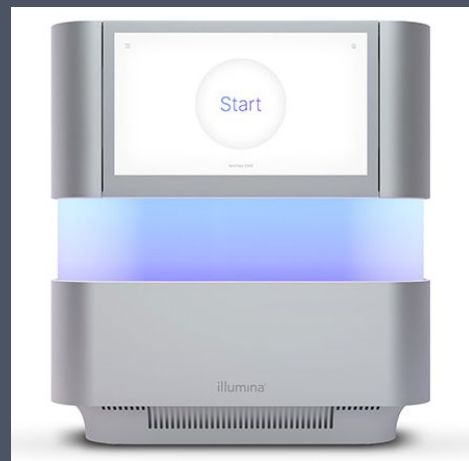
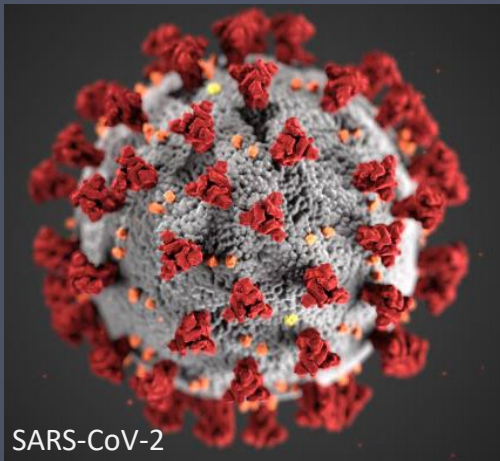
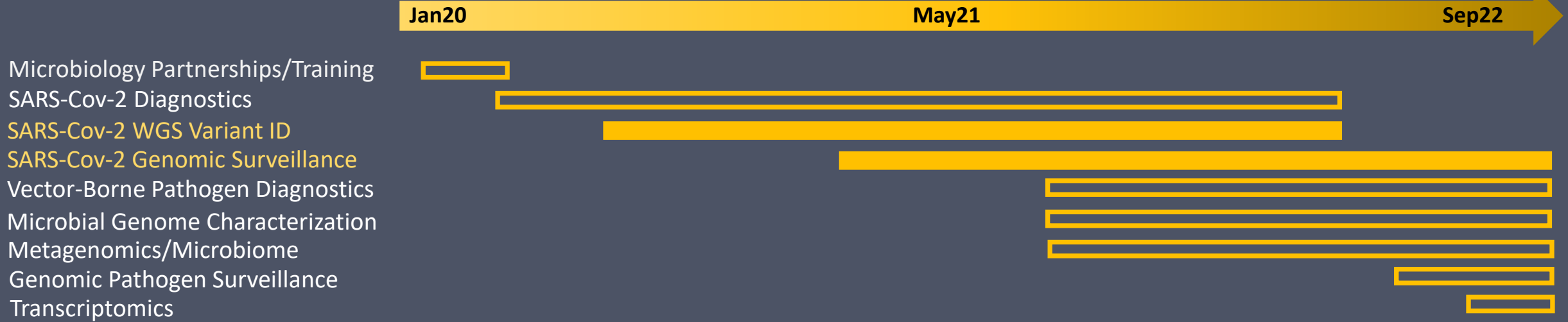
- Started with microbiology focus
- Partner with industry
- Train students

History of Applied Microbiology Services Lab (AMSL)



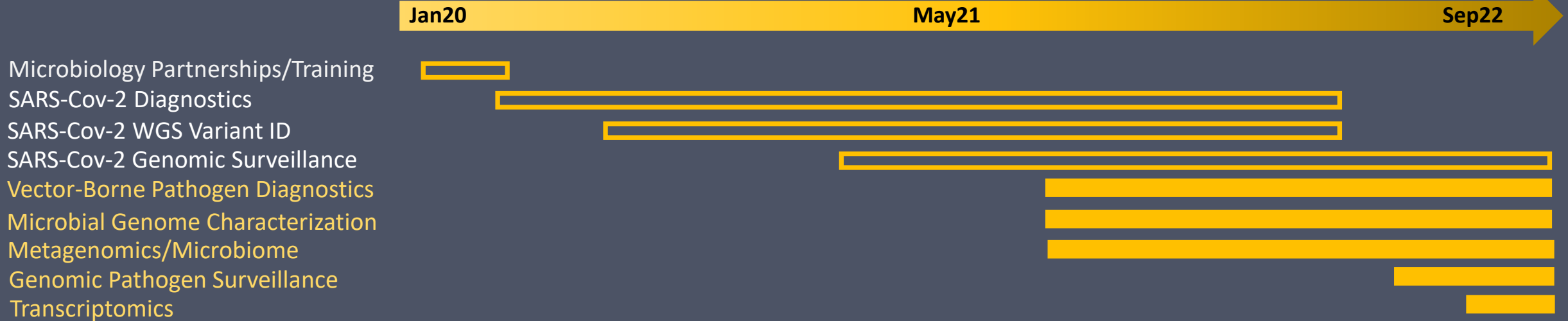
- CLIA compliant SARS-CoV-2 diagnostic lab
- 18 qRT-PCR instruments
- >800,000 same-day qRT-PCR tests performed; >\$100M savings to OSU
- >80 staff trained, many OSU students

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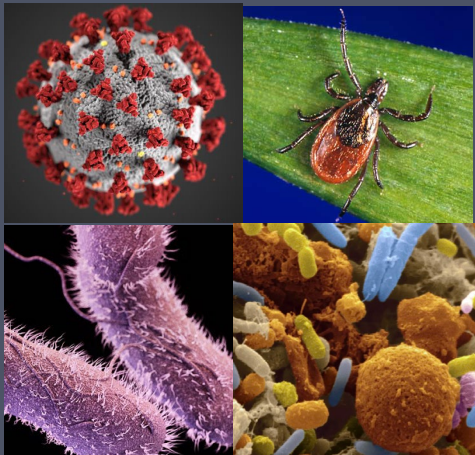


- SARS-CoV-2 variant identification by whole genome sequencing (WGS)
- 2 NextSeq 2000 high-throughput DNA sequencers

History of Applied Microbiology Services Lab (AMSL)

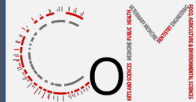


Microbiology Partnerships/Training
SARS-Cov-2 Diagnostics
SARS-Cov-2 WGS Variant ID
SARS-Cov-2 Genomic Surveillance
Vector-Borne Pathogen Diagnostics
Microbial Genome Characterization
Metagenomics/Microbiome
Genomic Pathogen Surveillance
Transcriptomics



- Post SARS-CoV-2 diagnostic wave, leveraging resources to more broadly support and perform microbial genomics research.
- >30 microbial genomic/microbiome studies supported in last ~1 yr

AMSL Example Current Activities & Partnerships

- **Metagenomics/Microbiome**
 - Metagenomic analysis from plant, animal, human, & environment
 - MICROBS Bioinformatic Pipeline through partnership with OSU's 
- **Characterization of Microbial Genomes**
- **Environmental Surveillance of Pathogens**
 - Ohio wastewater monitoring
 - Animal & plant disease surveillance
 - Indoor dust surveillance
- **Vector-Borne Diseases**
 - Tick-borne pathogen testing (Coming Soon!)
- **Bacillus Genetic Stock Center**
 - Distribute *Bacillus* strains to facilitate research to institutions around the world



What AMSL Can Offer

Services

- Genomic sample prep & sequencing
- Bioinformatic analysis services
- Vector-borne disease testing

Consultation/Collaboration

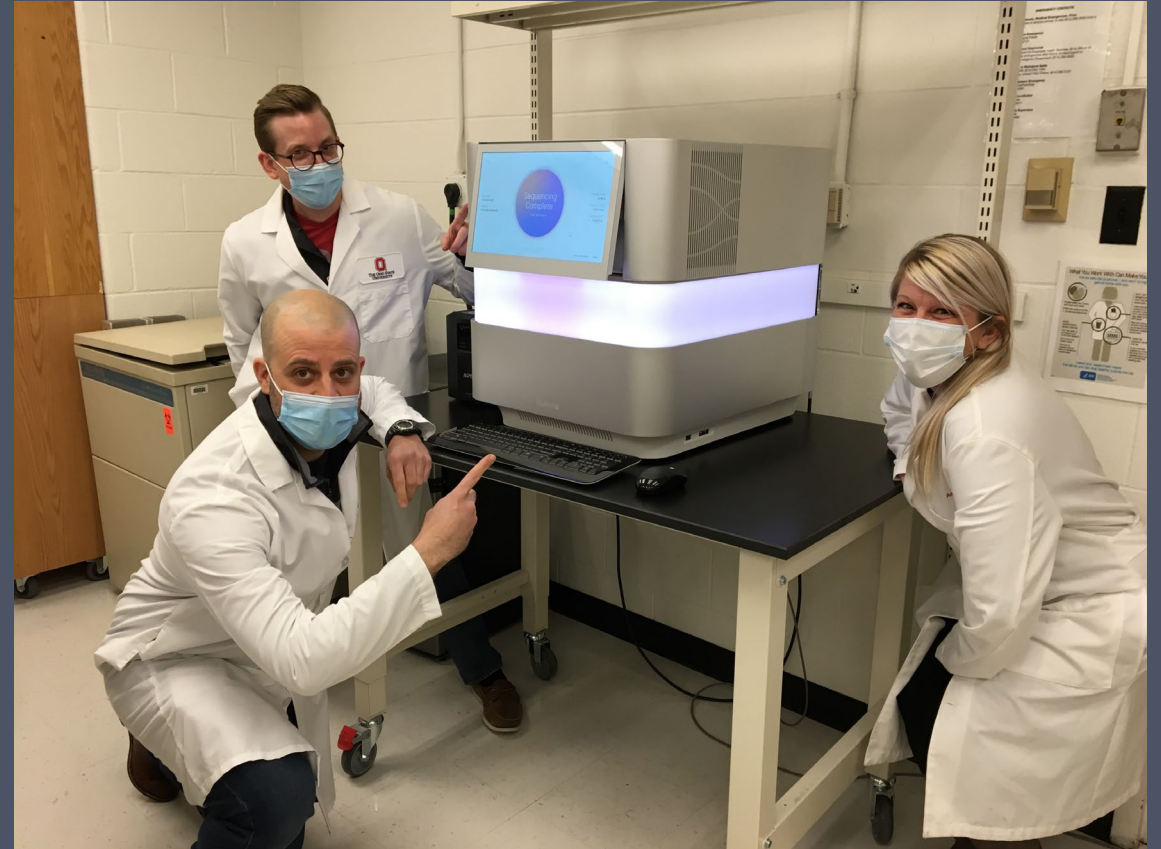
- Study design
- Data generation
- Data Analysis/
Bioinformatics

Resources

- Custom bioinformatic tools/pipelines, esp. for metagenomics
- Illumina NextSeq 2000
- Biosafety level 1/2 labs equipped to work with bacteria, fungi and viruses
- Bacillus Genetic Stock Center (BGSC)

Summary

- AMSL represents a partnership between OSU's Dept of Microbiology and Infectious Diseases Institute.
- Here to partner with and support the microbiology community at OSU and beyond.



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