



## Applied Research Center (ARC)

Laboratory Overview



The NSF International (NSF) world headquarters is located in Ann Arbor, Michigan. The state-of-the-art 150,000 square foot building was constructed in 1999 specifically to support our operations. In 2007, an 80,000 square foot building expansion was completed encompassing 165,000 square feet of modern laboratories. NSF is ISO/IEC 17025 accredited by the International Accreditation Service and the Standards Council of Canada, and is also an accredited lab for "Test Method Development & Evaluation and Non-Routine Testing." It is also an OSHA Nationally Recognized Testing Laboratory.

The staff consists of highly skilled professional chemists, microbiologists, engineers, toxicologists and other scientists with Ph.D., master and bachelor level degrees in a variety of scientific disciplines. With many years of combined experience, our staff is able to provide a broad range of services to our clients.

NSF's ability to offer services not available elsewhere is continually growing. Contact us for more information on specific capabilities.

### Chemistry Laboratory Capabilities

Traditional analyses are performed according to internationally accepted methods including U.S. EPA, U.S. FDA, AOAC, USP and ASTM. These include standard volatile and semi-volatile organic, wet chemistry and trace metals analyses. In addition, we employ a variety of liquid chromatography methods. The diversity and expertise of NSF's chemistry staff has allowed us to develop new analytical methods to specifically meet our client's growing needs. We offer the execution of studies utilizing Good Laboratory Practice (GLP) protocols.

*Our extensive list of analytical instrumentation includes:*

- » GC
- » GC/MS
- » GC/MS-MS
- » ICP/AES
- » ICP/MS
- » LC/MS
- » LC/MS-MS
- » HPLC
- » IC

Stability studies can be executed utilizing environmental chambers operated according to ICH guidelines.

## Microbiology and Molecular Biology Laboratory Capabilities

The NSF laboratory team offers microbiological testing and consultation expertise to service a wide range of industries including: food, water, clinical, environmental, health science and consumer products.

Since 1944, we have provided a broad range of services including aerobic and anaerobic microbiology, antimicrobial efficacy claim evaluation, cellular and molecular biology, mycology, virology, and parasitology. The laboratory tests to multiple established methods: EPA, FDA, ISO, AATCC, USDA, AOAC, ASTM, APHA, USP and international standards.

Our extensive background offers a unique perspective for servicing our clients' research and development needs. Ongoing services include method development and participation in validation studies for the U.S. EPA, Health Canada, ISO, AOAC, U.S. FDA and other international and private organizations.

The Micro Laboratory operates individual specialized sub-laboratories with state-of-the-art equipment and methods. Laboratory capabilities include:

- **NSF Genomic and Bio-informatics Laboratory**
  - Next generation sequencing; qPCR
  - Microbial population and diversity studies
  - Point source mapping for biological contamination
- **Virology**
  - Focus on enteric foodborne and waterborn viruses including norovirus, poliovirus, rotavirus and adenovirus
- **Cell culture / microbial toxicity**
  - In vitro toxicology (mutagenicity and genotoxicity); cell culture infectivity assays
- **Biofilm assessment**
  - Protocol development for verifying biofilm prevention and disinfection efficacy claims
- **Organism characterization**
  - Antibiotic susceptibility testing
  - Virulence factor analysis
  - Biochemical and molecular fingerprinting for specie and strain identification
- **Research and development**
  - Custom method development and product design assessment

To learn how ARC can support your business, contact [arc@nsf.org](mailto:arc@nsf.org) or visit [www.nsf.org/info/arc](http://www.nsf.org/info/arc)