

JOHN MURRAY NEVILLE, Ph.D.

Work:

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Summary of Professional Experience

I have over 35 years of experience in mycological/microbiological research, teaching, and supervising, and over 17 years as director of a commercial microbiology laboratory that generates revenue primarily by assessing building materials and air samples for mold amplification. I have extensive knowledge in mycology, fungal identification, indoor environment quality (IEQ) assessment, microbial sampling protocols, fungal and terrestrial ecology, microbiology, plant taxonomy, botany, ecology, biology, mycotoxin analysis, experimental design, and biostatistics.

My management expertise includes running own consulting business, supervision of laboratory analyses, quality control (QC) and assurance (QA), hiring and training, writing standard testing and operating procedures, business development, hosting site audits, litigation support, client services, microbiology consulting, biosafety, giving technical and business presentations, and laboratory QA policies by the American Industrial Hygiene Association (AIHA) and International Standards Organization (ISO 17025).

I volunteer my expertise and serve on committees for professional organizations that help standardize analytical methods or help improve laboratory QA policies. The committees include 1. Analytical Accreditation Board (AAB) of AIHA Laboratory Quality Assurance Program (LQAP), LLC; 2. Technical Advisory Panel (TAP) for the Environmental Microbiology Laboratory Accreditation Program (EMLAP) of AIHA Laboratory Quality Assurance Program (LQAP), LLC; and 3. American Society for Testing and Materials (ASTM) subcommittee D22.08 (Sampling and Analysis for Mold).

I have considerable experience or knowledge in the following areas:

- Identification and classification of mold and other fungi
- Microbiology
- Plant taxonomy, anatomy, and ecology
- Fungal ecology in an indoor and outdoor environment
- Conventional culturable/microscopic and molecular protocols for identification and enumeration of fungi and bacteria
- Standard and EPA methods/guidelines for sampling and analyzing bacteria
- ISO 17025 and USP 29, 61, 62, 71, and 797
- Mycotoxin identification, detection, and quantification with LC/MS/MS technology
- Microbial sampling protocols within an indoor and outdoor environment
- Microbial growth, biocontamination, and bioaerosols
- Microbial culture collection maintenance
- Mushroom cultivation
- Building structure, materials (i.e., porous, semi-porous, non-porous), air movement, water activity, relative humidity, heating, and ventilation
- Indoor environment quality
- Outdoor conservation practices

- Biostatistics (i.e., Gaussian, nonparametric, power analysis, and rank order) and experimental design
- Laboratory quality control and quality assurance practices
- Biosafety practices
- Laboratory Information Management System (LIMS) software
- Teaching/training principles and protocols for mycology, microbiology, ecology, botany, and genetics
- Writing standard testing and operating procedures
- Presenting talks or professional development courses at meetings
- Microbial consultative support for special projects
- Litigation support as microbiology expert witness
- Laboratory business management and development
- Hosting site assessor audits
- Policies by accrediting bodies such as American Industrial Hygiene Association (AIHA), International Standards Organization (ISO), and Environmental Protection Agency (EPA)
- Project management
- Client services

Project Experience

- Mycological and Microbiological Consulting – Involved numerous projects such as consumer product testing, mushroom growing, bioreactor design, antimicrobial and biocide efficiency testing, secondary metabolite detection and analyses, microbial analytical protocol development, IEQ investigations, and sample analyses.
- Mold Sampling and Indoor Environmental Quality Training – Employed by Corporations and Professional Organizations to give seminars on how to sample for mold and other microorganisms indoors and how to remediate mold damage in buildings.
- Indoor Environmental Quality Consultant – Provided litigation support on several occasions to review and evaluate reports of mold investigations, and help educate and prepare attorneys for cross examination on the content of the reports. Have been retained as expert witness in legal cases involving indoor mold contamination and environmental quality in states of Alabama, Illinois, and Michigan.
- Consumer Product Consultant – Hired as a neutral party to review, investigate, advise, and design a microbial sampling protocol and environmental monitoring program to test the efficacy of a patented anti-microbial agent on new innovative industrial air handling unit that is prone to mold contamination. I also have extensive consulting experience advising foreign manufacturing companies in proper climate control and packaging practices that should be undertaken before products get imported to North America to minimize microbial growth.
- Laboratory Supervision – Responsible for operation management and training of staff of mycology, microbiology, and soil ecology laboratories at the University of Guelph and University of Waterloo, Canada. Duties included ensuring good laboratory organization, cleanliness, equipment maintenance, and training staff analysts on microbiological techniques and theory.
- Laboratory Teaching – Responsible for instructing, teaching, and grading undergraduate students on the laboratory components of many biological courses that include mycology, microbiology, botany, genetics, and introductory biology at the University of Guelph and University of Waterloo, Canada.
- Research Programs – Responsible for designing, scheduling, and implementing fungal and soil ecological experiments for both indoor and outdoor environments. Responsible for creating a fungal identification computer program and database using Visual Basic and LivePage (SGML) at the University of Waterloo, Canada.

Education

Ph.D., Fungal and Soil Ecology, 2001
University of Guelph, Guelph, Ontario

M.S., Mycology, 1995
University of Waterloo, Waterloo, Ontario

B.S., Science, 1991
University of Waterloo, Waterloo, Ontario

Employment History

Mycologic Consulting, LLC – South Lyon, Michigan

CEO, Senior Project Manager, Senior Consultant
2018 to present

- Responsible for financial profit and loss.
- Responsible for writing business proposals for clients.
- Function as the approved signatory on reports.
- Provide top quality microbiological consulting services to building owners, attorneys, industrial hygiene community, occupational and safety groups, and consumer product safety and testing companies.
- Perform investigations related to IEQ and consumer product testing that relate to mold and bacteria.
- Collect and analyse samples for mold and other microorganisms.
- Responsible for writing standard operating and testing protocols.
- Develop custom microbiological protocols for client special projects
- Provide technical presentations at conferences.
- Provide education in the selection and use of bioaerosol, surface, fluid, and raw material sampling methods.
- Act as an expert witness in litigation support (civil law) relating to mold, IEQ, and consumer product microbial investigations.

Bureau Veritas North America, Inc. – Novi, Michigan

Technical Director, Senior Mycologist
2007 to 2018

- Directs day-to-day operation of microbiology department.
- Responsible for financial profit and loss.
- Provide technological advice and microbiology knowledge that is required for running the laboratory.
- Provide the necessary resources needed to ensure the required quality of laboratory operations.
- Responsible for hiring and training staff and ensuring their safety.
- Function as the approved signatory on reports.
- Provide top quality microbiological and mycotoxin analytical services to the industrial hygiene community and occupational and safety groups.
- Provide clients with data interpretation and ensure customer satisfaction.
- Responsible for writing standard operating and testing procedures.
- Host site assessor audits.
- Guide the quality control program for microbiology department.
- Responsible for research and development and pursuing new innovations to help grow the company.

- Provide technical presentations at conferences.
- Responsible for writing business proposals for clients and new services.
- Provide education in the selection and use of bioaerosol, surface, fluid, and raw material sampling methods.
- Act as an expert witness in litigation support (civil law) relating to mold and IEQ investigations.

Clayton Group Services a Bureau Veritas Company – Novi, Michigan

Technical Director, Senior Mycologist

2005 to 2007

- Have same responsibilities and duties as employment with Bureau Veritas North America, Inc.

PK-Jarvis Microbiological, LLC – Novi, Michigan

Technical Director, Senior Mycologist

2001 to 2005

- Responsible in developing this microbiology company from it's very beginning.
- Have same responsibilities and duties as employment with Bureau Veritas North America, Inc.

University of Guelph – Guelph, Ontario, Canada

Department of Botany, Fungal and Soil Ecology Laboratory

Ph.D. Student, 1996 to 2001

- Thesis Title: Effects of Nitrogen Deposition on Mycorrhizal Functioning in Forests Dominated by *Populus tremuloides*
- Studied effects of nitrogen deposition on soil, fungal based food webs in forests dominated by *Populus tremuloides*.
- Designed and executed a microbial ecology fertilizer field experiment in a boreal forest.
- Supervised, scheduled, and trained many OWS undergraduate employees in soil and root microbiology analyses to meet timeline of research study.
- Published papers and presented mycological and microbiological research findings.
- Laboratory teaching assistant in Biology 1 (15-103), Biology 2 (15-104), Introduction to Plant Biology (17-115) and Fungi (17-320).
- Received 1999-2000 Graduate Teaching Assistant Award in Biology 1 (15-103) and Biology 2 (15-104).

University of Waterloo – Waterloo, Ontario, Canada

Department of Biology, Environmental Information Systems Project Lab

Research Assistant, 1995 to 1996

- Designed and programmed a standard identification protocol in Microsoft Windows using Visual Basic and SGML (a database markup language).
- Programmed macroscopic and microscopic characteristics, and photographs of Canadian gilled mushroom genera into a Microsoft Windows fungal classification database.
- Programmed macroscopic and microscopic characteristics, and photographs of Canadian gymnosperm species into a Microsoft Windows conifer tree classification database.

University of Waterloo – Waterloo, Ontario, Canada

Department of Biology, Mycology Laboratory

M.S. Student, 1993 to 1995

- Thesis Title: A Computerized Approach to the Identification of Canadian Genera of Gilled Mushrooms

- Designed and developed a computerized approach to the identification of gilled mushroom genera of Canada (research assistant).
- Gained extensive knowledge in mushroom and mold taxonomy and ecology.
- Analysed the genus classification concept of gilled mushrooms.
- Published papers and presented mycological and microbiological research findings.
- Laboratory and field teaching assistant in advanced mycology, introductory microbiology, genetics, and plant anatomy.
- Studied Advanced Mycology, Advanced Evolution, Advanced Photobiology, and Advanced Limnology

University of Waterloo – Waterloo, Ontario, Canada

Department of Earth Science, Groundwater Research Laboratory

Laboratory Technician, 1992 to 1993 (part time)

- Operated elemental analyzer to measure percentage of H, N, C, and S.
- Operated Dohman analyzer to measure % concentration organic and inorganic C in water.
- Measured alkalinity of water samples via sulfuric acid titrations.
- Ensured that all equipment ran well (i.e. maintenance) and detection limits were accurate.

University of Waterloo – Waterloo, Ontario, Canada

Department of Biology, Mycology Laboratory

Research Assistant, 1991 to 1992

- Executed numerous protocols for extraction, identification, culturing, and preparation of terrestrial fungi to meet research target dates.
- Developed computer key database of fungal taxonomy with AskSam (database software).
- Operated and maintained Zeiss photo-microscope and Nikon phase microscope
- Photographed and developed film and prints of many newly described mold species for publication purposes.
- Managed laboratory supplies and operation for its mycology research program.

University of Waterloo – Waterloo, Ontario, Canada

Department of Biology, Mycology Laboratory

B.S. Honours Student, 1986 to 1991 and Research Thesis, 1990 to 1991

- Thesis Title: Abundance and Distribution of Endomycorrhizae (VAM spores) in a Beech-Maple Forest
- Designed and performed a one-year project for assessing fungal ecology in soil dominated by deciduous trees.
- Studied microbiology, mycology, soil ecology, botany, plant taxonomy, plant anatomy, plant physiology, plant ecology, phycology, ecology, population and community ecology, field ecology, biostatistics, microbial ecology, fermentation biology, genetics, environmental adaptation, entomology, cell biology, vertebrate zoology, invertebrate zoology, limnology, marine biology, human physiology, evolution, computer science, computer programming, organic chemistry, physics.
- Gained extensive experience in field sample collecting and lab techniques for soil microbiology analysis.

Etobicoke Board of Education – Etobicoke, Ontario, Canada

Computer Laboratory

Computer Programming Assistant (B.S. co-op program), Sept. 1987 to Dec. 1987

- Programmed, debugged, and analysed programs on the Icon computer and Commodore 64.
- Responsible for connecting up Icon computer network systems in schools.
- Responsible for testing new hardware technology and presenting how it can be utilized for education to senior staff.

May & Baker – Burlington, Ontario, Canada

Agricultural Chemical Production Facility

Production Assistant (B.S. co-op program), Jan. 1987 to April. 1987

- Responsible for maintaining production schedule.
- Supervised and ensured the mixing and batching process of fertilizer, fungicide, herbicide, and pesticide resulted in accurate product.
- Operated, monitored, and maintained facility packaging equipment to prevent machinery breakdown or failure.

Awards and Scholarships

AIHA Laboratory Accreditation Programs, LLC Outstanding Service Award, 2015. For leadership and outstanding contributions to AIHA-LAP, LLC Analytical Accreditation Board.

Committee D22 on Air Quality Award of Appreciation. 2014. For Outstanding Service to ASTM Committee D22.08 and for acting as Technical Contact and leading the development of ASTM D7910 Standard Practice for Collection of Fungal Material from Surfaces by Tape Lift.

Committee D22 on Air Quality Award of Appreciation. 2013. For Outstanding Service to ASTM Committee D22.08 and for acting as Technical Contact and leading the development of ASTM D7789-12 Standard Practice for Collection of Fungal Material from Surfaces by Swab.

Newton Whitman Award. 2005. For Laboratory Quality Assurance Programs Reviewer of the Year, AIHA

Graduate Teaching Assistant Award. 1999-2000. Department of Botany, University of Guelph, Guelph, Ontario. (no monetary value)

Sigma Xi Research Grant. 1999. University of Guelph

University of Guelph Graduate Scholarship. 1998. University of Guelph.

Arthur D. Latornell Graduate Scholarship. 1997. University of Guelph.

Elgin Card Scholarship in Terrestrial Animal Ecology. 1997. University of Guelph.

Arthur Richmond Memorial Scholarship. 1997. University of Guelph

Professional Affiliations

American Society for Testing and Materials (ASTM) - on subcommittee D22.08; Sampling and Analysis for Mold (2007 to Present)

American Conference of Governmental Industrial Hygienists (ACGIH) (2003 to 2006)

American Industrial Hygiene Association (AIHA) (2002 to Present)
Michigan Industrial Hygiene Society (MIHS) (2004 to Present)
North American Mycological Association (NAMA) (2002 to Present)
The Mycological Society of America (MSA) (2002 to Present)
Indoor Air Quality Association (IAQA) (2010 to 2020)
International Society of Indoor Air Quality and Climate (ISIAQ) (2011)
Analytical Accreditation Board (AAB) in AIHA Laboratory Quality Assurance Program (LQAP), LLC (2010 to 2015)
Technical Advisory Panel (TAP) for Environmental Microbiology in AIHA Laboratory Quality Assurance Program (LQAP), LLC (2004 to 2009)
Environmental Microbiology Laboratory Accreditation Program/Environmental Microbiology Proficiency Analytical Testing (EMLAP/EMPAT) Task Force in AIHA Laboratory Quality Assurance Program (LQAP), LLC (2002 to 2009)
Steering Committee for American Association of Bioanalysts (AAB) Environmental Microbiology Analyst (EMA) Certification (2006 to 2007)

Publications and Presentations

Neville, J. 2019. Air Quality Testing for Fungi, Bacteria. January/February. ASTM Standardization News. pg. 7.

Neville, J. 2014. Tape-Lift Fungal Material Collection. September/October. ASTM Standardization News. pg. 51.

Neville, J. 2013. Indoor Mold Biology, Sampling, Analysis. Presented at Nov. 26 Wayne State University Occupational and Environmental Health Sciences Program Fall Seminar Series, Detroit, Michigan.

Neville, J. 2013. Tape and Swab Sample Collection: New ASTM Standard Mold Sampling Practices. Presented at Oct. 24 ASTM Workshop on the State of Science and Best Practice in Mold Assessment, Sampling, and Analysis. Jacksonville, Florida.

Neville, J. 2013. Everything You Wanted To Know About Mold. Presented at Apr. 9 Michigan Industrial Hygiene Society (MIHS) Mold Round Table Discussion. Novi, Michigan.

Neville, J. 2011. Indoor Mold Biology, Sampling, and Analysis. Presented PDC at NJAIHA Northeast Industrial Hygiene Conference Professional Development Courses, Dec. 1, 2011, Edison, New Jersey.

Neville, J. 2010. Microbiology: Fungi (Mold) Classification, Terminology, Growing Conditions and Life Cycles. Presented at Sept. 16 meeting of The New Jersey Section of The American Industrial Hygiene Association (NJAIHA), Scotch Plains, New Jersey.

Neville, J. 2010. Laboratory Analysis: What You Should Know as a Field Investigator, AIHA QA/QC Policies, ASTM Methods, and Analytical Protocols. Presented at Sept. 16 meeting of The New Jersey Section of The American Industrial Hygiene Association (NJAIHA), Scotch Plains, New Jersey.

Neville, J., and Kurtz, K. 2009. Mycotoxin Overview, Sketches of some Mycotoxins produced by Indoor Fungi. Synergist: 11/09: 35-36.

Neville, J. 2009. A Laboratory Perspective on Indoor Mold and Its Analyses. Presented at Oct. 15 Michigan Industrial Hygiene Society (MIHS) Mini - Conference. Troy, Michigan.

Neville, J. 2009. A Comparison of Commercial Swabs for Microbial IEQ Investigations. Presented at July 13-15, 2009 Johnson Conference: Standardization of Mold Response Procedures. Burlington, Vermont.

Neville, J, Ruthe, K, and Rader, K. 2007. Educational Seminar Series on Industrial Hygiene, Pharmaceutical, and Microbiological Analyses and Sampling. Presented in Chicago to Illinois Chapter of AIHA.

Kurtz, K. and Neville, J. 2005. Analysis of Mycotoxins and Fungal Metabolites in the Indoor Environment by LC/MS/MS. Poster presented at 53rd ASMS Conference, June 5-9, 2005, San Antonio, Texas.

Neville, J. and Hodgson, M. 2005. Advanced Microbial Sampling and Analysis Course. Presented PDC at 2005 AIHce, May 21-26, Anaheim, California. (refereed)

Neville, J. and Kurtz, K. 2004. Mycotoxin Analysis of Samples Taken from the Indoor Environment. Presented at 2004 Anachem/SAS Symposium, November, Livonia Michigan. (refereed)

Neville, J., Hodgson, M., Epstein, P., and Rupkey, S. 2004. Power Bioaerosol Sampling. Presented at AIHce, May, Atlanta, Georgia. (refereed)

Hodgson, M. and Neville, J. 2003. Post Mold Remediation Inspection and Validation (Clearance). Presented at ACGIH Conference "Mold Remediation: The National Quest for Uniformity Symposium", November, Orlando, Florida. (refereed)

Neville, J.M., Stooksberry, T.M., and Hodgson, M. 2003. Sampling and Analysis of Mold and Other Fungi, March, Web Publication.

Neville, J., Tessier, J.L., Morrison, I., Scarratt, J., Canning, B., and Klironomos, J.N. 2002. Soil depth distribution of ecto- and arbuscular mycorrhizal fungi associated with *Populus tremuloides* within a three year old boreal forest clear-cut. Applied Soil Ecology. 19: 209-216. (refereed)

Neville, J. 2001. The effects of nitrogen deposition on mycorrhizae and soil food webs in a clear-cut dominated by *Populus tremuloides*. Ph.D. Thesis Univ. of Guelph. Guelph, Ontario 165 pp. (refereed)

Klironomos, J.N., McCune, J., Hart, M., and Neville, J. 2000. The influence of arbuscular mycorrhizae on the relationship between plant diversity and productivity. Ecology Letters. 3: 137-141 (refereed)

Klironomos, J.N., Bednarczuk, E.M., and Neville, J. 1999. Reproductive significance of feeding on saprobic and arbuscular mycorrhizal fungi by the collembolan, *Folsomia candida*. Functional Ecology 13: 756-761 (refereed)

Neville, J., and Klironomos, J.N. 1999. The effects of nitrogen deposition on mycorrhizal functioning in forests dominated by *Populus tremuloides* (poster). Soil Ecology Society International Conference, pp. 41-42. (refereed)

Neville, J., and Kendrick, B. 1999. Computer identification of gilled mushroom genera occurring in Canada. *Mycotaxon*. 71: 223-240 (refereed)

Neville, J. 1996. How identification of "little brown mushroom" (LBM) genera may not be as hard as you think! McIlvainea, *Journal of American Amateur Mycology* 12: 33-63.

Neville, J. 1995. A Computerised Approach to the Identification of Canadian Genera of Gilled Mushrooms. M.Sc. Thesis Univ. of Waterloo Waterloo, Ontario 254 pp (refereed)

Neville, J. 1994. A Computerised Approach to the Identification of Canadian Genera of Gilled Mushrooms (abstract). 15th Annual Winter Workshop in Mycology Carleton Univ. Ottawa, Ontario 1 pg

Neville, J. 1994. A Computerised Approach to the Identification of Canadian Genera of Gilled Mushrooms (abstract). Annual Graduate Symposium Dept. of Biology, Univ. of Waterloo, Waterloo, Ontario pg. 30

Kendrick, B., Smith, J.E., Neville, J., and Weber, N.S. 1994. A study of morphological variability, character analysis, and taxonomic significance in the Zygomycetous anamorph-genus *Umbelopsis*. *Mycotaxon*. 51: 15-26 (refereed)