CINDY H. NAKATSU

PERSONAL INFORMATION:

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EDUCATION:

1989-1993 **Doctor of Philosophy**, Carleton University, Ottawa, Canada
1980-1983 **Masters of Science**, University of Toronto, Toronto, Canada
1974-1978 **Bachelor of Science**, University of Toronto, Toronto, Canada
1993-1995: **Postdoctoral Researcher.** Center for Microbial Ecology, Michigan State University

AWARDS and RECOGNITIONS (since 2002)**:**

- Chinese Academy of Sciences President's International Fellowship (2015)
- Hokkaido University Visiting Professor Fellowship (2011)
- President Purdue Chapter of Sigma Xi (2010-12)
- elected Member of U.S. National Committee for the International Union for Soil Sciences (2010-15)
- American Society for Microbiology Branch Lecturer (formerly Waksman Foundation Lectureship) (2006-08)
- Chair, Division S3-Soil Science Society of America (2006-07)
- Purdue University Research Faculty Scholar (2002-07)

ACADEMIC POSITIONS:

2003-present: **Professor**: Purdue University, Agronomy Department
2011-2014: **Visiting Professor**, Hokkaido University, Sapporo, Japan
2006-2008: **Interim Dean.** The Graduate School, Purdue University
2002-2007: Purdue University **Research Faculty Scholar**
2000-2003: **Associate Professor**: Purdue University, Agronomy Department
1995-2000: **Assistant Professor**: Purdue University, Agronomy Department

RESEARCH INTERESTS:

My major field of study is microbial ecology. Basic, molecular biology and "omic" techniques are used to gain a better understanding of the adaptation of environmental microorganisms to perturbed ecosystems. Microbial analyses range from examination of the entire community to the identification specific bacteria and genes responsible for the underlying functions. Perturbed ecosystems being studied are human/animal guts, metal and/or hydrocarbon

contaminated sites, wastewater treatment facilities, stream and lake water exposed to urban and rural inputs, and agricultural fields subjected to different agronomic practices *(see examples in select publications below)*. Ultimately with this research we hope to determine different mechanisms involved in bacterial adaptation to the environment and identify factors that contribute to community composition.

Select Refereed Publications: (from >100), **Students with or #perform microbial research in Nakatsu lab*

1. Cladis, D.P.#, A.M.R. Simpson*, K.J. Cooper, C.H. Nakatsu, M.G. Ferruzzi, and C. M. Weaver. 2021. Blueberry polyphenols alter gut microbiota and phenolic metabolism in rats. Food and Function (accepted).
2. French, E, I. Kaplan, A. Iyer-Pascuzzi, C. H. Nakatsu, and L. Enders. Progress and emerging strategies for precision microbiome management of crops in diverse agroecosystem. Nature Plants 7:256-267.
3. Liu, K.Y.#, C. H. Nakatsu, A. Kozik*, Y. Jones-Hall, and Q. Jiang. 2021. Alpha and beta tocopherol mitigate colitis, protect intestinal barrier function and modulate the gut microbiota in mice. Free Radical Biology and Medicine 163**:**180-189.
4. Lu, H.#, Yan, H., R. Potu, H. M. O'Neill, C. Bradley, M. Bedford, P. Wilcock, C. H. Nakatsu, O. Adeola, and K. M. Ajuwon. 2021. Effect of xylanase and live yeast supplementation on growth performance, nutrient digestibility and gut microbiome diversity of pigs. Canadian Journal of Animal Science. (In press) https://doi.org/10.1139/CJAS-2020-0082
5. Nakatsu, C.H., M. Byappanahalli, and M. Nevers. 2019. Bacterial community 16S rRNA gene sequencing characterizes riverine microbial impact on Lake Michigan. Frontiers in Microbiology 10:996

Book Editor

1. Yates, M.V., C.H. Nakatsu, R. Miller, and S. Pillai (editors). 2016. Manual for environmental microbiology, 4th Edition. ASM Press, Washington D. C.

CURRENT TEACHING RESPONSIBILITIES:

Undergraduate

AGRY349- Soil Ecology (taught 1999-2006, 2020-present, lecture and laboratory). This course covers the basic concepts of soil ecology. The lectures include interactions between and within both biotic and abiotic components of the soil ecosystem. The major topics covered in the class are: 1. nutrient cycling; 2. biological diversity and interactions; and 3. importance of soil ecology in optimizing soil productivity (e.g., for soil health)

Graduate

AGRY649- Molecular Microbial Ecology (taught yearly since 1996). The course focuses on both the theoretical and practical applications of various molecular genetic techniques used to study microorganisms from and in the environment. The major areas discussed are the application of molecular genetic techniques to study: 1) total microbial communities; 2) diversity of microorganisms in a community; and 3) biotechnological uses of microorganisms. The course is taught in a manner for students to develop independent skills for obtaing new knowledge, critical thinking and communication.