



vineland
RESEARCH & INNOVATION CENTRE

RESEARCHER SPOTLIGHT!

Meet David Liscombe, *Senior Research Scientist, Biochemistry*

At Vineland Research and Innovation Centre, innovation is cultivated by scientists like David Liscombe. Through Dave's curiosity about the hidden chemistry of plants, he has shaped a career at the intersection of discovery and practical impact. As Senior Research Scientist and leader of the Biochemistry team, Dave's work is defined by a drive to understand the molecular language of plants and to translate those insights into solutions for Canadian horticulture.

Dave's fascination with plant chemistry began early, inspired by the diversity of compounds that plants produce to survive, compete, and interact with their environment. "Plants are master chemists," he says. "Every species has its own repertoire of molecules, and the more I learn, the more I realize how much is left to discover." This sense of wonder continues to fuel his research, whether he's collaborating with growers to improve fruit quality or crop resilience, or profiling the alkaloids of invasive vines.

After earning a B.Sc. in Biology and Pharmacology at McMaster University, Dave completed his Ph.D. in Plant Molecular Biochemistry at the University of Calgary, where he investigated biosynthetic pathways in medicinal plants. Postdoctoral research at MIT and The Salk Institute expanded his expertise in analytical chemistry and molecular biology, laying the groundwork for his future leadership of the Biochemistry group and metabolomics platform at Vineland.

Since joining Vineland in 2012, Dave has pioneered the use of mass spectrometry-based metabolomics to unravel the chemical complexity of horticultural plants and products. His team collaborates with every research group at Vineland, providing metabolomic insights that



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Senior Research Scientist
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inform projects ranging from greenhouse trials and field studies to the development of new biostimulants and diagnostics. Dave's work has been recognized with an Honourable Mention for Research and Innovation Excellence from the Ontario Ministry of Agriculture, Food and Rural Affairs in 2024, celebrating his role in establishing Vineland's metabolomics service—a foundation for sustainable practices, enhanced food security, and agricultural innovation.

Career highlights include leading research on the invasive dog-strangling vine (*Vincetoxicum rossicum*), where Dave's metabolomics expertise helped elucidate the biosynthetic pathways and ecological roles of specialized alkaloids. His team also contributed to a landmark international study on tomato flavour chemistry, published in the Proceedings of the National Academy of Sciences (USA), which identified key flavour compounds and genetic markers that can be used to breed better-tasting tomatoes. These discoveries have informed strategies for managing invasive species, improving crop quality, and protecting biodiversity, demonstrating the real-world impact of his science. Dave is also deeply involved in collaborative projects with academic and industry partners, supporting innovation across Canada's horticultural sector.

So what keeps him inspired?

What keeps Dave inspired is the endless variety of plant chemistry. "I can't pick just one favorite plant—trees and any species producing exciting chemistry are at the top of my list," he admits. "There's always something new to learn, whether it's a rare metabolite or an unexpected ecological interaction."

And outside the lab?

Outside the lab, Dave spends his spare time immersed in nature, exploring forests, managing invasive species, gardening, and playing guitar.

For Dave, the greatest reward comes from seeing research move from the bench to the field, making a tangible difference for growers, land managers, and the environment. His technical leadership, collaborative spirit, and passion for discovery continue to shape the future of plant biochemistry and sustainable horticulture in Canada, one molecule—and one forest—at a time.



On January 9, 2026, Dr. David Liscombe will present an engaging talk titled "Metabolomics in Horticulture." Drawing on his expertise and leadership of the Biochemistry team at Vineland Research and Innovation Centre, Dave will explore how advanced metabolomic techniques are transforming our understanding of plant chemistry and driving innovation in Canadian horticulture. This session promises to highlight the latest breakthroughs, real-world applications, and future opportunities in the field. Stay tuned, [using this link](#), for details on registration and access to a video recording of the event, so you won't miss this opportunity to learn from a leader at the forefront of plant biochemistry.

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