

2Blades and GEMS Informatics Partner to Create BladeSeek™ Gene Discovery and Sharing Environment

The partnership builds on a long-standing relationship between 2Blades and the University of Minnesota, where GEMS Informatics is based.

ST. PAUL, MN, UNITED STATES, February 6, 2026 /EINPresswire.com/ -- [2Blades](#) and [GEMS](#) Informatics announce a new partnership to create an integrated database for [BladeSeek™](#), 2Blades' gene discovery platform. This collaboration will use GEMS Informatics' unparalleled expertise in diseases resistance genes, database architecture, interoperability of datasets, and data analytics to unite sequence and biological activity from 2Blades' multiple, high-throughput gene discovery tools, together with specialized germplasm collections. The resulting interface will create an efficient, coordinated, framework that will power the analysis, learning, and scaling of trait discovery for more resilient crops.

BladeSeek™ is a platform with three components: (i) gene discovery tools, including NLRseek™, PRRseek™, ThermoSeek™, and NMASeek™, (ii) high-throughput biological assays for validation of gene function, and (iii) germplasm resources of crop progenitors and wild relatives. 2Blades has developed and tested



Diana Horvath (center) and Phil Pardey (center-right) participating in a panel discussion at the 2025 World Food Prize



2Blades scientist assessing disease symptoms in plants

these tools successfully to discover new cereal and legume resistance against a range of pathogens. Organizing these resources into a cohesive database unlocks the potential of plant diversity to tackle virtually any disease in any crop.

“To date, we have used BladeSeek™ to source and screen 1000s of genes - an unprecedented level - from not only the main classes of plant immune receptors but also new modes of action,” said Diana Horvath, President of 2Blades. “The BladeSeek™ resources have reduced the cost and increased the throughput of resistance gene discovery and validation, and now, through the skills of co-founders Kevin Silverstein and Phil Pardey at GEMS Informatics, we will transform our data to find faster and smarter solutions to crop threats.”

A joint initiative between the University of Minnesota and the Minnesota Supercomputing Institute, GEMS Informatics combines advanced supercomputing capacity with Silverstein and Pardey’s world-leading expertise in agricultural data. GEMS Informatics makes complex agricultural datasets interoperable, in order to drive actionable information for food and agricultural systems. Their expertise makes them an ideal partner to help structure the BladeSeek™ database, integrating diverse data from DNA sequence information, gene expression data, whole plant and protoplast assay results, and advanced protein modeling. In combination with AI tools to enhance speed and efficiency, BladeSeek™ will be able to best identify, validate, and deploy effective resistance and resilience traits.

“This partnership joins complementary skillsets to advance innovation” said Dr. Philip Pardey, Co-Director of GEMS Informatics. “2Blades has world-class tools for discovering resistance genes, and we have the skills for data integration and architecture to create an organized, trustworthy, scalable foundation. Together, we can help speed up much needed innovation from the lab to the field.”

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The BladeSeek™ Platform aims to improve deployment of resistance genes across a wider variety of crops, reduce reliance on chemical inputs, and make advanced genetic insights more accessible to both large-scale producers and smallholder farmers. By closing the gap between discovery and delivery, the platform supports a more sustainable, equitable, and secure global food system.

About 2Blades

2Blades is a non-profit, agbiotech company dedicated to preventing pre-harvest crop losses, by advancing cutting-edge scientific discoveries into demonstrated resilience in the field. With its unique dual-market business model, 2Blades supports both commercial and smallholder farmers by bridging public and private sector resources to maximize the success and accessibility of agricultural innovations.

About GEMS Informatics

GEMS Informatics, an initiative of the University of Minnesota, provides secure, web-based tools and infrastructure for agricultural data integration, analysis, and sharing. GEMS supports cross-disciplinary discovery by enabling scientists to clean, align, explore and analyze diverse data types to drive smarter, faster agricultural solutions.

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