Novel Concepts Rewarded at iDEA Conference

Developing novel visualization and algorithmic designs to enhance next-generation sequencing studies.

Illumina technologies are helping us understand diseases and the living world around us. By continuing to unlock this knowledge, researchers are fueling advancements in genomics-powered medicine that will radically improve human health and quality of life over the next decade. A key component to achieving this vision lies in accelerating the analysis, visualization, and interpretation of genomic data.

With this in mind, Illumina launched the first iDEA (Illumina Data Excellence Award) Challenge in May 2010, empowering the scientific community to develop new and creative visualization and data analysis techniques. To level the field, all registrants had access to the iDEA data set, which included RNA-Seq, directional RNA-Seq, small RNA, DNA methylation, and genomic DNA sequencing data from eight breast cancer cell lines. Illumina received 30 entries, representing 7 countries, with 18 submissions from academic institutions and 12 submissions from commercial entities.

The finalists were invited to present their entries to more than 100 attendees at the 2011 iDEA Challenge Conference, held June 14–15 in San Diego. The entries were judged by a panel of experts from the scientific community, including Steven Jones (British Columbia Cancer Research Centre), Jared Maguire (Broad Institute), John Quackenbush (Dana-Farber Cancer Institute), Steven Salzberg (University of Maryland), Gavin Sherlock (Stanford University), and Bang Wong (Broad Institute).

For each category, the judges assessed the proposed software for its potential to substantially improve accessibility to and scientific insight of Illumina data. Key criteria included the magnitude of the advance, its novelty, utility of integrated data, and usability by all levels of users.

2011 iDEA Challenge Finalists

Academic

University/Institution	Country
VIB	Belgium
University of Delaware	USA
University of Tübingen	Germany
Harvard Medical School	USA
University of Georgia	USA
UCSD	USA
Pennsylvania State University	USA

Commercial

Company/Institution	Country
Strand Scientific Intelligence	USA
Partek Incorporated	USA
Enlis Genomics	USA
Schultz Technologies ApS	Denmark
Genomatix Software GmbH	Germany

Overall Academic Winner (50,000 USD grant)

Pennsylvania State University for inGAP, with specific focus on inGAP-sv, a novel scheme to identify and visualize structural variation from paired and mapping data.

Pictured: Stephen Schuster receiving the iDEA award from Scott Kahn.

Overall Commercial Winner (One-year co-marketing agreement)

Enlis Genomics for software to easily navigate through sequencing information across multiple genomes to identify features of interest.

Pictured: Devon Jensen receiving the iDEA award from Scott Kahn.

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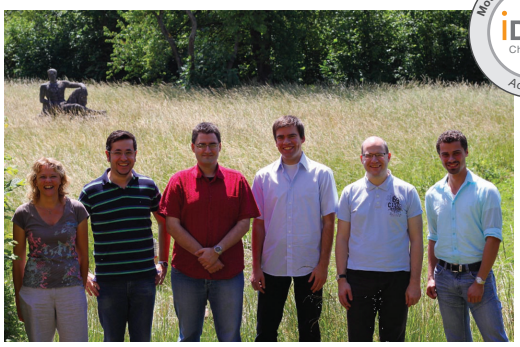

Most Creative Algorithm, Academic

University of Tübingen for GenomeRing, a visual comparison of multiple genomes that allows differences to be more easily identified.

Pictured: The team from the University of Tübingen.

Most Creative Algorithm, Commercial

Partek Incorporated for an entire suite of tools, including a number of useful novel algorithms

Pictured: Tom Downey receiving the iDEA award from Scott Kahn.

Most Creative Visualization, Academic

VIB for GenomeView, a tool specifically designed to visualize a multitude of genomic data.

Pictured: Thomas Abeel receiving the iDEA award from Scott Kahn.

Most Creative Visualization, Commercial

Genomatix for an impressive suite of tools that incorporate in-depth visualizations

Pictured: Jochen Supper receiving the iDEA award from Scott Kahn.

Keynote addresses from Bang Wong (Creative Director, Broad Institute), Trey Ideker (Division Chief, Medical Genetics, UCSD Department of Medicine), Mick Correll (Associate Director, Center for Cancer Computational Biology, Dana-Farber Cancer Institute) rounded out two days of excellent presentations from the finalists.

"It was exciting to host this first-of-its-kind Challenge, which brought together global innovators in the fields of visualization and data analysis," said Scott Kahn, Illumina's Chief Information Officer. "The iDEA Challenge and Conference helped advance the analysis, integration, and visualization of data being generated with Illumina technologies, accelerating science and translational medicine. It was impressive to see the worldwide scientific community step up and participate."

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