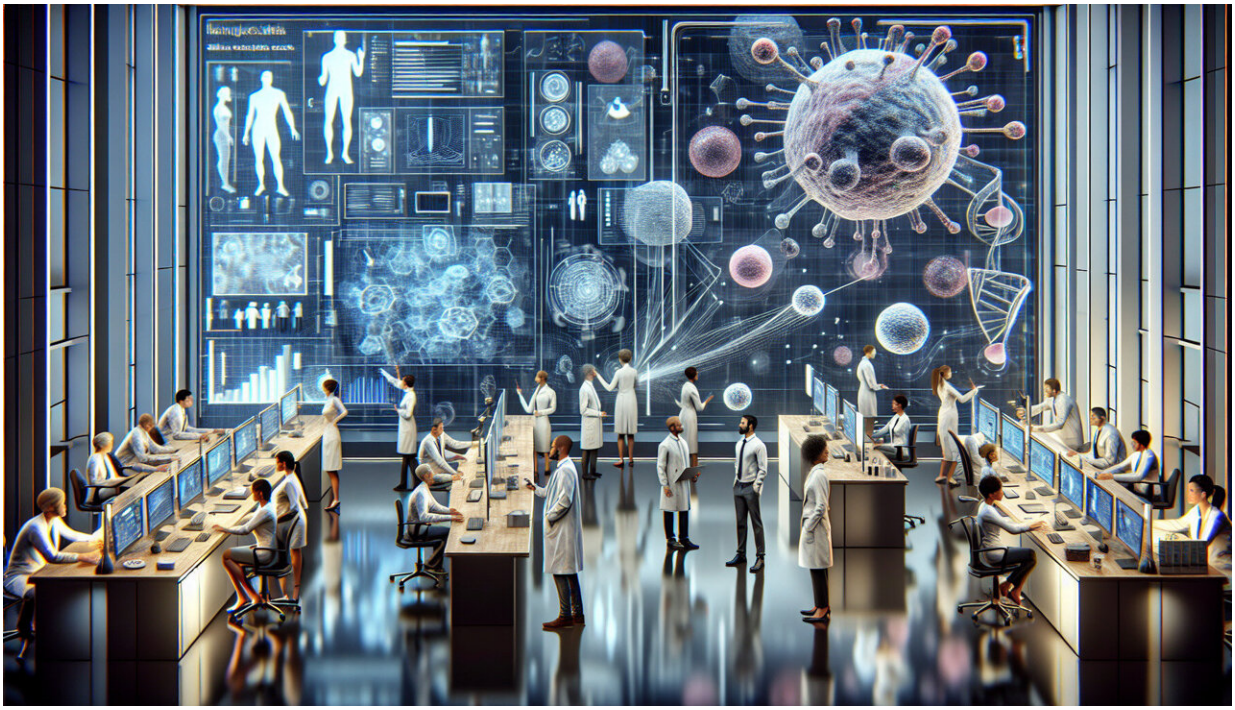
The evolving single-cell and spatial technology landscape

July 17 2024



Credit: AI-generated image

The scTrends consortium has published its first report shedding light on the current state of the commercial single-cell and spatial genomics industry and its potential impact on drug discovery and patient care.

An international group of researchers has formed the scTrends

Consortium—a dynamic review of commercial single-cell and spatial genomics technologies. Led by Associate Professor Adam Cribbs at NDORMS and Dr. Jake Taylor-King at Relation Therapeutics, the consortium has published a comment piece in *Nature Biotechnology* on the latest trends and business developments in this cutting-edge field.

"The field of single-cell and spatial omics is moving rapidly and it's challenging for any practitioner to maintain a working knowledge of the available technologies," said Cribbs. "By pooling our expertise and resources, and tracking the latest innovations and market trends, we are able to provide a comprehensive, up-to-date 'living review' of the technology space that will be invaluable for researchers, companies, and to drive breakthroughs in biomedical research and health care."

Single-cell and spatial genomic profiling technologies are standard for studying complex biological and clinical samples. Well-established companies like 10x Genomics, NanoString Technologies, and Vizgen are key players that have achieved broad acceptance of their technology through assay reliability, comprehensive technical support and standardized preprocessing pipelines.

The field is now shifting towards increased sensitivity, improved transcriptome coverage, and the ability to better understand gene regulatory networks. The scTrends initiative therefore plays an important role to help articulate the potential for integrating these tools within health care systems to revolutionize drug discovery and personalized medicine.

The scTrends Consortium's multidisciplinary team includes scientists from academic institutions and companies across Europe, North America, and beyond. Key contributors come from organizations such as the Francis Crick Institute, University College London, KTH Royal Institute of Technology, Stockholm University, Massachusetts Institute

of Technology, University of Cambridge, University of Oxford, and various biotechnology and investment companies including Relation Therapeutics, Caeruleus Genomics, ARK Investment Management, OMAPiX GmbH, Skyhawk Therapeutics, Roche, and Single Cell Discoveries.

This diverse group of industry and academic experts has tracked the progress of dozens of single-cell and spatial omics platforms, documenting key milestones such as product launches, acquisitions, and funding rounds. The consortium plans to release a series of articles and blog posts, with a forthcoming major review article that expands on the themes discussed in the *Nature Biotechnology* comment piece, focusing on the current state of single-cell technologies and associated companies. Reviews and posts will be released periodically at https://sctrends.org.

"This is the first article within the scTrends series and we already have updates diving into more technical aspects. By providing this comprehensive overview and collaborative platform, we hope to empower researchers, clinicians, and industry partners to fully harness the power of these transformative technologies," concluded Dr. Taylor-King. "By identifying technology-question fit, we can ensure these tools are used in the most impactful way to uncover important biological insights and, ultimately, improve patient outcomes."

More information: *Nature Biotechnology* (2024). www.nature.com/articles/s41587-024-02305-0

Provided by NDORMS, University of Oxford