**🧬 Bioprinting Labs Inc. Monthly Newsletter – September 2025**

Welcome to our very first newsletter! Each month, we’ll share company news, educational resources, industry highlights, practical lab tips, and featured research to keep you updated on the future of 3D cell culture and organoid technology.

**🌟 What’s New at BPL**

We are proud to announce that **Bioprinting Laboratories Inc. has been awarded an NIH/NIEHS STTR Phase I grant** to develop engineered human brain organoids using our **pillar/perfusion plate platform**. This project will accelerate the evaluation of developmental neurotoxicity (DNT) potential of compounds, supporting safer drug discovery and chemical risk assessment.

📍 In addition, our Founder & CEO, **Dr. Moo-Yeal Lee**, will be traveling to **Seoul, South Korea (Sept 27–Oct 5)** to:

* Deliver a **keynote speech** at [BBMEC14](http://bbmec14.org)
* Present invited seminars at [CoreStemChemon](http://chemon.co.kr), [CytoGen](http://cytogenlab.com), [KIST](http://kist.re.kr), and [Sookmyung Women’s University](http://sookmyung.ac.kr)

**📘 Learn with Us**

**3D Cell Culture Tools and Techniques**  
Traditional 2D cell cultures fail to capture the complexity of human biology, driving a need for **three-dimensional (3D) models** in drug discovery. This blog post explores the major 3D approaches—**spheroids, organoids, and bioprinted tissue constructs**—as well as methods (scaffold-free vs. scaffold-based), devices (bioreactors, perfusion systems, organ-on-a-chip), and key factors for selecting the right model. By balancing physiological relevance with scalability, 3D culture systems are paving the way for **predictive, high-throughput screening** and reducing reliance on animal testing.

🔗 [Read the full blog post](https://1drv.ms/b/c/ba60241c809a4d16/EXEVfwHpatFNt0nJf7DAd04BPxXAnADT_-K5M7mwXa-RWg?e=ZxItLH)

**🔬 In the News**

**ALS Spinal Cord Chip Model**  
Researchers at **Cedars-Sinai**, supported by NCATS’ Tissue Chip for Drug Screening program, have developed a **spinal cord chip (SC-chip)** — a three-dimensional organ-on-a-chip model of **amyotrophic lateral sclerosis (ALS)**. The SC-chip grows **motor neurons (MNs)** and **endothelial cells** together in a microfluidic device that mimics the human blood-brain barrier.

Compared to standard 2D cultures, the SC-chip provides a more physiologically relevant environment, enabling researchers to identify ALS-specific changes in **neurofilament levels, glutamatergic signaling, and synaptic activity**. This model generates diverse, mature MN populations and offers a powerful platform for studying disease mechanisms and screening potential therapies.

🔗 [NCATS News Release](https://ncats.nih.gov/news-events/news/an-organ-on-a-chip-model-of-als-will-help-uncover-early-disease-characteristics-and-find-potential-therapies)  
🔗 [Full Study in *Cell Stem Cell*](https://www.cell.com/cell-stem-cell/fulltext/S1934-5909(25)00222-X)

**🧪 How-To of the Month**

**Spheroid Culture in Matrigel on a Pillar Plate**  
Organoids derived from pluripotent stem cells or primary cells obtained from biopsy samples provide physiologically relevant models for studying development, disease, and drug response. Yet, conventional organoid culture methods are often **low-throughput, variable, and labor-intensive**.

The **pillar plate system** overcomes these challenges by streamlining spheroid transfer and enabling miniature, reproducible organoid cultures embedded in Matrigel. This protocol supports **scalable organoid production** for **high-throughput screening (HTS)**, while reducing costs, improving consistency, and generating assay-ready plates optimized for **compound testing, *in situ* staining, and analysis**.

🔗 [*[View the step-by-step protocol]*](https://3dbpl.com/wp-content/uploads/2025/08/SOPs_Spheroid-Culture-in-Matrigel-on-Pillar-Plate_080325.pdf)

**📄 Research Spotlight**

**A Pillar and Perfusion Plate Platform for Robust Human Organoid Culture and Analysis**  
Organoids offer transformative potential for disease modeling and drug discovery, but their use in **high-throughput screening (HTS)** has been limited by challenges in scalability, reproducibility, and fluidic integration. This study introduces **microarray 3D bioprinting technology** with **pillar and perfusion plates** to streamline organoid culture and analysis. The platform enables efficient differentiation into liver and intestine organoids, supports static and dynamic culture, and is fully compatible with standard 384-well HTS systems.

🔗 *[*[*Read the full publication*](https://advanced.onlinelibrary.wiley.com/doi/full/10.1002/adhm.202302502)*](A Pillar and Perfusion Plate Platform for Robust Human Organoid Culture and Analysis)*

💡 *Thank you for being part of our growing community. Stay tuned for more updates in next month’s edition!*