



# Health and Life Science

Sigma Design Company designs, optimizes and manufactures products, analytical equipment and test systems for the Health and Life Sciences industry.

For more than 20 years, Sigma Design Company has been a trusted, one-stop resource for clients including major global brands. As a proven design and manufacturing partner, we bring their vision to life, whether it's creating breakthrough medical devices, optimizing existing products, or developing test systems aimed at making peoples' lives better. These products have ranged from surgical tools, medical devices and equipment to blood centrifuges, diagnostic and analytical laboratory equipment, drug delivery tools, and more.

All work takes place at our state-of-the-art 20,000 square foot Technology Commercialization and New Product Manufacturing Center in Middlesex, New Jersey, USA. Sigma Design Company maintains a Quality Management Program in accordance with ISO 13485 and ISO 9001.

## SERVICES

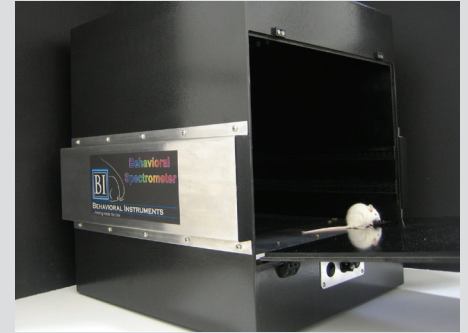
Our comprehensive services encompass the entire product development cycle. They include design engineering, design and cost analysis, prototyping, photo-realistic simulation, electronics, low volume (100s) highly specialized manufacturing and testing, and larger manufacturing runs.

We employ advanced engineering, simulation and rapid prototyping technology to speed time to market while helping clients reduce risks and costs associated with product development. In addition to engineering new solutions, our team also evaluates products and systems under development, using advanced engineering analysis including FEA, CFD, structural stress, deflection, fluid flow and heat transfer simulation. These computer aided engineering (CAE) tools allow us to uncover and detect non-obvious, counter-intuitive design flaws early in the process.

We bring to our clients broad manufacturing knowledge and experience that helps streamline the process. Sigma Design also develops stringent test protocols and performs factory acceptance testing on all the electro-mechanical systems we build.

## CASE STUDY

### Assisting Drug Discovery

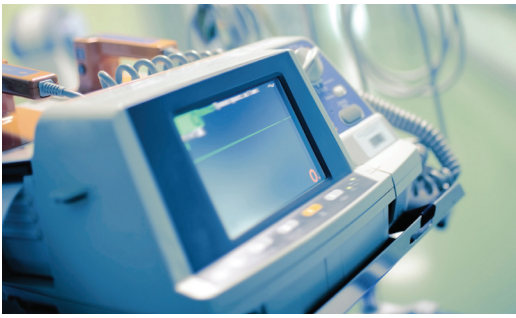


The Behavioral Spectrometer is a humane device that captures everything a research mouse does without having to watch and score hours of video recordings. Sigma designed, tested and manufactures this 'mouse house' in its New Product Manufacturing Center. The job required advanced engineering analysis and skills to incorporate LED lighting, vibrations sensors, and isolation dampers. It has the capability of using advanced video and vibration analysis to record the most detailed description of mouse behavior ever.

This product has met with huge success in the research and pharmaceutical world including Rutgers University's Department of Neuroscience and Cell Biology, Pfizer, and other global R&D laboratories for the development of new treatments and drugs. Additional systems have recently been shipped to a R&D laboratory in Austria.

#### Services Performed:

Electronic/mechanical advanced engineering



## PROVEN RESULTS

Since our founding in 1999, Sigma Design Company has delivered more than 1,000 successful design and design/build projects – on time and on budget – while saving clients hundreds of thousands of dollars in manufacturing.

Hundreds of our projects have been for companies in the Health and Life Science industry, where clients have included:

- Glen Mills, Inc.
- Johnson & Johnson
- Rutgers Medical School
- 3M

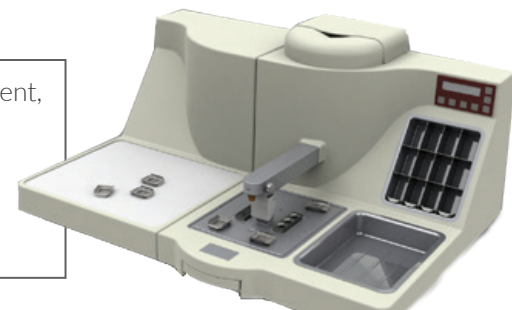
## CASE STUDY

### Building a Better Tissue Embedder

#### Industrial Design Produces Ergonomic Instruments

A life sciences systems manufacturer was looking for a new tissue embedder and cryo system with unique features and capabilities. Sigma Design Company delivered all of that in a sleek and user-friendly design. Using photo realistic imaging and paraffin flow modeling in SolidWorks®, the Sigma team analyzed various layouts and the human factors, meticulously checking these variables in 3D prior to prototyping. All prototyping housing components were made in-house using Sigma’s 3D FDM printer.

**Services Performed:** Concept development, photo realistic simulation, detail design, electronics, product development, prototype manufacturing & testing.



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## CASE STUDY

### New Design for the French Press G-M™



When the previous manufacturer of their French Press G-M™ discontinued production, Glenn Mills, Inc. turned to Sigma Design Company to redesign and manufacture this product directly for them. Sigma reverse engineered and redesigned the machine –

a cell disruptor and high-pressure homogenizer – to have more features, better aesthetics and compatibility with all of the older system’s accessories. The new design produces 40,000 PSI for cell homogenization, improving cell culture and tissue engineering capabilities for laboratories. It incorporates many of the skills at which Sigma Design excels including tight tolerance machine components, hydraulics, circuit board design, material properties and finishes. Sigma Design Company manufactures and assembles these units in our NJ facility, providing immediate customer support and a short lead time for production and delivery.

**Services Performed:** Engineering services, design for manufacturing, hydraulic and electrical control development, prototype, testing, contract manufacturing