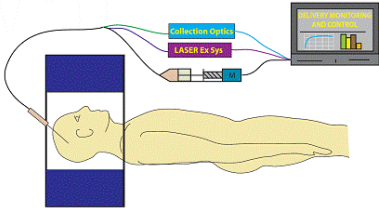
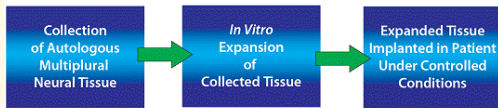
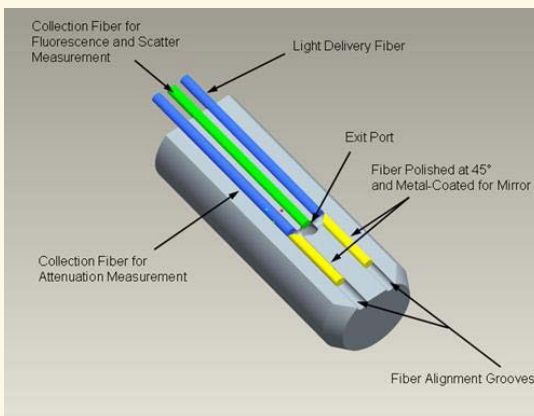


# Cytometric Therapies for Cell Delivery

## Maximizing Efficacy of Cell Delivery



### Overview of the Key Elements of the Neuro-Catheter Tip



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### Summary

Stem cell therapies are a viable treatment options for some human diseases. Efficacy of such therapies can be maximized by addressing critical issues such as cell delivery and cell survival post delivery. Conventional methods for cell delivery do not determine the viability of the transplanted cell. For example, an estimated 5-10% of cells transplanted into the central nervous system survive post-transplantation, leaving only a small portion of the originally grafted cells to contribute in functional restoration.

Scientists at ORNL and scientists at Virginia Commonwealth University and the University of Virginia have developed a system to overcome this problem through cytometric monitoring of stem cell delivery into host tissues *via* a neurocatheter. This delivery system can be used to measure and record the level of cell metabolites, including species such as dopamine and acetylcholine. In addition, the system can be used to monitor the introduction of agents, such as growth factors, nutrients and angiogenesis factors needed to optimize the clinical outcome of the differentiation process and treatment.

### Advantages

- Quantization of the distribution of stem cells for human therapies
- Confirm cell count during stem cell delivery
- Minimize delivery time and tissue damage while maximizing chances for implant survival
- Provide a variety of useful physiological data for optimization of the therapeutic approach
- This system can be used with conventional cell delivery methods

### Patents

- Means and Methods for Cytometric Therapies (UTB - ID 1820) [patent pending](#)

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