Brief Background description:
Vizio is developing devices for nephrology, cardiology and oncology patients based on the use of planar microsieve filters for extracorporeal filtration of blood. For nephrology patients undergoing dialysis treatment, the technology is aimed at an ambulatory, continuously operating device to remove excess water, enabling patients to present for dialysis at or near "dry" weight. A Vizio sponsored clinical study has shown that this modality reduces hypertension, and enhances effectiveness of dialysis, reducing frequency to 2 sessions weekly. In cardiology, the mechanical reduction of excess fluid retention provides an economical out-of-hospital option to correct fluid balance in patients who are refractive to diuretics.

Oncology patients with metastasizing solid tumors typically have a significant number of Circulating Tumor Cells (CTC’s); the technology seeks to reduce CTCs by two orders of magnitude in a clinical extracorporeal filtration therapy. Research points toward a real potential for perturbation or interruption of the metastatic process with this de-bulking, so the immune response can be augmented to fight the progression of the disease.

Salient Features*
Key features include:
- Easy to use devices
- Short therapeutic sessions, outside the high-cost environment of a hospital; or ambulatory use, reducing symptoms and permitting greatly improved quality of life
- Economical single use procedure sets

Current Status with M2D2
Vizio is establishing its development and engineering department in Lowell, and using the M2D2 wet lab for ongoing bench testing of prototype systems in preparation for non-GLP and GLP animal studies, leading to Investigational Device Exemption approval for clinical trials in humans.

Market Potential*
Worldwide patient populations for these devices number 1.7M dialysis patients; 23 M congestive heart failure patients and 12M metastatic cancer patient who could benefit from these new therapies. Each of these categories represent potentially significant cost savings in health care expenditures when widely deployed.

IP Status
Vizio owns or has rights to over 35 issued patents, and ~25 pending applications covering key technology and features of these devices.

*These are the inventors claims and do not necessarily represent the opinions of the Massachusetts Medical Device Development Center