To illustrate these strategies, a two-layer membrane device will be exemplified, although it should be understood that similar results can be obtained with devices having three or more layers. In this embodiment, a middle portion (e.g. ±10-20% of the midpoint of the distribution) of the capacity distribution is designated for the top or upstream membrane layer, with the remaining portion of the distribution to be used as the bottom layer membrane. This is illustrated graphically in Figure 3. By utilizing a top layer membrane from the middle of the capacity distribution curve, and a bottom layer membrane from the left or right side of the capacity distribution curve, the range of device capacities will be reduced compared to random layering, with no effect on mean capacity (Table 1).

Figure 4 illustrates an arrangement of a multi-layered membrane device. In the arrangement of Figure 4, the top layer membrane is randomly selected from the top half of the capacity distribution curve, and the bottom layer membrane is randomly selected from the bottom half of the capacity distribution curve. In addition to decreasing the capacity range by half as in the embodiment of Figure 3, the arrangement of Figure 4 also increases the mean capacity as compared to random layering. Because this

permeability variability and retention variability. Specifically, the membrane with a capacity of 750 l/m^2 (“Top Layer 1”) is combined with the membrane with a corresponding low capacity of 450 l/m^2 (“Bot. Layer 1”) to achieve a capacity of 750 l/m^2, etc.

The performance variability resulting from the various embodiments and arrangements was calculated for a two-layer device and compared in Table 1. It can be seen that the arrangement of Figure 7 allows for the lowest standard deviation in permeability and retention among all of the embodiments and arrangements, with only slightly higher standard deviation in capacity compared to the embodiment of Figure 3 or random layering.

The Figure 7 arrangement also allows for higher mean capacity than the Figure 3 embodiment. Note that the Figure 3 embodiment can result in slightly increased permeability and retention variability compared to random layering. This occurs because the membranes with the extremes of permeability and retention are never combined with each other. The Figure 3 embodiment does have the advantage of the lowest capacity standard deviation.

What is claimed is:

1. A method of ordering membranes within a multi-layer filtration device, wherein the device comprises a housing having an inlet and an outlet spaced from said inlet, and a plurality of membranes, including at least an upstream membrane and at least a downstream membrane, wherein said method comprises selecting each said membrane from a population of membranes, the population comprising two or more batches of membrane manufactured from a particular manufacturing process as having a certain rated capacity; characterizing each batch by its actual capacity, the capacities of the batches defining a population of actual capacities defining a distribution, sorting the batches according to the actual capacity; and selecting membranes from said batches such that the said upstream membrane has a capacity at ± 10-20% of the midpoint of said distribution, and said at least one downstream membrane has a capacity from the remaining portion of the said distribution, and assembling said filtration device from said membranes selected.

2. The method of claim 1, wherein said capacity distribution of said population of membranes

is a Gaussian distribution.

3. The method of claim 1, wherein there are at least four membranes.

4. The method of claim 1, wherein there are at least three membranes and, optionally, wherein the membrane between said upstream and downstream membranes has a capacity at either the high end or the low end of said distribution.