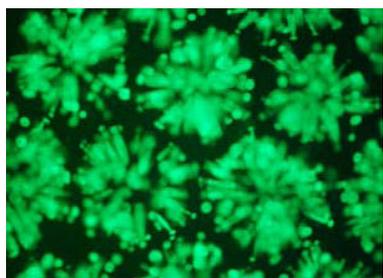


**THE LIVER GROUP**  
**CHAIRMAN'S REPORT**  
**IN RESPECT OF THE ACCOUNTS**  
**FOR THE YEAR ENDING 31 DECEMBER 2007**



This brief report addresses both the science and the means to achieve our goal, the creation of a bioartificial liver.

In respect of the science: I used the analogy last year of the software of the bioartificial liver – the cells themselves – and the hardware – the bioreactor which will contain the cells from which the plasma of sick patients will be passed. Our work continues on both these fronts. The two have begun to converge, stimulated by the requirement to produce cells to a scale sufficient to treat a sick patient, moving up from the small prototype that we have used before. We are after all trying to replace the function of an organ weighing

on average 1500g, with a volume of 1.5 litres, and scaling up the cell producing process to achieve this was always going to be a significant milestone to reach. We are now at that milestone. We have extended the floating bed reactor design, in which cells are in a cylinder and perfused by fluid from below. Cells rise under the pressure below to reach a certain height and then fall again; this constant motion allows free exchange between the cells and the fluid surrounding them. This design was initially adopted as the answer to permitting the cells of the bioartificial liver the best chance to ‘improve’ the plasma of a patient with liver disease. We have now adopted the same principle while the liver cells proliferate in alginate beads over several days, to reach number sufficient to treat a patient. The use of this technology has given a boost to cell growth, and we are now confident we can readily provide a the appropriate cell numbers. Currently, optimising the bioreactor design at this scale is one of the major themes of the work.

The other aspect of our future planning is how to move this design into a clinical reality available at the bedside as and when required. Clearly this will require partnerships, and these will necessarily involve businesses with experience in large scale production and distribution of medical devices – as for example is the norm for providing kidney machines. We are exploring these possibilities, though remaining fully mindful of the purposes of the charity, and that the motivation of those we employ is to add to knowledge and to improve treatment, and we will ensure that these aims are advanced in any partnership arrangements considered.

Once again I express our immense gratitude to our supporters without whom this work would not be possible.

Humphrey Hodgson  
Chairman

