

THE LIVER GROUP
ANNUAL REPORT AND ACCOUNTS
FOR THE YEAR ENDED 31 DECEMBER 2012



THE LIVER GROUP

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THE LIVER GROUP
ASSOCIATION INFORMATION
FOR THE YEAR ENDING 31 DECEMBER 2012

Trustees:	Sarah Bates David Clifford Ciáran Devane (Co-opted) Sue Eggleton Kay Glendinning MBE Prof Humphrey Hodgson FRCP, F Med Sci Prof David Kerr CBE Prof Sir Roger Penrose OM FRS Clare Selden
Principal office:	UCL Institute of Liver and Digestive Health - The Liver Group UCL - Royal Free Hospital Campus University College Medical School Upper Third Floor Rowland Hill St Hampstead London NW3 2PF
Charity registration number:	1024533
Bankers:	HSBC Oxford Circus Branch London W1A 1EZ CCLA Investment Management Ltd 80 Cheapside London EC2V 6DZ
Auditors:	Andrew Wilson Simpson Wreford & Co Wellesley House Duke of Wellington Avenue Royal Arsenal London SE18 6SS

THE LIVER GROUP**TRUSTEES' REPORT****FOR THE YEAR ENDING 31 DECEMBER 2012**

The Trustees submit their annual report and the audited financial statements for the year ended 31 December 2012. The Trustees have adopted the provisions of the Statement of Recommended Practice (SORP) "Accounting and Reporting by Charities" issued in 2005 in preparing the annual report and financial statements of the Charity which have been prepared under section 132 of the Charities Act 2011. The organisation is a Charity constituted under a Trust Deed dated 28 May 1993.

The administrative information set out on page 1 forms part of this report.

Objectives and activities

The objects of the charity are:

- i) The relief of patients suffering from disease of the liver and genetic defects affecting the liver
- ii) The promotion of research into the causes and treatment of diseases of the liver on terms that the results of such research are published.

The principal activity of the Charity currently is the project being conducted to develop an artificial liver. The artificial liver project is being carried out with the funds raised for the continuing "Liver for Life" Appeal.

The Board of Management comprises nine Trustees, eight elected, one co-opted. The members are able to draw on relevant board experience in board deliberations. The Board is collectively responsible for the competent management of the organisation in accordance with its objectives which are set out in the Trust Deed. The Board meets twice a year to monitor the organisation's strategy and activities.

The Charity does not have any employees and its day to day activities are carried out by University College London under the supervision of two Trustees. If the need arose to appoint a new trustee the remaining trustees would identify and appoint an appropriate person. The current Trustees are responsible for the induction of any new trustee which involves making them aware of the Trustees' responsibilities, the governing documents, administrative procedures and the history and philosophical approach of the charity. The Trustees have agreed a position that should any profits arise from the intellectual property in the research being carried out by the team, and in conjunction with the various other parties involved in that work, the Charity may/would be entitled to up to 50% of such amounts.

Achievements and performance

- Research output, intellectual property gained and achievement of milestones towards moving the Bioartificial Liver project from the bench to the bedside.
- Administrative charitable activities are limited to fundraising for the research endeavour. This is achieved by written applications to known grant giving organisations, small and large companies via the CEOs or other appropriate individual or wealthy individual donors. The Charity also has a web-page with an opportunity to donate via CAF. £114,819 (2011 £39,846) was raised in this financial year from donations; other income was generated from interest earned on cash deposits.
- Indicators of achievements are success in the research aims and, in addition, the total funds raised in a particular year. These rarely exceed our expenditure for the year.

THE LIVER GROUP**TRUSTEES' REPORT****FOR THE YEAR ENDING 31 DECEMBER 2012****(Continued)**

- The Charity is one of many sourcing the same research funding; given the difficult position most UK universities find themselves in, there is increasing competition for funds. Until government resources fill the gap between the costs and current funding of medical research the Charity's efforts will become more difficult each year. Notwithstanding this difficult climate, the Charity continues to explore every avenue to increase funding from grants and donations.

Financial review

The organisation is funded mainly by donations. They are a mixture of individual, corporate and charitable trust donations.

The majority of funds are spent on paying the salaries of researchers, as well as the required consumables and equipment for the research to continue. As evidenced by the publications, the Charity's current aim to develop a bio-artificial liver machine (BAL) has moved forward from the medium scale to human scale. The following period will see a scale up towards clinical scale for this machine. Each of these steps is associated with a considerable increase in research personnel, consumable and equipment expenditure.

Except for such funds as the Trustees consider prudent to maintain for the purpose of management and administration of the Charity for the foreseeable future, all unrestricted funds are applied for the purposes of the "Liver for Life" project and the general charitable objects of the Charity.

As at 31 December 2012 the unrestricted fund had a committed surplus of £438,398 (2011 – £417,173), and the restricted fund had been cleared as at the end of the year (2011 - £36,247). The Charity's unrestricted fund is already committed to existing research and PhD students and their necessary consumables.

As the bio-artificial liver project nears clinical scale and development for clinical trial, the costs are rapidly increasing necessitating considerable further fund-raising.

Risk management

The Trustees confirm that there are ongoing processes for identifying, evaluating and managing significant risks faced by the organisation.

Public benefit

All the donations made by the Charity were in furtherance of the Charity's long term objective of providing the relief of patients suffering from diseases of the liver and genetic defects affecting the liver, and promoting research into the causes and treatment of liver disease. The Charity has complied with section 17 of the Charities Act 2011 having due regard of the public benefit guidance published by the Commission.

Plans for future periods

The Charity aims to continue its medical research goals, at a pace commensurate with funding opportunities. With appropriate funding it sees the bio-artificial liver machine project reach the clinical trial assessment within five years.

THE LIVER GROUP**TRUSTEES' REPORT****FOR THE YEAR ENDING 31 DECEMBER 2012****(Continued)****Statement of Trustees' responsibilities**

The Trustees are responsible for preparing the Trustees' Report and the financial statement in accordance with applicable law and United Kingdom Accounting Standards (United Kingdom Generally Accepted Accounting Practice).

The law applicable to charities in England & Wales requires the trustees to prepare financial statements for each financial year which give a true and fair view of the state of affairs of the charity and of the incoming resources and application of resources of the charity for that period. In preparing these financial statements, the trustees are required to:

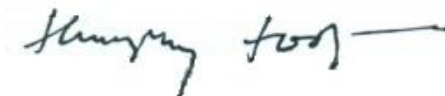
- select suitable accounting policies and then apply them consistently;
- observe the methods and principles in the Charities SORP;
- make judgements and estimates that are reasonable and prudent;
- state whether applicable accounting standards have been followed, subject to any material departures disclosed and explained in the financial statements; and
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the charity will continue in business.

The trustees are responsible for keeping proper accounting records that disclose with reasonable accuracy at any time the financial position of the charity and to enable them to ensure that the financial statements comply with the Charities Act 2011, the Charity (Accounts and Reports) Regulation 2008 and the provisions of the trust deed. They are also responsible for safeguarding the assets of the charity and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Auditors

A resolution to re-appoint Simpson Wreford & Co as auditors will be proposed at the next AGM.

The report was approved by the Trustees on 01/10/2013



and signed on their behalf by

Humphrey Hodgson

Trustee

THE LIVER GROUP
CHAIRMAN'S REPORT
FOR THE YEAR ENDING 31 DECEMBER 2012

My Chairman's report last year announced the tremendous news that the Wellcome Trust had awarded The Liver Group research team at UCL a Translational Technology award to take our work on the bio-artificial liver machine forward. The basis for the award was our last decade's work in characterising and optimising enhancing the performance of human liver-derived cells when they are cultured in the innovative three-dimensional culture system we devised, which had culminated in a proof-of-principle experiment performed with our colleagues in South Africa in a large animal model. The award – for just over two million pounds – is to produce a fully designed and fabricated system, commensurate with the complex regulations governing 'good manufacturing practice'; to provide a fully documented and quality controlled process; and to demonstrate its safety in use in further animal experiments. With that achieved, we can prepare a dossier of information, in great detail, to present to the appropriate UK and European regulatory bodies as the precondition for approval for a clinical trial in man.

The three year funding period commenced at the end of April, although it is not money that will come to the Charity, but to the University for our academic work. During the year the achievements – essentially the milestones by which the Wellcome will judge our progress – included extensive characterisation of the cell-line we used, the manufacture to our specification of a larger, more automated machine for encapsulating cells in the jelly-like alginate material in which we grow them, and refinement of the processes of alginate purification – the latter an ongoing collaboration with our colleagues in Hungary. We make monthly reports to the project manager supported by the grant, and liaise with the Wellcome Trust with three-monthly meetings presenting the scientific progress.

Outside the Wellcome Grant, and in collaboration with colleagues in the Department of Surgery at UCL, we have progressed our work on freezing cells in alginate beads (incidentally graduating one of our PhD students with the project), and are now liaising with two industrial enterprises who have an interest in freezing tissues and cells of all types, and see our system as providing a potentially extremely useful technique for preserving living biological material until needed. This work – potentially an enormous advance of general application, exemplifies very clearly the path that our research and indeed so much university research takes nowadays. Ideas have to be generated, and pilot experiments performed; and then at that stage – which may take many months to some years - it becomes possible to attract funds from major grant-giving bodies or in some cases industry. The initiative I mentioned last year – a novel module developed as a 'bolt-on' to our bio-artificial liver device, to reduce the incidence of infection and sepsis in patients with liver failure, remains in this stage; the results are extremely encouraging, and we hope to raise major funding for this. In the meantime, for this year past and indeed for the future, we remain both greatly indebted, and grateful, to our supporters who do so much to make our work possible.



Humphrey Hodgson
Chairman

INDEPENDENT AUDITOR'S REPORT
TO THE TRUSTEES OF THE LIVER GROUP
FOR THE YEAR ENDED 31 DECEMBER 2012

We have audited the financial statements of The Liver Group for the year ended 31 December 2012 which comprise the Statement of Financial Activities, the Balance Sheet and the related notes. The financial statements have been prepared under the accounting policies set out therein and the requirements of the Financial Reporting Standard for Smaller Entities (effective April 2008).

This report is made solely to the Trustees, as a body, in accordance with Section 144 of the Charities Act 2011 and the regulations made under section 154 of that Act. Our audit work has been undertaken so that we might state to the charity's Trustees those matters we are required to state to them in an auditors' report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the charity and the charity's Trustees as a body, for our audit work, for this report or for the opinions we have formed.

Respective responsibilities of the Trustees and Auditors

The Trustees' responsibilities for preparing the Annual Report and the financial statements in accordance with applicable law and United Kingdom Accounting Standards (United Kingdom Generally Accepted Accounting Practice) are set out in the Statement of Trustees Responsibilities.

We have been appointed under section 144 of the Charities Act 2011 and report in accordance with regulations made under section 154 of that act. Our responsibility is to audit and express an opinion on the financial statements in accordance with relevant legal and regulatory requirements and International Standards on Auditing (UK & Ireland). Those standards require us to comply with the Auditing Practices Board's Ethical Standards for Auditors.

Scope of the audit

An audit involves obtaining evidence about amounts and disclosures in the financial statements sufficient to give reasonable assurance that the financial statements are free from material misstatement, whether caused by fraud or error. This includes an assessment of: whether the accounting policies are appropriate to the charity's circumstances and have been consistently applied and adequately disclosed; the reasonableness of significant accounting estimates made by the trustees; and the overall presentation of the financial statements. In addition, we read all the financial and non-financial information in the Trustee's Report to identify material inconsistencies with the audited financial statements. If we become aware of any apparent material misstatements or inconsistencies we consider the implications for our report.

Opinion on financial statements

In our opinion the financial statements:

- give a true and fair view of the state of the Charity's affairs as at 31 December 2012 and of its incoming resources and application of resources in the year then ended, and
- have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice (applicable to Smaller Entities); and
- have been prepared in accordance with the Charities Act 2011.

INDEPENDENT AUDITORS' REPORT
TO THE TRUSTEES OF THE LIVER GROUP
FOR THE YEAR ENDED 31 DECEMBER 2012
(Continued)

Matters on which we are required to report by exception

We have nothing to report in respect of the following matters where the Charities Act 2011 requires us to report to you, in our opinion:

- the information given in the Trustees' Annual Report is inconsistent in any material respect with the financial statements; or
- sufficient accounting records have not been kept; or
- the financial statements are not in agreement with the accounting records and returns; or
- we have not received all the information and explanations we require for our audit.

.....
SIMPSON WREFORD & CO
Statutory Auditors
Wellesley House
Duke of Wellington Avenue
Royal Arsenal
London SE18 6SS

Dated:

THE LIVER GROUP

STATEMENT OF FINANCIAL ACTIVITIES

FOR THE YEAR ENDED 31 DECEMBER 2012

	Notes	Unrestricted Funds £	Restricted Funds £	Total 2012 £	Total 2011 £
Incoming resources	2				
<i>Incoming resources from generating funds</i>					
Voluntary income		107,506	7,313	114,819	39,846
Investment income		4,333	-	4,333	3,684
Incoming resources for the year		<u>111,839</u>	<u>7,313</u>	<u>119,152</u>	<u>43,530</u>
Resources expended	3				
Charitable activities		86,449	43,560	130,009	165,564
Governance costs		4,165	-	4,165	2,933
		<u>90,614</u>	<u>43,560</u>	<u>134,174</u>	<u>168,497</u>
Net outgoing resources for the year		21,225	(36,247)	(15,022)	(124,967)
Transfers		-	-	-	-
Fund balances at 1 January 2012		<u>417,173</u>	<u>36,247</u>	<u>453,420</u>	<u>578,387</u>
Fund balances at 31 December 2012		<u>438,398</u>	<u>-</u>	<u>438,398</u>	<u>453,420</u>

THE LIVER GROUP
BALANCE SHEET AT 31 DECEMBER 2012

	Notes	2012 £	2011 £
Current assets			
Cash at bank and in hand		<u>541,576</u>	<u>551,357</u>
Less: Creditors			
Amounts falling due within one year	5	<u>(103,178)</u>	<u>(97,937)</u>
Net assets		<u>438,398</u>	<u>453,420</u>
Financed by			
Unrestricted fund		438,398	417,173
Restricted funds	6	<u>-</u>	<u>36,247</u>
Total funds		<u>438,398</u>	<u>453,420</u>

These accounts have been prepared in accordance with the Financial Reporting Standard for Smaller Entities (effective April 2008)

Approved by the Trustees on 1/10/13.

Signed on their behalf by.....Clare Selden.....

Clare Selden
Trustee

THE LIVER GROUP**NOTES TO THE FINANCIAL STATEMENTS****FOR THE YEAR TO 31 DECEMBER 2012****1. Accounting Policies****Basis of accounting**

The accounts have been prepared under the historical cost convention and in accordance with applicable Accounting Standards, the Charities Act 2011 and the Statement of Recommended Practice "Accounting for and reporting by Charities" (SORP 2005), and the Financial Reporting Standard for Smaller Entities (effective April 2008).

Voluntary income

Donations represent amounts received during the period and arise with the United Kingdom. Covenant and Gift-Aid income is included in gross attributable tax recoverable.

Investment income

Interest receivable is credited to income in the period in which it is earned and is included gross of attributable tax recoverable.

Charitable activities

Charitable activities are the research expenditure incurred on behalf of the Charity and recharged to The Liver Group by University College London (UCL). These are charged to the statement of financial activities (SOFA) on an accruals basis. This expenditure includes amounts paid for capital equipment and laboratory infrastructure which are regarded as expenditure in these accounts

Governance costs

Governance costs include those costs associated with meeting the constitutional and statutory requirements of the charity and include the costs related to the statutory audit.

Allocation of overhead and support costs

All overhead and support costs relate to governance costs and have been allocated as such (note 3).

Liabilities

Liabilities are recognised in the accounts where there is an obligation to transfer economic benefit.

Fund accounting

Total funds comprise the accumulated surplus or deficit on the statement of financial activities. Unrestricted funds are available for use at the discretion of the Trustees in furtherance of the general objectives of the Charity. Restricted funds are subject to specific restricted conditions imposed by donors. The purpose and use of these funds are set out in the notes to the accounts.

THE LIVER GROUP

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR TO 31 DECEMBER 2012

Taxation

The Charity is not liable to income tax on income derived from its charitable activities as it falls within the various exemptions available to registered charities.

The Charity is not registered for value added tax (VAT) and is therefore unable to reclaim the input tax it suffers on its purchases. Expenditure in the accounts is therefore shown inclusive of VAT where appropriate.

2. Incoming resources

	2012	2011
	£	£
Voluntary income		
Thriplow Charitable Trust	2,500	-
The Coutts Charitable Trust	500	-
The Peter Stebbings Memorial Trust	59,652	29,826
The Gerald Palmer Eling Trust	3,500	-
Tom and Sheila Springer Charity	7,313	9,750
Stella Symons Charitable Trust	-	250
The Garfield Weston Foundation	33,333	-
B A Reeves	-	20
The Fitton Trust	250	-
The Fishmongers Company	1,750	-
The Oakdale Trust	1,000	-
Yorkshire & Clydesdale Bank Foundation	400	-
Armourers & Brasiers' Gauntlet Trust	750	-
Anonymous Donations	121	-
The Arnold Burton 1998 Charitable Trust	500	-
Reuben Foundation	500	-
Rowan Bentall Charitable Trust	500	-
The Astor Foundation	1,500	-
The Chandris Foundation	250	-
Bank of England	500	-
	<u>114,819</u>	<u>39,846</u>
Investment income		
Bank interest	<u>4,333</u>	<u>3,684</u>

3. Resources expended

	2012	2011
	£	£
Charitable activities		
Staff costs (employed on fixed term UCL contracts)	92,149	122,561
Research consumables and laboratory	<u>37,860</u>	<u>43,003</u>
	<u>130,009</u>	<u>165,564</u>
Governance costs		
Auditors' remuneration (including VAT)		
Accounting	1,104	985
Legal fees (Trade-marking etc.)	920	-
Audit	<u>2,141</u>	<u>1,948</u>
	<u>4,165</u>	<u>2,933</u>

THE LIVER GROUP

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR TO 31 DECEMBER 2012

The average weekly number of employees of UCL working for The Liver Group during the year was 4 (2011: 4). At the year end there were 4 employees of UCL working on The Liver Group research. In addition there were 3 PhD students paid a stipend under a 3 year studentship scheme. There were no employees with remuneration above £60,000 for the year ended 31 December 2012

None of the trustee's received any remuneration and their expenses reimbursed during the year amounted to £Nil (2011: £Nil)

4. Funding requirements

'Liver for Life' Appeal – What we require to fund (2013-2017)

Research salaries and studentships (including consumables) over 5 years

Senior Fellowship/Lectureship (1 required)	£341,630
Post-Doctoral Research Fellowship (2 required)	£631,285
<i>Post-Doctoral Research Fellowship per covenanted year</i>	<i>£126,257</i>
PhD Studentship (5 total required, 1 per year)	£484,309
Graduate Research Assistantship (3 required)	£926,846

Equipment over 5 years eg.

Small bench-top recurrent equipment	£1,000	-	£10,000
Major equipment	£10,000	-	£100,000
State-of-the-art preparative and analytical instruments	£50,000	-	£200,000

TOTAL FUNDRAISING GOAL

£2,694,070

The Liver Group is enthusiastic to establish named posts to acknowledge donations from individuals or organisations.

These projections do not form part of audited accounts of the charity.

5. Creditors

	2012	2011
	£	£
Accruals	4,375	2,755
Deferred Income	46,493	29,826
Amounts due to UCL	<u>52,310</u>	<u>65,356</u>
	<u>103,178</u>	<u>97,937</u>

THE LIVER GROUP

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR TO 31 DECEMBER 2012

6. Restricted funds

	Balance at 1 Jan 2012	Incoming Resources	Resources Expended	Transfers	Balance at 31 Dec 2012
	£	£	£	£	£
Peter Stebbings Memorial Trust	36,247	-	36,247	-	-
Tom & Sheila Springer Charity	-	7,313	7,313	-	-
	<u>36,247</u>	<u>7,313</u>	<u>43,560</u>	<u>-</u>	<u>-</u>

All restricted funds have arisen from donations received by the Charity from the donors detailed above.

The donations from Tom & Sheila Springer Charity were towards the salary of K Lintern. This funding ended in September 2012 for K Lintern, but will resume for a new student in June 2013 at a different rate. Each fund is applied in accordance with the restrictions imposed.

7. Other professional services provided by the auditors

In common with many other charities our size and nature we use our auditors to prepare and assist with the preparation of the financial statements.

8. Controlling Party

The ultimate controlling party of the charity is the board of Trustees.

THE LIVER GROUP

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR TO 31 DECEMBER 2012

We are grateful to the following for donations to the “Liver for Life” Appeal:

Anonymous	D M Wilton
Armourers & Brasiers Gauntlet Trust	Dako Limited
Associated British Ports	Economist Plc
BAE Systems	EJH Stephenson (Deceased) Charitable Trust
Bank of England	Friends Provident
Barclays Bank (Knightsbridge Limited)	Glaxo Plc (GlaxoKlineSmith)
Billingsgate Christian Mission Charitable Trust (The Fishmongers’ Company)	Guardian Royal Exchange Plc
Boots Plc	HJ Heinz Co Ltd Charitable Trust
Bowring Plc	Hon C A Pearson’s Charity Trust
Brian Wright Esq	Honeywell Plc
British Aerospace	IBJ
BS & IP Aynscombe	In Memoriam
BTR Plc (Invensys)	J H Turner
C E Health Plc	Jardine Insurance Services Ltd
CAF Bank	KPMG
Charles Littlewood Charitable Trust	Laing, London
Citibank	Land Securities Plc
Clydesdale Bank/Yorkshire Bank	Life Technologies
Commercial Union	Lloyds TSB Bank Plc
Communis Plc	M E Rickman Trust
Conoco Philips	Mars UK Corporate Services Ltd
Cookson Group Plc	Menzies Group
Cooper Charitable Trust	Morgan Crucible Company Plc
Council of Forte Trust Fund	Morgan Grenfell (Deutsche Bank)
Courage Plc	Mr & Mrs Sutcliffe
Coutts and Co	N Smith Charitable Settlement

THE LIVER GROUP

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR TO 31 DECEMBER 2012

We are grateful to the following for donations to the “Liver for Life” Appeal, continued:

New Brunswick Plc	The Coutts Charitable Trust
Peter Stebbings Memorial Trust	The Dunhill Medical Trust
Pfizer Ltd	The Eranda Foundation
Pharmaceutical Brand Consultancy Int	The Fitton Trust
Pricewaterhouse Coopers Plc	The Garfield Weston Foundation
Racial Charitable Trust	The Gerald Palmer Eling Trust
Reuben Charitable Trust	The Haberdashers Company
Richard Wilkinson Esq	The Hamamelis Trust
Rio Tinto Plc	The Harnett Charitable Trust
Robert Fleming Holdings Ltd	The John Ellerman Foundation
Royal London Insurance Ltd	The Mary Webb Trust
Rowen Bentall Charitable Trust	The Mercers Company
Rudolf Wolff & Co Ltd	The Oakdale Trust
S&I Donald	The Paul Balint Charitable Trust
Saddlers’ Company	The Penny in the Pound Fund Charitable Trust
Schroders Plc	The Really Useful Group Ltd
Seagrams Distillers Plc	The Sobell Foundation
Securicor Plc (G4S)	The Stella Symons Charitable Trust
Smiths Group	The Telegraph Plc
Societe Generale United Kingdom Charitable Trust	The Thomas Sivewright Catto Charitable Settlement
Special Trustees for Hammersmith & Acton Hospitals	The Wolfson Foundation
Steel Charitable Trust	Thomson Corporation
Sunlife Assurance Plc (AXA Sunlife)	Thriplow Charitable Trust
The Arnold Burton 1998 Charitable Trust	TI Group
The Astor Foundation	Tom & Sheila Springer Charity
The Bergqvist Charitable Trust	Tomkins Plc
The Bowerman Memorial Trust	Vauxhall Plc
The Bryan Guinness Charitable Trust	Violet M Richards Charity
The Chandris Foundation	Yorkshire and Clydesdale Bank Foundation
The Childwick Trust	Wilkinson Hardware Stores Ltd
The Clothworkers’ Foundation	William & Mabel Morris Charitable Trust

THE LIVER GROUP**NOTES TO THE FINANCIAL STATEMENTS****FOR THE YEAR TO 31 DECEMBER 2012****Publications arising from the work of The Liver Group Charity in 2012**

Protein engineered variants of hepatocyte growth factor/scatter factor promote proliferation of primary human hepatocytes and in rodent liver.

Ross J, Gherardi E, Mallorqui-Fernandez N, Bocci M, Sobkowicz A, Rees M, Rowe A, Ellmerich S, Massie I, Soeda J, Selden C, Hodgson H.

Gastroenterology. 2012 Apr;142(4):897-906. PMID: 22178588

Storage temperatures for cold-chain delivery in cell therapy: a study of alginate-encapsulated liver cell spheroids stored at -80°C or -170°C for up to 1 year.

Massie I, Selden C, Hodgson H, Fuller B.

Tissue Eng Part C Methods. 2013 Mar;19(3):189-95. Epub 2012 Sep 7. PMID: 22834979

Application of three-dimensional culture conditions to human embryonic stem cell-derived definitive endoderm cells enhances hepatocyte differentiation and functionality.

Ramasamy TS, Yu JS, Selden C, Hodgson H, Cui W.

Tissue Eng Part A. 2013 Feb;19(3-4):360-7. Epub 2012 Sep 24. PMID:23003670

Presentations at national and international scientific meetings

Developing a Controlled Vitrification Machine (Liquidus Tracker) and associated low toxicity CPA solutions to cryopreserve encapsulated liver cell spheroids cells for a bioartificial liver device. E.Puschmann, C.Selden, H Hodgson, M.Winslet and B.Fuller 49th Annual Meeting of the Society for Cryobiology June 2012

Towards A Clinical Bioartificial Liver Machine For Acute Liver Failure

C Selden, E Erro, W Spearman, D Kahn , M Miller, A Figaji, J Bundy,C Legallais , H Hodgson

Presented at the European Society of Artificial Organs

Int J Artif Organs 2012; 35(8): 555 – 587