REMEDE public event
‘Embryonic Stem Cell Research: An Ethical Debate’
In association with the Centre of Bioethical Research & Analysis, NUI Galway

Venue: Ardilaun Hotel, Taylor’s Hill, Galway
Tuesday 18th October, 7.30 pm
All are welcome

The Report of the Commission on Assisted Human Reproduction, published earlier this year, made a number of recommendations on embryonic stem cell research. REMEDI has invited three speakers to Galway to represent a range of opinion on the ethical issues and discuss the recommendations. Prof. Darvi-Ireland is Chair of the Commission on Assisted Human Reproduction. Michael Parker is Professor of Bioethics at the University of Oxford, and Dr. Daniel O’Mathuna, a Bioethicist at Dublin City University. Following short presentations from the three speakers, the audience will be invited to contribute to the debate.

The research strategy at REMEDI is to focus on specific target applications for stem cell and gene therapy. In this issue we are reporting on stem cell therapy and the spinal cord repair. At the REMEDI Scientific Advisory Board meeting in May, it was agreed to focus on specific target applications for stem cell and gene therapy. In this issue we are reporting on stem cell therapy and the spinal cord repair. At the REMEDI Scientific Advisory Board meeting in May, it was agreed to focus on specific target applications for stem cell and gene therapy.

REMEDE is hosted by National University of Ireland, Galway
www.remedi.ie
Regenerative Medicine Institute

REMEDE HIGHLIGHTS
The highlight of the year at REMEDI was the official opening of the institute by Minister for Enterprise Trade and Employment, Michael Martin on February 25th. In his speech, Minister Martin said that Centres such as REMEDI are catalysts for change and opportunity, and REMEDI is establishing a world-class profile for Ireland in the area of regenerative medical research. A number of activities at the Institute since the opening will drive an internationally competitive institute, by ensuring that innovative interactions between the gene therapy and stem cell research programmes at REMEDI are realised.

At the REMEDI retreat held in February, REMEDI researchers, industry and academic partners and clinical investigators were invited to REMEDI for a research programme and future strategies were discussed. This annual retreat will ensure a cohesive research team so that synergies between stem cell and gene therapy research programmes are identified and exploited – the greatest strength of the Institute when measured against research internationally.

The meeting of the REMEDI Scientific Advisory Board in May of this year provided a further opportunity to assess research progress at REMEDI and independent and expert advice from the Board will inform the research programmes.

REMEDE/Congway Academic Collaboration
Stem Cell Proteome Project
REMEDE scientists are working with Prof Des Fitzgerald and Dr. Gerard Cagney at the Conway Institute to develop a comprehensive database of proteins expressed by stem cells in an effort to discover new control elements that regulate differentiation. This project is an unprecedented scale and will lead to an in-depth understanding of adult stem cells and their therapeutic use.

For further information on REMEDI contact:
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THE REMEDI INTERVIEW

Linda Howard

Throughout her distinguished career she has moved between the academic, the technical and the commercial. When studying for her BSc degree in Microbiology with Microbial Technology from Warwick University in the UK, she spent a year with ICI Pharmaceuticals (AstraZeneca) working on proteins. Her PhD research was done at the Medical Research Council Toxicology Unit in Leicester, UK. She worked on a novel metalloprotease (a type of enzyme) that was able to degrade a basic protein of myelin, the insulating sheath that surrounds nerve fibres. A post-doctoral research fellowship at the Georgetown University Medical Center in Washington DC then beckoned. “I moved to Washington in order to work with a group studying the cell biology of invasive and metastatic cancer cells,” she said. “I was also keen to work in the US where research is well funded and has a dynamic ‘can-do’ reputation.”

This was followed by more post-doctoral research at the Memorial Sloan-Kettering Cancer Center in New York, where she expanded her work on novel proteins. Then it became time for a move to the more industrial side. Dr Howard went to Osiris Therapeutics, Baltimore, a leading company in commercialising therapies based on adult mesenchymal stem cells (MSCs). Mesenchymal stem cells are a particular form of tissue that develops into connective and skeletal tissues. “I moved from New York to Maryland after getting married,” she explained. “I wanted to find a research job that would be exciting and engaging, even though I knew I would be moving out of my specialised niche studying the biochemistry and cell biology of cell surface proteolytic enzymes.” At Osiris, she isolated and expanded rat and human MSCs. She treated them to make them differentiate into mesenchymal lineages and investigated their potential to become or support neural cells.

“Whilst at the company I became very interested in many aspects of their basic cell biology, often related to areas which were not within the scope of product-directed research, so when the opportunity arose to move to a more academic research environment at REMEDI I was very excited,” she said.}

REMBEDI SCIENTIST

EMBARK ON AMBITIOUS RESEARCH PROGRAMME INTO SPINAL CORD INJURY RESEARCH OUTPUTS

Linda Howard has a double interest in science; she enjoys doing basic biological research, and she also has a keen interest in seeing that research translated into practical and commercial use. This dual interest led her to Galway from the US in November last year.

“What we have here in REMEDI is a very nice combination of studying the basics of biology with taking in the big picture of how results could be of practical benefit to patients down the line,” she explained.

Her current work in REMEDI includes looking at aspects of the regeneration potential of adult stem cells. For now, she hopes that eventually this work will be of practical benefit in treating spinal injuries, though the scope for future therapies is wider. “Therapies based on stem cells could eventually bring about as big a change in medicine as antibiotics have.”

Specifically, she is working on both rat and human adult stem cells, partly to pave the way to meeting legal requirements to be met before a therapy or medicine can be used on humans. She is comparing the behaviours of rat and human cells, cultured with different methods, because rat models are widely used. One aspect is investigating how adult stem cells are able to change from fibroblastic cells to bone, cartilage and fat. “The application of the science is in its infancy, and I am first looking at spinal cord injury,”

She points out that even if full healing of the central nervous system does not become possible, some restoration of movement would be of great help to people with spinal cord injury.

As well as conducting her own research, she contributes her technical assets, including her long experience with the PCR (polymerase chain reaction) technique. Since coming to REMEDI she has been training post-graduate students in this and related areas.

Scientists at REMEDI have a strong interest in spinal cord repair and are pursuing ambitious programmes in this area. The recent additions of Dr. Cathal Moran and Prof. Anthony Windebank at the Institute provide a critical mass of expertise in this area. Professor Windebank, from the Mayo Clinic, Rochester, Minnesota, comes to REMEDI on a Science Foundation Ireland ETS Walton Fellowship. Professor of Neurology at the Mayo Clinic College of Medicine, Windebank also directs the Cellular Neurobiology Laboratory. His research interests are focused on repair and regeneration of tissue after spinal cord injury. Dr. Cathal Moran, an NUI Galway medical graduate, joins REMEDI from the Mater Hospital where he was Orthopaedic Registrar. Dr Moran travelled to the US to train in this area and spent time working with Prof Windebank at the Mayo Clinic as well as receiving training at the Reeve-Irvine Spinal Cord Research Institute, at UC Irvine, California.

Dr. Moran and Prof. Windebank are working on a research programme at REMEDI to develop treatments for spinal cord injury. They are investigating the use stem cell and gene therapy products with biomaterial scaffolds. This new research programme will become a significant element of REMEDI’s research activity, which we hope will provide new treatment options for patients.
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WELCOME NOTE
Welcome to the second edition of REMEDI Review. Since our last edition, issued at the official opening of REMEDI in February, we have reached critical mass in terms of personnel and facilities, research programmes are gaining momentum and our outreach programme has gone from strength to strength. Research progress and future plans were discussed at a weekend research retreat in February and the REMEDI Scientific Advisory Board met in May.

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REMEDI public event
at BA festival of science
Over 100 people attended the REMEDI public night: The Future of Medicine - Stem Cell and Gene Therapy at the BA festival of science, Trinity College Dublin on September 8th. REMEDI Directors, Professors Tim O’ Brien and Frank Barry discussed stem cell and gene therapy research from a scientific and clinical perspective. The presentations were followed by a Q&A session chaired by Irish Broadcaster, Dr. John Bowman.

REMEDI Director

to give Stokes Lecture
Prof Tim O’ Brien has been invited to give the Stokes lecture at the Annual Meeting of the Irish Cardiac Society in October. The Stokes lecture, in memory of renowned cardiologist William Stokes, is given each year at the AGM by a professional considered to be at the cutting edge in cardiology. In his lecture Prof O’ Brien will review the current status of stem cell therapy for cardiac regeneration.

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