Royal Victoria Eye & Ear Hospital Research Foundation

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Progress Report 2015-2016

2015-2016 Progress Report

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INTRODUCTION


Jeremy O'Connor - *Chairman*

Since its establishment in 1974, the Research Foundation at the Royal Victoria Eye & Ear Hospital, Dublin has had a particular interest in various forms of inherited and metabolic retinal diseases. It was amongst the first centres in the country to develop electrodiagnostics to aid in the diagnosis and assessment of patients with sight threatening conditions. Today, the Unit possesses state-of-the-art electrodiagnostic equipment and can carry out the full range of electrophysiological tests of retinal and visual function to the highest international standards. The Research Foundation has expanded over the last number of years and includes research on all types of eye disease including retinal disease, ocular oncology, ocular inflammation, corneal disease and eye complications of systemic disease, in addition to research in diseases of the ears, nose and throat.

Mr Jeremy O'Connor

Chairman

Royal Victoria Eye & Ear Hospital Research Foundation

MISSION STATEMENT & GOVERNANCE STRUCTURE

Mission Statement

The Royal Victoria Eye & Ear Hospital Research Foundation Limited is a registered charity (Charity Registration No 20083533). Since its establishment in 1974, the Research Foundation has supported clinical research in the prevention and treatment of eye and ear diseases. It is the aim of the Research Foundation to development new treatments for eye and ear conditions that will eliminate hearing and sight loss. This will lead to a better understanding of how to treat and prevent eye and ear disease which in turn will result in improved patient care and enhanced quality of life for patients. The Research Foundation is a charitable Company Limited by guarantee and registered in Ireland.

Governance Structure

The Research Foundation is governed by a Board of Directors. It is the duty of the Directors to help achieve the Research Foundation's charitable objectives and to safeguard and promote its values. The Directors meet on a quarterly basis. The Directors are accountable to the Members of the Research Foundation who meet once a year at the Annual General Meeting.

Board of Directors

Director (Chairperson)..... Jeremy O'Connor
Director (Treasurer) ..... Aoife Doyle
Director..... Noel Horgan
Director..... Mark Cahill
Director..... Conor Murphy
Director..... Susan Kennedy
Director..... Andra Bobart-Hone

Members of the Research Foundation

Member ..... Danny Dunne
Member ..... Patrick Dowling
Member ..... William Power
Member ..... Louis Collum
Member ..... Jim Ruane
Member ..... Peter Barry
Member ..... David Charles

Management Committee

Consultant Ophthalmic Surgeon (Chair)..... Jeremy O'Connor
Consultant Ophthalmic Surgeon ..... Aoife Doyle
Medical Director..... Paul Kenna
Chief Electrodiagnostic Technician ..... Hilary Dempsey
Research Co-ordinator..... Emma-Jayne Verner

SERVICES

Staff and Affiliated Professionals

Medical Director ..... Paul Kenna
Chief Electrodiagnostic Technician ..... Hilary Dempsey
Senior Electrodiagnostic Technician ..... Karen Collins
Research Registrar ..... Emma Duignan
Clinical Research Fellow ..... Conor Malone
Research Registrar ..... Maedbh Rhatigan
Clinical Research Fellow ..... Ghaleb El-Farouki
Clinical Tutor & Research Fellow ..... Sinéad Connolly
Research Nurse ..... Anne Caslin
Research Nurse ..... Claire English
Research Co-ordinator ..... Emma-Jayne Verner
Senior Photographer ..... Hugh Nolan
Research Photographer ..... Laura Hughes
Research Photographer ..... Stephen Comiskey
Research Accounts ..... Josephine Lavelle
Research Administrator ..... Cathy King
Senior Counselling Manager ..... John Delany

Services Available

- Clinical Electrophysiology Service – to assess retinal and optic nerve function
- Colour Vision Testing – Farnsworth Munsell 100 hue and Lanthony D
- Dark Adaptation
- Visual field testing - Humphrey and Goldmann fields
- A-Scans for assessing power of lens implants for cataract surgery
- Full eye examination for patients and their families suffering from Retinitis Pigmentosa and other inherited retinal degenerations
- Pattern E.R.G for pre-clinical visual function loss in Glaucoma
- Optical Coherence Tomography for Assessment of Macular Disease and Glaucoma
- GDX for Retinal Nerve Fibre assessment in Glaucoma
- Counselling Service for visually impaired people and their families

COUNSELLING SERVICE AT RESEARCH FOUNDATION


Mary Lavelle & Star

The Research Department in the Royal Victoria Eye & Ear Hospital provides a counselling and support service every Wednesday and Thursday mornings from 10.00 a.m. to 1.00 p.m. for newly-diagnosed patients and their families and also for patients on follow-up visits.

This service is provided by Insight Counselling, an initiative of Fighting Blindness. The Centre was established in 2002, with the objective of providing practical help, emotional support and psychotherapy to individuals experiencing sight loss, as well as to their families. Sight loss impacts in very many different ways and at many different levels on individuals and their families. The onset of sight loss can change one's relationship with self and others and reaching out for support in these circumstances can be very beneficial. The Insight Counselling Service provides a safe place for exploring matters of concern and help in finding a way through what can be a difficult and frightening time.

On-going counselling is also available by appointment Monday to Friday at the Insight Counselling Centre premises at 7 Ely Place, Dublin 2 and each Friday in Plunkett Chambers, Oliver Plunkett Street, Cork. It is also possible to avail of their nationwide telephone counselling service, to arrange an appointment for any of these services please contact Insight Counselling 01-6746496. The service is provided free of charge by Fighting Blindness and is open to referrals from the clinical staff.

John Delany
Senior Counselling Manager
Insight Counselling Centre
7 Ely Place
Dublin 2

GENETICS RESEARCH

The Research Foundation has had a long-standing interest in inherited retinal degenerations since its inception. The Foundation is the premier centre in the Republic of Ireland for the clinical characterisation of patients with a variety of inherited retinal diseases including, retinitis pigmentosa (RP), choroideraemia, Stargardt Disease and X-linked retinoschisis, amongst many others. In collaboration with the Ocular Genetics Unit at Trinity College Dublin, the Foundation has contributed significantly to advances in our understanding of the genetic causes of a number of inherited retinal degenerations. The first gene ever implicated in any form of Retinitis Pigmentosa, Rhodopsin, was identified as a result of this collaboration in 1989. Other genes, first identified in Irish family characterised at the Foundation and shown to be causative of other forms of RP include Peripherin / RDS gene in a form of autosomal dominant RP, the mitochondrial second serine transfer RNA gene (MTTS2) in patients with RP and hearing loss and the first documentation of a dominantly-acting mutation in the RPE65 gene in a late-onset form of RP.

The primary aim of the research carried out at the Foundation has always been to help in the development of possible therapies for these currently untreatable conditions. Our discovery that a mutation in the RPE65 gene caused a dominantly inherited retinal degeneration in patients with RP enabled us to carry out a phase I / II human clinical trial of an orally delivered synthetic retinoid, sponsored by the Canadian pharmaceutical company QLT, in Irish patients with the condition. This was the first gene-directed human clinical trial ever conducted of a therapy for a dominant form of RP.

These advances have been possible due to the generous cooperation of patients ascertained and clinically investigated at the Foundation. Researchers at the Foundation continue this effort with the goal of achieving the core aim of the Foundation, namely 'development of new treatments for ear and eye conditions that will eliminate hearing and sight loss'.

▶ Projects

1) Next generation gene sequencing of patients with inherited retinopathies

The significant advances in the identification of disease causing genes and gene mutations, to which the Foundation has made a major contribution, has hastened the discovery of possible therapies for these untreatable conditions. The QLT 091001 treatment trial illustrates the importance of identification of disease-causing genes in patients with inherited retinopathies as a pathway to discovery of new treatment options, which has always been a key research aim of the Foundation. The availability of new gene sequencing technologies, particularly next generation sequencing (NGS) has made possible more rapid and cost-effective genetic diagnosis for inherited retinopathy patients. With this in mind, and to prepare Irish patients for possible future gene-based treatments, the Foundation, in collaboration with Prof. G. Jane Farrar at the Ocular Genetics Unit at Trinity College, Dublin, in 2010 initiated an NGS research programme to do genetic analysis on patients attending the Foundation. This ambitious project, approved by the Research and Medical Ethics Committee of the Royal Victoria Eye and Ear Hospital, Dublin, was

awarded further funding in 2013 from Fighting Blindness Ireland and the Medical Research Charities Group. To date, over 800 patients, identified and clinically investigated at the Foundation, have been recruited on a prospective basis. While the aim of this research is to analyse the spectrum of disease-causing genes in the Irish retinopathies population, the identification of these genes is vitally important information for those participating in the study as it gives patients the most precise diagnosis possible and enables them to consider participation in treatment trials in the future. Fighting Blindness Ireland, recognizing the importance of this work, in 2014 generously provided funding for Dr. Emma Duignan, and currently Dr. Conor Malone, to participate in this study and to expedite recruitment of patients. This study will contribute, together with similar work in Northern Ireland being carried out by Dr. Guili Silvestri, as well as Mr. David Keegan at the Mater Hospital, Dublin, to Target 5000, the project of Fighting Blindness whose aim is to genotype all patients with inherited retinal degenerations on the island of Ireland.

2) Servier Phase III Clinical Trial CL3 16527 067 (EudraCT Number: 2006-005475

Owing to the expertise of the Foundation in the assessment of retinal function the French pharmaceutical company Servier commissioned principal investigator, Dr. Paul Kenna, to carry out the Irish arm of a long term (3 years) ophthalmic safety study of Ivabradine, a novel heart-rate reducing agent administered orally at the therapeutic doses (2.5/5/7.5 mg b.i.d.) on top of anti anginal background therapy, to patients with chronic stable angina pectoris. This international, double blind, placebo controlled study commenced in 2012 and was successfully completed in 2015.

Mr Paul Kenna
Medical Director & Lecturer in Ocular Genetics
Royal Victoria Eye & Ear Hospital Research Foundation

RETINAL RESEARCH

The Research Foundation is the leading principal investigating site in Ireland for a number of Phase III clinical trials examining the use of anti-VEGF intravitreal injections for the treatment of retinal diseases. This collaboration with Novartis Pharmaceuticals is a recent development for the Research Foundation and we hope to expand this facility in the future. The use of anti-VEGF therapies has been found to be effective in treating symptoms of age-related wet macular degeneration, diabetic macular oedema and retinal vein occlusions.

Projects

1) OCTAVE STUDY

This is a phase 3, randomized, double-masked multi-centre clinical trial examining the safety and efficacy of ranibizumab (Lucentis) injections in two treatment regimens on patients with neo-vascular age-related macular degeneration. The Research Foundation will be the principal investigating site for Ireland. The Octave study commenced in October 2013 and was completed by January 2015.

2) HARRIER STUDY

This is a Phase 3, randomized, double-masked multi-centre, two arm study assessing the efficacy and safety of RTH258 compared to Aflibercept (Eyelea) in patients with neo-vascular age-related macular degeneration. The study commenced in February 2016 and is a 24 month study.

Mr Mark Cahill
Consultant Ophthalmologist and Vitreoretinal Surgeon
Royal Victoria Eye & Ear Hospital

OCULAR IMMUNOLOGY, INFLAMMATION AND CORNEAL RESEARCH

The Research Foundation supports long term collaboration between the ocular inflammation/cornea service of the Royal Victoria Eye & Ear Hospital, the National Institute for Cellular Biotechnology (NICB) at Dublin City University, the Department of Immunology at the Royal College of Surgeons Ireland and the Department of Rheumatology at St Vincent's University Hospital. This collaboration brings together clinical and scientific skills from a range of disciplines that are helping to improve our understanding of a number of inflammatory eye conditions and corneal diseases.

1) Herpes simplex keratitis research

Herpes simplex keratitis (HSK) represents the single most important inflammatory disease of the cornea with respect to its impact on vision and health related quality of life. It is characterised by repeated episodes of inflammation in the cornea, the clear window at the front of the eye, which leads to corneal scarring and, in many cases, loss of vision. It is caused by the common cold sore virus, known as Herpes Simplex Virus type 1. Our research into this condition aims to improve our understanding of how the herpes virus interacts with our immune system, particularly our innate immunity which is our

first line of defense. By improving our understanding of this interaction, we hope to identify new targets for treatments of this disease and improve the outlook for sufferers of HSK.

Projects

1. Evasion of the innate immune response by herpes simplex virus in the cornea: molecular mechanisms mediating interferon down regulation and virus survival
2. Effect of corneal Herpes Simplex Virus-1 infection on Toll-Like Receptor expression in human peripheral blood mononuclear cells

Investigators: Conor Murphy, David Shahnazaryan, Joan Ni Gabhann and Caroline Jefferies.

Affiliations: Royal Victoria Eye and Ear Hospital and Royal College of Surgeons in Ireland.

2) Giant cell arteritis research

Giant cell arteritis (GCA) is the most common form of primary systemic vasculitis (inflammation of blood vessels). Patients with GCA endure significant morbidity associated with the disease and its treatment. Significant deficits exist in our understanding of this disorder, particularly the underlying causes and mechanisms of the disease. Through a multidisciplinary approach we are developing a large database of GCA patients which will facilitate clinical and translational research studies, audit and participation in international multi-centre clinical trials. We are performing radiological assessments of patients with suspected GCA, including MR angiography, CT angiography and temporal artery ultrasound, in order to improve diagnostic accuracy. In addition, we are performing laboratory investigations on the blood and temporal artery biopsy specimens of patients with GCA with the aim of improving our understanding of how this disease occurs at a molecular level. This will hopefully help us to use more specific and effective treatments in the future and help us to understand why some patients do not respond well to conventional therapy with steroids. In the future we will perform genetic studies that we hope will provide information about the underlying causes and long term prognosis of the disease.

Projects

1. Improving outcomes in giant cell arteritis through clinical collaboration
2. Increasing diagnostic accuracy in GCA through imaging
3. Blood Vessel Instability and Oxidative Damage in Giant Cell Arteritis
4. Investigating pro-inflammatory mechanisms of GCA using an ex-vivo temporal artery culture model

Investigators: Conor Murphy, Eamonn Molloy, Ursula Fearon, Douglas Veale, Geraldine McCarthy, Lorraine O'Neill and Richard Conway.

Affiliations: Royal Victoria Eye and Ear Hospital, Royal College of Surgeons In Ireland, St Vincent's University Hospital, University College Dublin, St James' Hospital and the Mater Misericordiae Hospital.

3) Primary Sjögren's Syndrome Research

Primary Sjögren's Syndrome (pSS) is an autoimmune disease that destroys the specialised secretary glands that produce saliva and tears, causing dry eyes and dry mouth as well as generalized symptoms

of aches, pains and lethargy. There is currently no cure for pSS and the exact cause is unknown. In this study we are expanding our understanding of this disease at a molecular level by investigating the role of toll-like receptors on blood cells from patients with pSS, as well as minor salivary gland biopsies (when taken for diagnostic purposes), tear samples and ocular surface washings. This study is being funded jointly by the Health Research Board (HRB) and the RVEEH Research Foundation.

Project

1. Profiling Toll-like receptor responses in patients with primary Sjögren's syndrome
2. Utilising microRNA-based therapeutics for the development of novel targeted drug delivery device for patients with dry eye disease (DED)

Investigators: Conor Murphy, Sinead Connolly, Con Timon, Eamonn Molloy, Joan Ni Gabhann.

Affiliations: Royal Victoria Eye and Ear Hospital, St Vincent's University Hospital and Royal College of Surgeons in Ireland.

4) Anterior uveitis and spondylarthropathy research

Acute anterior uveitis (AAU) is characterised by the acute onset of inflammation in the front compartment of the eye, leading to pain, light sensitivity and blurred vision. It is a common reason for presentation to ophthalmic emergency departments. In approximately half of cases there is an identifiable systemic disease, most commonly the seronegative spondyolarthropathies (SpA). This is a group of inflammatory joint diseases that predominantly affect the spine but have many other manifestations including skin and bowel problems.

This collaboration with St. Vincent's Unversity Hospital Department of Rheumatology has led to the development of an assessment algorithm called the Dublin Uveitis Evaluation Tool (DUET) that enables the earlier recognition of SpA. With early detection come early and more effective treatment and disease control, and hence better quality of life. Our laboratory studies on the causative mechanisms of AAU are also providing us with some fascinating insights into the disease.

Projects

1. Validation of the Dublin Uveitis Evaluation Tool (DUET), a new algorithm for the detection of undiagnosed spondylarthropathies in patients presenting with acute anterior uveitis in a primary care ophthalmology setting.
2. To investigate the role of regulatory microRNA and dendritic cell function in the pathogenesis of acute anterior uveitis.
3. Prospective evaluation of vision and health-related quality of life in patients with acute anterior uveitis.
4. Peripheral blood mononuclear cell activation status and functional characteristics in patients with acute anterior uveitis.

Investigators: Conor Murphy, Micheal O'Rourke, Pathma Ramasamy, Muhammad Haroon, Mary Connolly, Douglas Veale, Ursula Fearon, and Oliver Fitzgerald.

Affiliations: Royal Victoria Eye and Ear Hospital, Royal College of Surgeons In Ireland, St Vincent's University Hospital, and University College Dublin.

5) Genetic analysis of patients with congenital hereditary endothelial corneal dystrophy (CHED)

CHED is a very rare inherited disease that manifests early in life with clouding of the front window of the eye, the cornea, as well as poor vision and nystagmus (wobbly eyes). It typically presents between the age of 2 and 5 years and causes lifelong bilateral blindness. In previous work, Dr Collette Hand, Lecturer in Genetics at UCC, located the abnormal gene causing CHED to chromosome 20. Since then, the affected gene has been identified and called SCL4A11. A large number of mutations in this gene have been described in different populations. In this study, we wish to identify the nature of the mutation in the SCL4A11 gene in a large Irish family with the condition.

Investigators: Conor Murphy, Mairide McGuire, Collette Hand.

Affiliations: Royal Victoria Eye and Ear Hospital, Royal College of Surgeons In Ireland, and the Department of Molecular Genetics, University College Cork.

Professor Conor Murphy

Professor of Ophthalmology
Royal College of Surgeons Ireland, Royal Victoria Eye & Ear Hospital

6) VISICORT corneal transplantation research

VISICORT is a multi-disciplinary research project involving 12 partners from across the EU with expertise in corneal transplantation, cell therapy, immunology, bio-sampling, systems biology/immune profiling and bioinformatics. The project will complete the first ever systematic immune profiling of human corneal transplant recipients. Clinical data and bio-specimens from over 700 corneal transplant recipients at 5 leading transplant centres, including the Royal Victoria Eye and Ear Hospital and RCSI, will be centrally collated and distributed to cutting-edge laboratories for multi-platform profiling and integrated bioinformatics analyses. Profiling data will generate a better understanding of corneal transplant rejection and failure. This knowledge will be used to develop novel biomarker-based surveillance strategies and, coupled with SME-based expertise in cell product development, will also inform the design and initiation of an optimised clinical trial strategy of immunomodulatory stromal stem cell therapy in high-risk human corneal transplant recipients. The project is being coordinated by Prof Matt Griffin, Professor of Transplant Biology at NUI, Galway. Benefitting from a €6 million award from the European Commission, the project launched in May 2014 and following a development phase we are delighted to announce that patient recruitment commenced in 2015. Having performed 111 corneal transplants at RVEEH in 2014, we expect the Irish contribution to recruitment to be strong and we look forward to being able to achieve better outcomes for our patients in the future.

Principle investigator: Conor Murphy

See www.visicort.eu

CORNEAL TISSUE ENGINEERING RESEARCH

Projects

1) Gene expression profile of cultured limbal-cornea epithelial stem cells and cultured limbal fibroblast cells.
2) The role of cell culture set up in the growth of cultured limbal-cornea epithelial stem cells.

Investigators: William Power, Conor Murphy, Martin Clynes, Finbarr O'Sullivan & Clare Gallagher

Affiliations: Royal Victoria Eye and Ear Hospital, Royal College of Surgeons In Ireland

Mr William Power
Consultant Ophthalmologist
Royal Victoria Eye & Ear Hospital

FUNDRAISING

Art Exhibition and Sale

A Second fundraising Art and Sculpture Exhibition and Auction was held at the beginning of June 2016 in the Education and Conference Centre of the Royal Victoria Eye & Ear Hospital. There were over 90 works from well many renowned Irish and international artists including the 'Tree of Life' by John Behan RHA, 'Woman Thinking' by Pauline Bewick RHA, 'Sea Eye' by Rachel Joynt RHA, 'Celtic Twilight' by Edward Delaney RHA, 'Still Life with Wrapped Apple' by James English RHA, 'Roses' David Hone RHA , 'Skellig Michael' by Carmel Mooney, 'Waiting Swallow' by Ian Pollock and 'It's all I have' by Patrick O'Reilly RHA to name a few. The profits are towards research into deafness and blindness.

Dr Fiona D'Arcy (left) and Dr Andra Bobart-Hone (right) at the Art Exhibition and Sale

The decision to organize this year's event by the Research Foundation of the Royal Victoria Eye and Ear Hospital follows on from the first successful event in 2013. The first art sale was followed later that same year by a very successful raffle of some paintings and drawings. The Auctions have been spearheaded by Dr Andra Bobart-Hone, Consultant Ophthalmologist at the Hermitage Medical Clinic and a Director on the board of the Research Foundation of the Eye and Ear Hospital. She paid tribute to the tremendous generosity and support of the artists and noted that the endeavor would not have been possible without the tireless efforts of many of them, with advice from Leo Higgins of Cast Foundry, John de Vere White and Carmel Mooney.

Collectors view artwork at the Art Exhibition

Fundraising efforts will continue to be boosted year round by a special addition to the art sales catalogue this year. Vivienne Roche, RHA, has kindly given the Research Foundation exclusive rights to a limited edition of 50 prints. It is entitled 'Between Eyelid and Eye' and is a 35 x 97.5 cm rather vibrant archival digital TRYPTICH print on watercolour paper and is available by contacting the Research Foundation. It is available framed or unframed. The entire proceeds are for the Foundation.

Please see www.researchfoundation.ie for the exciting collection of artwork.

Art Raffle

Following on from the Silent Bid Art Auction and Sale in June 2016, an Art Raffle was held to support clinical research in blindness and deafness. The raffle featured the works of Irish artists Vivienne Roche RHA, Sonja Landweer, Betty McCormack and Karen Ryan and attracted much support from staff members and patients alike.

Raffle prizes included:

No.	Prize	Value
Prize 1	Vivienne Roche RHA 'Between Eyelid and Eye' 35x97.5cm TRYPTICH signed. An archival digital print on watercolour paper (limited edition of 50) and exclusive to the Research Foundation	€400
Prize 2	Sonja Landweer 'Drawing of The Burren I' Framed drawing, signed	€380
Prize 3	Sonja Landweer 'Drawing of The Burren II' Framed drawing, signed	€380
Prize 4	Betty McCormack 'Turf Cutters' oil on canvas, signed	€400
Prize 5	Karen Ryan 'Painting of Irises' 25x51cm acrylic on canvas, signed	€275
Prize 6	Carmel Mooney 'A sense of place' Hard-cover book, signed	€45

Carmel Mooney - Artist

The draw date was held on Wednesday 14th December 2016 by the Chairperson of the Research Foundation where the lucky winners were announced. The Research Foundation, Royal Victoria Eye & Ear Hospital would like to thank all of the artists who generously submitted artwork to the Silent Bid Auction, the staff of the hospital and family and friends for their tremendous support and for making the Silent Bid Auction and Art Raffle such a success.

Dr Andra Bobart-Hone

Director of Research Foundation Royal Victoria Eye and Ear Hospital

Consultant Ophthalmologist Hermitage Medical Clinic

DR EITHNE WALLS RESEARCH FUND, VHI WOMENS MINI MARATHON

The runners and walkers before the race

Since 2010, each June Bank Holiday weekend a group of the Walls Family, staff of the hospital and friends come together to celebrate the memory of Dr Eithne Walls by running the VHI Women's Mini Marathon. Eithne was a Senior House Officer in Ophthalmology at the Royal Victoria Eye & Ear Hospital. Eithne along with her friends Dr. Aisling Butler and Dr. Jane Deasy, were passengers on the ill-fated flight AF447 which tragically disappeared over the Atlantic as it travelled from Rio de Janeiro to Paris on June 1st 2009.

Maire Campbell, Mary Walls, Kathryn Walls, Paula Goulding

Before this tragic and devastating accident, Eithne was destined to become a great eye surgeon and effect real change in the lives of her patients. She was a gifted, vibrant and special person and her loss has had a profound impact on all who were privileged to know her. Following this tragic accident Eithne's family established a research fund at the Research Foundation in her memory. This fund helps to support the vital research work of the Research Foundation into eye and ear disease.

Each year, Eithne's colleagues in Riverdance, staff of the hospital and family and friends meet to honour and celebrate the memory by running the VHI Women's Mini Marathon to raise vital funds for the Research Foundation. We would like to thank the Walls family, staff of the hospital and all the dancers from Riverdance productions for their generous donations which will help to support eye and ear research.

EVENTS

Eithne Walls Research Meeting

This meeting is held annually in June in the Education & Conference Centre of the Royal Victoria Eye & Ear Hospital. The meeting, held in memory of Dr Eithne Walls, is a forum for the young doctors in the hospital to present their research and to develop their ability to undertake research and present it to their peers.

This meeting continues to grow from strength to strength each year, which allow us to remember our dear colleague and foster continued interest in ophthalmic research.

Dr Sinéad Connolly (left) is presented with the Research Foundation Clinical Prize Award by Dr Maureen Hillery (right)

Winner	Award	Title	Year
Dr Maedbh Rhatigan	Eithne Walls Memorial Award	'Negative regulators of inflammation and Age- Related Macular Degeneration in an Irish Population'	2015
Dr Micheal O'Rourke	Research Foundation Clinical Prize	'Dendritic cells in non-infectious anterior uveitis'	2015
Dr Ghaleb El-Farouki	Eithne Walls Memorial Award	'Neutralising Interleukin-18 binding protein (IL18-BP) in a model of neo-vascular AMD'	2016
Dr Sinéad Connolly	Research Foundation Clinical Prize	'Developing nanoparticle-based microRNA therapeutics in Sjogren's Syndrome'	2016

Kathryn Walls and Aoife Doyle present Dr Maedbh Rhatigan with the Eithne Walls Memorial Medal

NEW FRONTIERS MEETING IN OPHTHALMOLOGY

Glaucoma Study Day

Thursday 11th June 2015

On Thursday 11th June 2015, the New Frontiers Meeting in Ophthalmology was held in the Education and Conference Centre of the Royal Victoria Eye & Ear Hospital. The meeting was chaired by Ms Aoife Doyle, Consultant Ophthalmic Surgeon at the Royal Victoria Eye & Ear Hospital and devoted to the study of Glaucoma.

Speakers at the New Frontiers Meeting in Ophthalmology 2015 (left-right) Doreen Curran (Novartis), Prof Colm O'Brien, Prof Anthony King, Ms Aoife Doyle, Ms Carol Hoang (Novartis), Mr Jeremy O'Connor

Meeting Programme:

'New Products:
Research & Development Update'
Ms Carol Hoang, Novartis Global Brand Medical Director

'Case Presentations - glaucoma dilemmas'
Dr Sarah Moran, SpR Ophthalmology, Royal Victoria Eye & Ear Hospital
Dr Barry Quill, SpR Ophthalmology, Royal Victoria Eye & Ear Hospital
Dr Najiha Rahman, SHO Ophthalmology, Royal Victoria Eye & Ear Hospital

'Surgery as initial intervention for advanced glaucoma'
Prof Anthony King, Consultant Ophthalmic Surgeon, Honorary Clinical Professor of Ophthalmology, Nottingham University Hospital

'MIGS'
Mr Jeremy O'Connor, Consultant Ophthalmic Surgeon, Royal Victoria Eye & Ear Hospital

'Optic Disc Cupping - a lab perspective'
Prof Colm O'Brien, Consultant Ophthalmic Surgeon, Professor of Ophthalmology, Mater Misericordiae University Hospital

The meeting was sponsored by Novartis Pharmaceuticals. The meeting had an excellent turnout and we received very positive feedback. We would like to thank the speakers Ms Aoife Doyle (Chair), Prof Anthony King, Mr Jeremy O'Connor, Prof Colm O'Brien, Dr Sarah Moran, Dr Barry Quill and Dr Najiha Rahman Novartis for making the meeting such a great success.

Dr Barry Quill, Dr Sarah Moran, Dr Najiha Rahman & Carl Farrelly (Novartis) at the New Frontiers Meeting in Ophthalmology

NEW FRONTIERS MEETING IN OPHTHALMOLOGY

Thursday 9th June 2016

The New Frontiers in Ophthalmology Meeting took place on Thursday 9th June 2016 in the Education & Conference Centre at the Royal Victoria Eye & Ear Hospital. The meeting featured a number of current topics in Ophthalmology including clinical research in inherited retinal conditions, anterior segment disease and macular degeneration and was chaired by Mr Mark Cahill, Director of the Research Foundation and Consultant vitreo-retinal Surgeon at the Royal Victoria Eye & Ear Hospital.

Speakers at the New Frontiers Meeting in Ophthalmology 2016 (Left-right) Dr Sinéad Connolly, Dr Paul Kenna, Mr Mark Cahill (Chair), Dr Sarah Doyle, Dr James Warburton (Novartis) and Oliver McCrohan (Novartis)

Mr Mark Cahill, Chair introduces Dr James Warburton (Novartis)

Meeting Programme:

'Small Molecules with Big Potential - Nanoparticle Approaches in Ophthalmology'
Dr Sinead Connolly, Clinical Educator and Research Fellow, Royal College of Surgeons in Ireland

'Update on Novartis Ophthalmology Pipeline'
Dr James Warburton, Novartis

'Inherited Retinal Degenerations – From Cause to ? Cure'
Dr Paul Kenna, Director of Research, Royal Victoria Eye & Ear Research Foundation

The Potential of Immunotherapy for the Treatment of Neovascular AMD
Dr Sarah Doyle, Assistant Professor in Immunology, Trinity College, Dublin

The afternoon was devoted to the Eithne Walls Research Meeting, at which NCHDs presented their latest research in competition for the Eithne Walls Medal and the Research Foundation Clinical Prize. The meeting was well attended and supported by Novartis Pharmaceuticals.

RESEARCH AWARDS

Dr Ghaleb El-Farouki presents at the Irish College of Ophthalmologists Meeting

Dr Ghaleb El-Farouki whose research is funded by the Research Foundation, was awarded the Irish College of Ophthalmologists/Novartis Eye Research Bursary on 1st October 2015. Dr El-Farouki is conducting research that focuses on novel therapeutic targets for the wet, or neo-vascular, form of Age-related Macular Degeneration (AMD). AMD is the leading cause of central vision loss worldwide and the wet form particularly is a source of significant patient morbidity and clinical and economic burden. The research revolves around the role that inflammation and immunological pathways, particularly those involving the innate immune response, play a role in the development of neo-vascular AMD. Various cytokines (inflammatory mediators) have been implicated in the changes leading to AMD and this project focuses on the most promising targets, including various Interleukins. The research involves evaluating the levels of these cytokines in the peripheral blood and ocular fluid of patients with wet AMD in comparison to others. The team is also performing comparative medical studies at Trinity labs to explore potential therapeutic strategies utilizing these pathways.

Dr Ghaleb El-Farouki (left) and Dr Khalid Kamel (3rd left) are awarded the ICO/Novartis Eye Research Bursary 2015, photographed with Miss Hickey-O'Dwyer, ICO (second left) and Oliver McCrohan, Novartis (right)

Furthermore, Dr El-Farouki is involved in clinical trial activities taking place at the Royal Victoria Eye & Ear Hospital in collaboration with industry partners, including multi-centre phase 3 studies evaluating new treatments for retinal conditions. Dr El-Faourki's research is under the supervision of Mr Mark Cahill, Consultant vitreo-retinal surgeon at the Royal Victoria Eye & Ear Hospital and Dr Sarah Doyle, Assistant Professor in Immunology at the Department of Clinical Medicine, Trinity College Dublin. In addition Dr El-Faouki won the Eithne Walls Memorial Medal on Thursday 9th June 2016 and was awarded a travelling fellowship for his research.

Dr Sinéad Connolly, whose research is also funded by the Research Foundation, was awarded the Irish College of Ophthalmologists/Novartis Eye Research Bursary at the Annual Retinal Meeting in Adare, Co.Limerick on Thursday 29th September 2016. Dr Connolly's research, is focused on developing new therapies for dry eye disease in Sjögren's syndrome, an autoimmune condition characterised by severe dry eye, which is difficult to treat, and causes great distress to patients. Dry eye disease (DED) is a highly prevalent age-related ocular condition. Current therapies, including artificial tears and anti-

inflammatory agents, have been largely inadequate and there is an unmet need for new therapies.

Dr Connolly has developed a nanoparticle to normalise levels of microRNAs- short messengers that can control inflammation. When the nanoparticles are administered to ocular surface cells in the lab, they decrease levels of a microRNA which promotes inflammation, and increases expression of an anti-inflammatory gene. This is a promising new avenue for precision therapy of dry eye in Sjögren's syndrome.

Dr Reinold Goetz (left) and Dr Sinead Connolly (2nd right) photographed with Miss Marie Hickey-Dwyer, ICO (2nd left) and Dr Jennifer Coppins, Medical Advisor, Novartis Ireland (right) at the announcement of the winners of the ICO/ Novartis Eye Research Bursary 2016-17 the Annual Adare Retinal Meeting on the 29th September 2016.

Commenting on the significance of being awarded funding for her project, Dr Connolly said' 'The ICO-Novartis Research Bursary will allow me to validate my initial nanoparticle work. I hope to then move on to explore the role of some of the other microRNAs found to be dysregulated in our cohort of patients with Sjögren's Syndrome. It will also facilitate the running of a research clinic to expand the number of patients and patient samples in our biobank, and promote further high-quality research in an often-overlooked condition'. Dr Connolly's research is being carried out under the supervision of Professor Conor Murphy at the Ocular Immunology Group at the Department of Molecular and Cellular Therapeutics, Royal College of Surgeon's Ireland.

Dr Connolly was shortlisted for the MIT Poster Prize at the ARVO Annual Meeting and awarded the Barbara Knox Medal for best paper presentation at the ICO Annual Meeting in Killarney in May 2016.

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