



breakthrough
CANCER RESEARCH

ANNUAL REPORT 2016



TABLE OF CONTENTS

2016 in Numbers	3
Chairman's Report	4
Chief Executive's Report	6
Areas of Focus	8
Research Programmes	9
Our Research Priorities	10
Pancreatic Research Fellowship Announced	11
Ovarian Research Fellowship Announced	12
Gold Medal at International Synthetic Biology Competition	13
New Clinical Trial Announced for Melanoma Patients	14
Research Partnerships Help Extend Our Reach (MRCG-HRB)	15
Translating Research into Clinical Trials	16
Delivering for Patients	17
Research Infrastructure	18
Building a Cancer Free Future	19
Christmas Gifts from Cork to Honduras	20
2016 Timeline	21
Education & Information	23
Cancer Cookbook launched for Patients with Swallowing Difficulties	24
BEAT Ovarian Cancer Campaign	25
Why 10% Matters	26
Turning It Purple on World Pancreatic Cancer Day	27
Communications	28
Fundraising	29
Total Income in 2016	30
Challenges for Cancer Research	31
Fighting Cancer Together	33
In Good Company	34
Financial Report	36
Governance	37

2016 IN NUMBERS



€930,237
Invested in
Research
to Beat Cancer



3
New Patient
Clinical Trials
Opened



9,000
Cancer Cookbooks
supplied to patients with
swallowing difficulties



3
Cancer Education
Video Campaigns
Launched



1
Gold Medal win
at the iGEM
Competition



2
Research
Fellowships
Announced



Multiple
Patients with Basal
Cell Carcinoma
treated successfully

CHAIRMAN'S REPORT



2016 was a remarkable year for Breakthrough Cancer Research (Breakthrough) in pursuing our goal to discover, develop and advance new treatments for cancer patients and to positively impact cancer care in Ireland.

This past year brought significant new investment in research infrastructure, as well as, the commencement of some new focused research programmes and interventions directed at supporting people with cancer.

Investing in Our Vision

Last year we invested significant funds for future growth, so this year our costs were significantly lower than the previous year. Our total income for the year was €1,361,750, down on the previous year (2015 = €1,595,826) but the amount we were able to invest in Research doubled to €930,237 from €473,850 in 2015.

The funds invested into research were made under three pillars in line with our strategic priorities: Research Programmes (Research Costs), Research Infrastructure (Capital Investment) and Education and Information.

RESEARCH PROGRAMMES

We are proud to announce that in 2016, Breakthrough invested €676,685 into research projects including lab consumables, studentships and equipment, as well as, providing support for clinical trials including nursing care. We also provided funding for new treatments, which have completed trial phases but are not yet government funded, to ensure patients have access to them. This investment is an increase on the previous year (2015 = €434,124) and does not include additional significant expenditure which was made in 2016 for research infrastructure.

RESEARCH INFRASTRUCTURE

One of the main hubs for research funded by Breakthrough is Cork Cancer Research Centre (CCRC). In 2016, we were thrilled to provide €155,000 towards the new research centre and laboratory facilities within the translational health campus in the Western Gateway Building in University College Cork (UCC). €55,000 of this funded new essential equipment such as Tissue Culture Hoods and biological -80°C freezers, with the balance of €100,000 donated towards the €1,000,000 needed to fund the new Centre. CCRC moved to this world-class, tailor-made new facility in the last few days of 2015. The new centre also received government funding through the Programme for Research in Third Level Institutions (PRTL-5).

EDUCATION & INFORMATION

As part of our mission we have been providing evidence-based information to clinicians, patients and members of the public. In the last few years there has been an increased demand for this type of information to support cancer care and cancer prevention. In 2016, €98,552 was invested in our Education and Information Programme, funding materials and media to provide fact-based information to the public and patients on symptoms and signs of cancers, along with cookbooks on nutritional recommendations during cancer treatment. This was a rise on the previous year (2015 = 39,726) and enables us to increase our output of patient resources for cancer awareness and prevention leading to earlier cancer detection and better outcomes for patients.

An Amazing Team

Sincere thanks to our board of directors whose members give their valuable time and expertise at no cost to the charity. The board continued its good governance in 2016. Along with the charity's hard-working team, the board moved to ensure the charity had in place the **Triple Lock** standards set out by the Charity Institute of Ireland – good fundraising, transparent annual financial reporting and governance. You can find more detail on this on page 37.

Between 2015 and 2016, we;

- Signed up to the Statement of Guiding Principles for Fundraising;
- Prepared our audited accounts with reference to the Statement of Recommended Practice (SORP) for charities and;
- Formally adopted and are publicly signed up to the Governance Code for the Community and Voluntary Sector.

I would like to commend Orla Dolan and her tremendous team for their excellent efforts in 2016. The staff in Breakthrough are extremely dedicated and committed to Breakthrough's mission and I wish them well in 2017.

During the past 12 years, I have also worked with CCRC on their Board. As I relinquish this role, I want to thank everyone for their constant support and wish everybody involved in the cancer research carried out at the Centre - from funding partners Breakthrough to the research scientists - every success in the future.

Lastly, I would like to express my sincere gratitude to all our volunteers and supporters. We know that your shared belief in what focused cancer research can accomplish means that, together with our collaborators, colleagues, researchers, board and charity team, we can continue to develop new treatments for cancer and improve quality of life and survival for cancer patients.

Dr. Declan Farrell
Chairman

CHIEF EXECUTIVE'S REPORT

Breakthrough was established with a clear focus: to support the discovery and development of new treatments for the cancers which, as yet, cannot be cured.

In the last 50 years worldwide cancer survival rates have doubled so thankfully there are many cancers today with survival rates over 80%. But not all have seen this improvement and there are still some cancers, often termed **poor prognosis cancers**, which have stubbornly resisted the current approaches available for patients. There are many patients and families who are still relying on research to deliver new treatments and save more lives.

We believe that increased research investment into these cancers will turn this tide and ensure all patients, no matter what their cancer diagnosis, have the hope of a treatment option. By choosing to work hand in hand with doctors and surgeons on the front lines, we know we are pinpointing resources and expertise to the most **challenging cases** and together with our researchers they are **discovering solutions**.

In 2016 we **increased investment into Ovarian and Pancreatic cancers**, through the creation of two new PhD fellowships. These build and expanded on research we had previously funded which showed promising early results for these cancers. Two new researchers came on board and will carry out three year programmes of research, taking previous laboratory based work through more rigorous testing and towards new treatments in the clinic.

We also added our voice to national and international calls for more support for these two cancers through **Education and Information campaigns** to inform patients on signs and symptoms to look for and what to do if concerned. We were proud to work with the National Cancer Control Programme to develop up to date multi-platform tools to inform the public of referral guidelines. For Pancreatic Cancer we joined the international #TurnItPurple campaign and together with other stakeholders such as Ovacare, Emer Casey Foundation, Sock, Marie Keating Foundation, Brid Carr Memorial Fund and Laya Healthcare drove the BEAT ovarian campaign to be seen by over 100,000 women in Ireland.

In 2016 we continued our financial support of ongoing research programmes in Oesophageal, Colorectal, Lung, Leukaemia, Osteosarcoma, Melanoma and Breast cancers to find new treatment approaches to improve quality of life and survival for patients. But we are also working to improve survival in other ways. One such project in 2016 was our funding for the development and supply of a **free resource for patients** experiencing cancer induced weight loss.

In April we worked with Dr. Aoife Ryan to drive the publication and distribution of the *Eating Well with Swallowing Difficulties* Cookbook to Cancer Hospitals throughout the country. There is clear research evidence that involuntary weight loss in cancer patients directly impacts on their tolerance to chemotherapy, radiation therapy, and surgery. In response, this cookbook provides a valuable tool for doctors, patients and their carers helping them maintain good nutrition during treatment and avoid conditions such as sarcopenia and cachexia thereby improving quality of life and survival.



The cornerstone of our vision for cancer research which improves cancer care is that you have **collaboration**; between those who are treating patients and those who have expertise in the laboratory. To underpin this there needs to be structures in place, both actual and virtual, to ensure that collaboration occurs. Only then can we be sure the **patient is at the heart of our research**. CCRC shares our ethos and in 2016 moved into a new centre within a translational health campus, providing space and infrastructure and **reinforcing links between cancer research** in UCC and with the **cancer care hospitals** of the South/South West Hospital Group. State funding provided through PRTL-5 and Breakthrough will provide a total €1 million over the coming years for this essential infrastructure. This new larger centre, provides hot desks for clinical investigators, specific diagnostic suites and 2016 saw Breakthrough deliver the first instalment of our commitment.

In research, progress can often seem slow and when you are trying to save lives you strive every day to get new approaches, new ideas, new techniques to the patients who need them. Understandably rigorous lab work and testing has to happen but after, we can get our most promising new therapies, to the people who need it. Breakthrough is proud to provide support through clinical trial nursing, equipment and research to make new treatments available for patients in Irish hospitals. 2016 saw the exciting culmination of years of research to allow CCRC join with BMS to open a **clinical trial** for patients with **advanced melanoma**. This along with our support of the **Colorectal, Oesophageal and Lung trials** means we support research which is truly having an impact for patients.

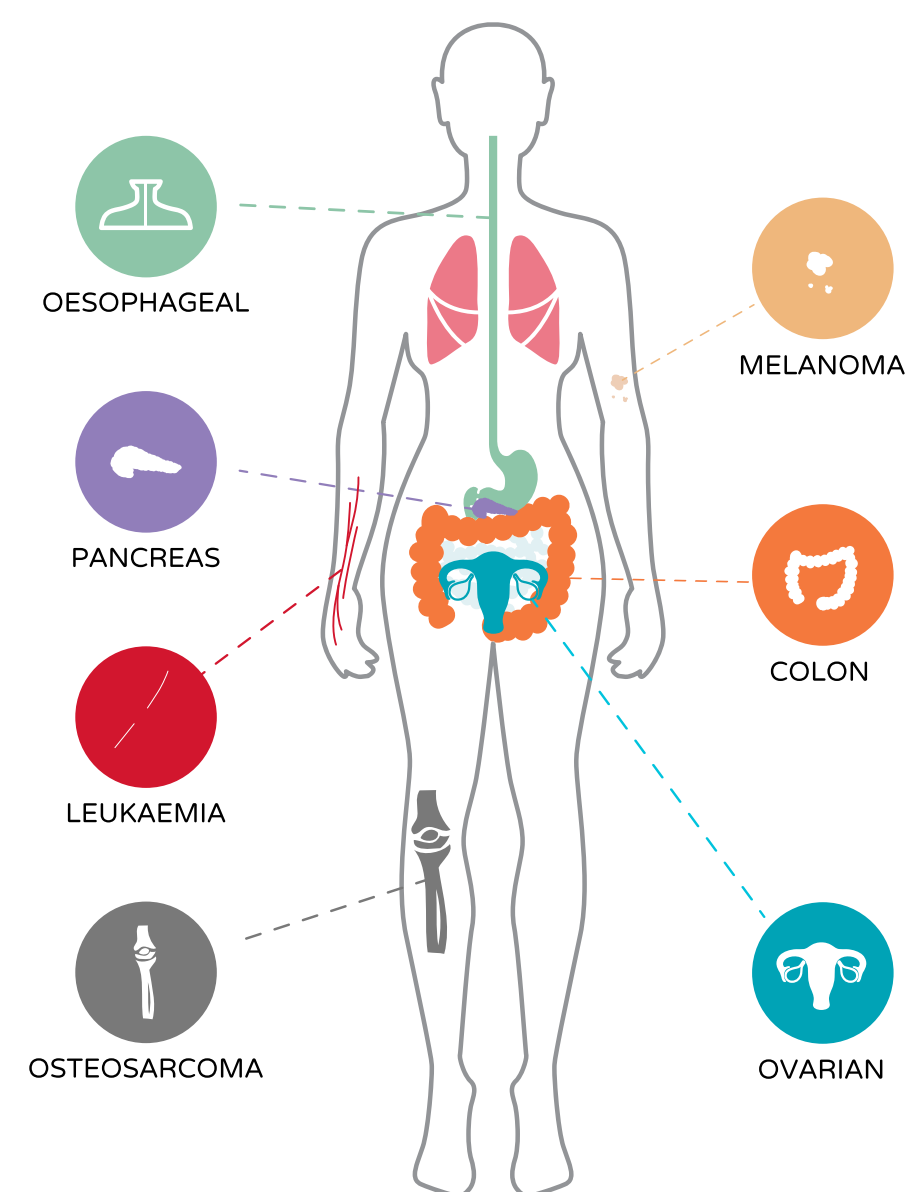
We know that all of **our accomplishments are shared with the amazing individuals and companies who help us raise funds each year**. Together we are able to support patients. Together we are changing cancer care for the better. As we look forward to 2017 we are keenly aware there are still too many families who have been devastated by a cancer diagnosis and we have much left to do. We would like to thank all of our supporters, collaborators, board members and staff who share our passion to make a difference.

Hope is our gift and together we can give it.

Orla Dolan
Chief Executive

AREAS OF FOCUS

Below are some of the areas we focused our research on during 2016. We also continued to fund treatment of Basal Cell Carcinoma leading to multiple patients being treated successfully during 2016.



RESEARCH PROGRAMMES

“I think the laboratory and the clinical experience are very closely intertwined and that makes our research more meaningful.”

OUR RESEARCH PRIORITIES

The patient is at the centre of everything that we do at Breakthrough. Our six research priorities reflect this and show us the path forward to ensuring that our focus remains on improving treatments for the poorest prognosis cancers and improving patient care.

1	2	3
Increase our research investment into poor prognosis cancers and currently incurable cancers prioritising lung, oesophageal, ovarian and pancreatic cancers	Continue to significantly invest in research on the role of the immune system in cancer development and identify opportunities to harness the immune system to control and eradicate metastatic cancers	Improve integration of cancer research into cancer care in Ireland by prioritising funding for projects and infrastructure with significant clinical engagement/input
4	5	6
Continue to discover and develop new therapeutics and surgical approaches/ technologies, including increased investment in biological and immuno-therapies	Continue to fund research, which aims to improve the effectiveness or specificity of current cancer therapies including investing in biomarkers discovery, nutrition and therapeutic delivery	Invest in research-led innovation at every stage of the cancer patient journey from first diagnosis through to treatment, clinical trials and palliative care to improve survival and quality of life

PANCREATIC RESEARCH FELLOWSHIP ANNOUNCED

Achieving Research Priorities: 1, 4, 6

As part of Breakthrough's commitment to increase investment for poor prognosis and underserved cancers, in 2016 we increased our funding for pancreatic cancer research by launching a new research PhD fellowship. The Charlie Fell Pancreatic Fellowship is named after Charlie Fell, the Investment Professional and Irish Times columnist, who sadly passed away in August 2015 after advocating for more research and awareness on this disease in his final months.

In September 2016, Joseph Murphy was appointed to work with our Pancreatic Team to increase the appallingly low survival rates faced by people diagnosed with pancreatic cancer.

"I was thrilled when I heard about the Charlie Fell Research Fellowship, because it's a perfect fit for me," says Joseph. "Pancreatic cancer is precisely what I want to be working on, so I'm delighted to be joining such a renowned research centre to do exactly that." According to his supervisor, Lead Investigator Dr. Patrick Forde, Joseph's primary focus will be working on a collaborative pancreatic cancer research project between CCRC and the University of Rochester in New York.

"Our collaborative partners in the US have developed a new 'modulating' molecule that has the ability to stop pancreatic cancers from suppressing the human immune system," explains Dr. Forde. "Joseph's task is to combine their research with our electroporation expertise and technology, and to develop an exciting new combination therapy. This is a really important step forward in our battle against this killer disease."

We are so thankful to the family of Charlie Fell for fundraising for this important position and to our supporters for helping make this Fellowship a reality.

PANCREAS 496 new cases per year
7th most common cancer
509 patients pass away each year



OVARIAN RESEARCH FELLOWSHIP ANNOUNCED

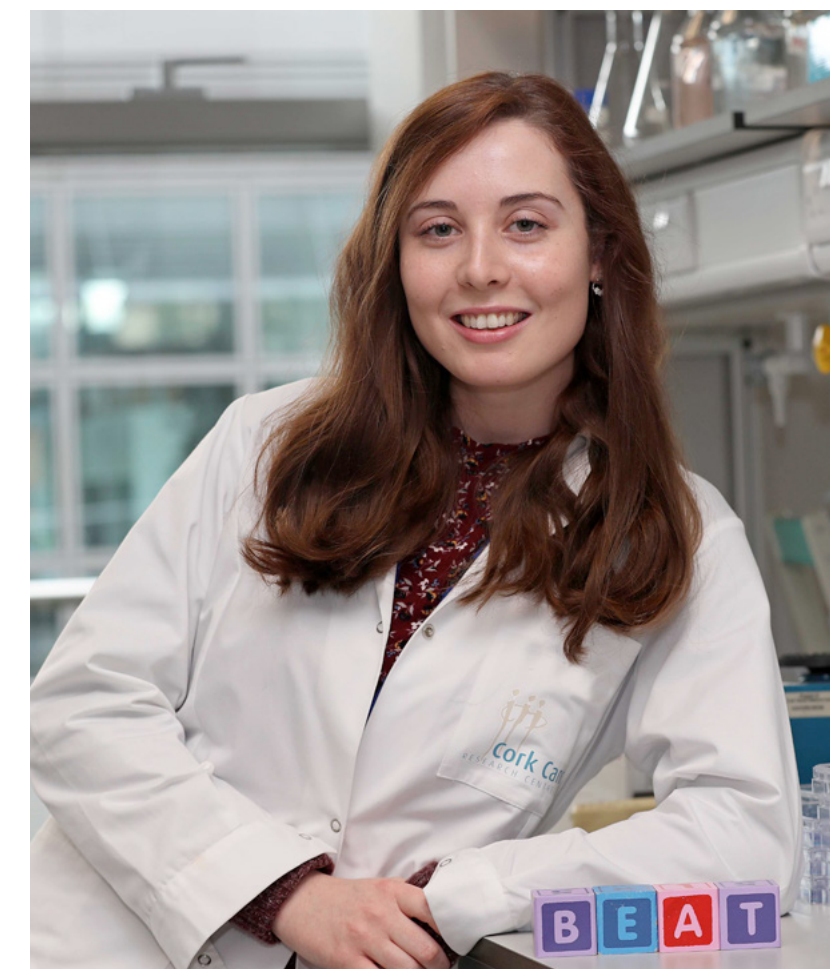
Achieving Research Priorities: 1, 4, 6

Ovarian cancer remains the leading cause of death among gynaecologic malignancies and the fifth leading cause of death among all cancers in women. Although the majority of women exhibit an excellent response to first line chemotherapy, approximately 80% of patients experience disease recurrence, characterised by multiple drug resistance. Due to the poor survival of women with recurrent, chemoresistant ovarian cancer, Breakthrough believe that a greater understanding of the mechanisms which contribute to this resistance is urgently needed. Therefore, in 2016 Breakthrough focused on this issue.

In Summer 2016, Ms. Jennifer Quinn was appointed as an Ovarian Research Fellow. Her role is supported by both the Brid Carr memorial fund and Breakthrough, and was set up to address the lack of awareness of and research into, ovarian cancer in Ireland. The memorial fund was established by the family of Brid Carr, who passed away from ovarian cancer. Jennifer joined the CCRC Autophagy Team, led by Dr Sharon McKenna and is thrilled to be part of our multidisciplinary group trying to tackle this lethal cancer.

Jennifer states, *"My research aims to provide valuable insights into the molecular mechanisms of autophagy in ovarian cancer cells, and provide a new understanding of its potential role in helping these cells to recover following treatment. By learning how to best modulate autophagy, it is hoped to improve patient outcomes via overcoming chemoresistance."*

We are excited to be adding Jennifer's passion for scientific advancement to our team and are very thankful to Brid Carr's family and friends for their vital support for this position.



OVARIAN CANCER 361 new cases per year
6th most common cancer
33% survival rate
266 patients pass away each year

GOLD MEDAL AT INTERNATIONAL SYNTHETIC BIOLOGY COMPETITION

Achieving Research
Priorities: 1, 4, 6

As part of our commitment to research and education in 2016 we were proud to support an Irish University team at the iGEM Competition, the premiere student team competition in Synthetic Biology. iGEM (international Genetically Engineered Machine) encourages students to work together to solve real-world challenges by building genetically engineered biological systems with standard, interchangeable parts. Student teams design, build and test their projects over a summer and gather to present their work and compete at an annual competition.

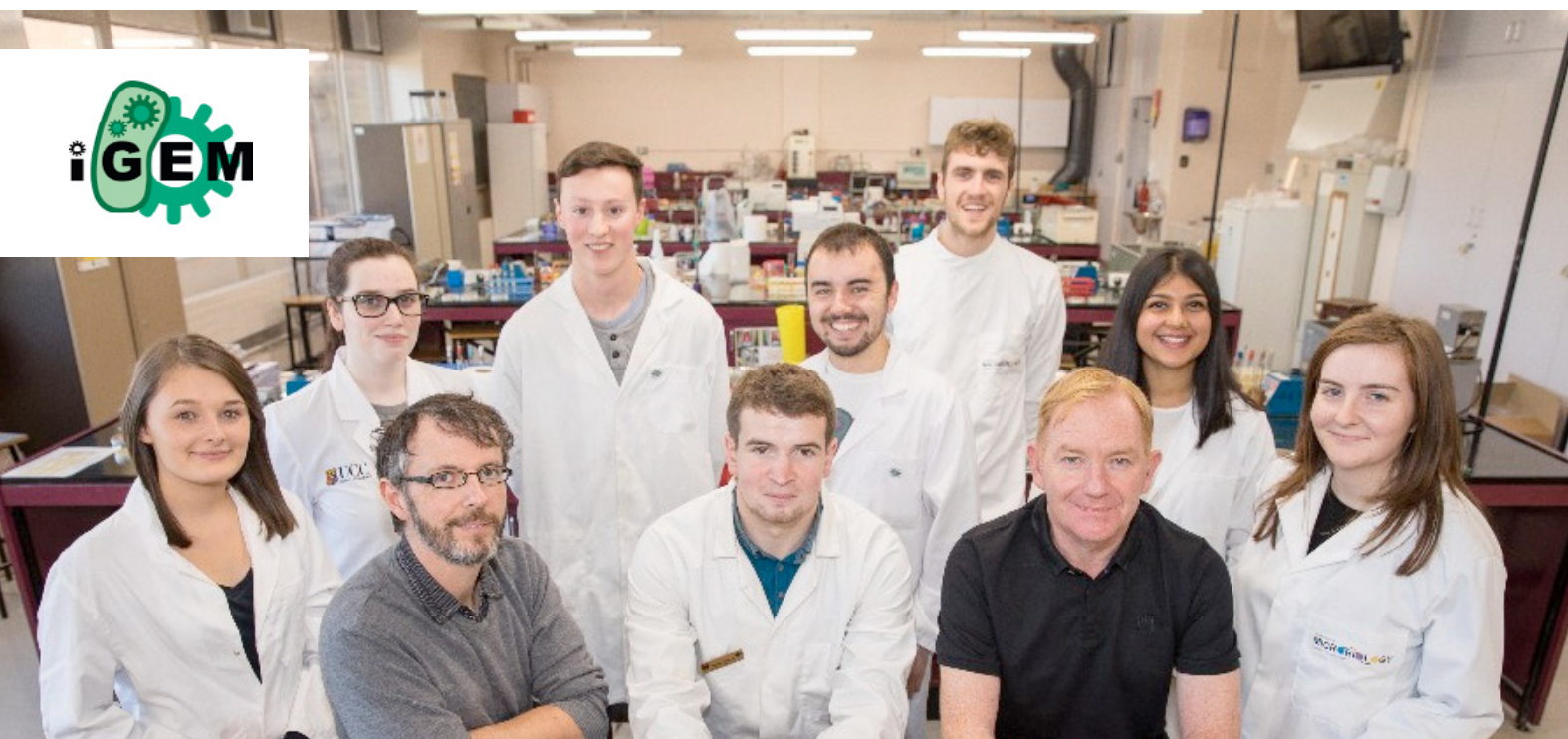
The Breakthrough-supported student team who were hosted between CCRC and the APC Microbiome Institute were called "Limited Lactis" team and scored gold at the prestigious iGEM Jamboree held last year in Boston.

The team, the only Irish entrants in the competition, used a bacterium commonly used in food production, to develop a potential new vaccine against cancer and other diseases.

More than 600 teams from the top universities in the world, including MIT, Harvard, Stanford, Cambridge and Oxford took part in the competition, which is held up as the gold standard for "research-led education".

Speaking about the project Principal investigator, Dr Mark Tangney PhD MBA, states, *"I was blown away with how much was achieved in such a short time by undergraduate students, and how sophisticated the resulting technology is, all due to the enthusiasm of the students and the power of synthetic biology."*

Well Done Team Limited Lactis!



NEW CLINICAL TRIAL ANNOUNCED FOR MELANOMA PATIENTS

Achieving Research
Priorities: 1, 2, 3, 4, 5, 6

Currently melanoma kills 182 people a year in Ireland. As well as more than 10,000 in the US and up to 55,000 worldwide.

For many years Breakthrough has provided funding to deliver a treatment for both malignant and non-malignant skin cancers which is not funded through the HSE. The treatment, which combines the technology of electroporation with low dose chemotherapy, has been shown to be effective in over 85% of patients and is currently in use across Europe.

The team delivering this treatment observed increased immune activity in the areas of treatment application and discovered that a combination of this technology and immunotherapy could be even more effective for the patient and more durable.

This year saw a huge leap forward in moving this idea forward from the lab to reality. Our team opened a new Clinical trial for patients with advanced melanoma in December. They teamed up with Bristol-Myers Squibb to roll out a clinical trial to tackle hard to treat malignant melanomas. Electrochemotherapy involves delivering short bursts of electricity directly to a tumour, making it highly porous and able to absorb chemotherapy drugs. So porous that much smaller amounts of chemo are required. However, some malignant tumours are able to 'cloak' themselves from the immune system, and can sometimes cling on, survive and return. In response to this Bristol-Myers Squibb developed a drug called Ipilimumab, which can 'un-cloak' the tumour, making it easier for the immune system to finish it off. Our new trial combines both electrochemotherapy and Ipilimumab into one knockout treatment.

Our Clinical investigator on the project, Dr. Derek Power says: *"Overcoming immune 'cloaking' of the tumour has become the key to making immune therapy work for patients. We are already seeing good immune responses from electrochemotherapy and with the addition of Ipilimumab we are excited to see the results from this enhanced treatment for patients."*

MELANOMA

913 new cases per year
3rd most common cancer
86% survival rate
182 patients pass away each year



RESEARCH PARTNERSHIPS HELP EXTEND OUR REACH

Achieving Research
Priorities: 1, 4

Breakthrough is proud to be a member of the Medical Research Charities Group (MRCG), an umbrella group of medical research charities that seeks to generate dynamic health research in Ireland. The MRCG believe that patient organisations should lead and stimulate research driven by patient need.

Since 2006, the MRCG and Health Research Board (HRB) have operated a joint funding scheme based on the dedicated allocation of funding to the HRB by the Department of Health for this purpose. The MRCG/HRB Joint Funding Scheme is an innovative scheme whereby charity-led research is supported by the HRB through the co-funding of research projects. The scheme provides MRCG charity members with the opportunity to support high quality research projects that match their strategic aims and directly address the needs of specific patient communities.

In 2016, we were delighted to submit projects for the first time for match funding of 50% through this scheme. Dr. Mark Tangney's project, Bacteria in Human Tumours, designed to improve our understanding of the host - tumour- microbiome ecosystem, with a view to understanding the impact of bacteria both positive and negative on cancer treatment and outcomes, was successful and was awarded funding through the joint scheme.

In November, Venkata Vamsi Bharadwaj Yallapragada commenced this three year research project.



HOW IT WORKS



TRANSLATING RESEARCH INTO CLINICAL TRIALS

The good news in 2016 was that we had 4 new therapies and another 5 moving into patient trials in 2017! It is essential for Breakthrough that we can see the impact our research makes on the lives of patients. This is never more evident than during clinical trials. Because of your support we are translating life science breakthroughs into life-saving treatments and providing vital support for patients during those trials.

ALREADY IN PATIENT TRIALS:

1. **COLORECTAL:** Endoscopic Electroporation for Colorectal Cancer
2. **ALL CANCERS:** Orally administered bacterial delivery trial for solid tumours
3. **MELANOMA:** ElectroChemotherapy & Ipilimumab trial for Melanoma
4. **OESOPHAGEAL CANCER:** Endoscopic Electroporation for Oesophageal Cancer

PRE-TRIAL TESTING:

1. **OVARIAN CANCER:** Autophagy and Chemo-resistance in Ovarian Cancer
2. **OESOPHAGEAL CANCER:** Chemotherapy Combination of 5FU and Lithium
3. **PANCREATIC CANCER:** ElectroChemotherapy & CCR2 Blockade trial
4. **LEUKAEMIA:** Autophagy in differentiation in Leukaemia
5. **ALL CANCERS:** Influence of tumour microbiota on cancer therapy

DELIVERING FOR PATIENTS

Clinical Trial Nurse

Part of providing support for patients during clinical trials is ensuring we have a nurse to guide patients through the trial who act as the human link between the research in the labs and our treatment in the hospital.



During 2016, we funded Clinical Trial Nurse, Alison Bracken. Alison talks about the importance of her work.

"Patients come into my clinic like it's the last chance saloon. And frequently that's exactly what it is. Because often they've been sent to us because all the conventional treatments have either failed, or because their cancer is too advanced for surgery or treatment"

"After I tell them about the research and the success rates for treatment, you should see the light come on in their eyes - the spark of realisation, that actually, they may not have reached the end of the road after all. That is real hope"

RESEARCH INFRASTRUCTURE

"Hope Lives Here"

BUILDING A CANCER FREE FUTURE

Achieving Research
Priorities: 3

One of our key priorities is improving integration of cancer research into cancer care by funding infrastructure which creates and reinforces communication and research links between clinicians and researchers. Therefore in 2016, we were delighted to see CCRC move into a new purpose-built centre, part funded by Breakthrough. The new lab is equipped with cutting-edge equipment which will enable researchers to deliver results faster and accelerate new cancer treatments to trial and beyond.

Dr Garrett Casey, Laboratory Manager, organised the move, ensuring that every piece of equipment in the new centre was running smoothly, and that researchers had all the tools they needed to continue testing new and innovative cancer treatments.

"We definitely have a lot more space. In the old building you had all the equipment in one main lab, which made it difficult. If you wanted to do an experiment, you could have to wait to take out the equipment until another one was finished and packed away. Now we have a main lab and smaller labs off it. Each of these smaller labs are designated for FACS analysis, cellular and in vivo imaging, molecular diagnostics and tissues culture etc. So we have designated areas within the unit, which has made things more streamlined and more productive."

Being more productive means researchers will be able to work quicker and more efficiently. This will allow them to bring new and potentially lifesaving treatments to clinical trial faster.



CHRISTMAS GIFTS FROM CORK TO HONDURAS

As the year came to an end, scientists at CCRC, with the help of Fyffes, gifted research equipment to a university in Honduras enabling students in the Central American country to access molecular biology research techniques. The equipment and books became available due to the move of the research centre into its new lab and the relinquishing of older tools and apparatus for more modern equipment. It was wonderful to know it was going to good use.

The donation of equipment and books arrived at the Biology and Microbiology laboratories at Universidad Nacional Autonoma De Honduras (UNAH), the only public university in the Central American country, in December 2016.

The donation was the idea of Yensi Flores, a graduate of Unah and a scientist at the CCRC, who, as part of her thesis, established the first molecular biology lab in the university.

Yensi states, *"In Honduras, the lack of infrastructure severely limits research and the pursuit of careers in science. When we were updating our research equipment at CCRC, rather than throw out the current equipment, my colleagues and I contacted the Vice-President of Unah to offer it to the university laboratory. Fyffes, very kindly agreed to donate the transport of this equipment, from Cork, Ireland to Tegucigalpa, Honduras, free of charge. As scientists ourselves, it is our wish that this donation will help science students realise their passion for research and pursue a science career, as we have been lucky enough to do. We are lucky to have fantastic support from Breakthrough and members of the public and businesses in Ireland so it is great that their support continues through the gifting of equipment to help future cancer researchers in other countries."*



2016 TIMELINE

FEBRUARY

SUPPORTED IACR CONFERENCE
Irish Association of
Cancer Research

MARCH

INTERNATIONAL WOMEN'S DAY
Celebrated Women in Science
Highlighting all-female Autophagy team

APRIL

9,000 CANCER COOKBOOKS
supplied to cancer patients
with swallowing difficulties

AUGUST

BEAT OVARIAN
CANCER CAMPAIGN

JULY

BRID CARR OVARIAN
RESEARCH FELLOWSHIP
COMMENCED

JUNE

LEUKAEMIA STUDY MOVES TO
US RESEARCH PHASE
(WEILL CORNELL MEDICAL COLLEGE)

MAY

OBESITY &
CANCER CAMPAIGN

SEPTEMBER

CHARLIE FELL FELLOWSHIP
in Pancreatic
Cancer commences.

COLORECTAL PHASE
1 STUDY CONCLUDED

OCTOBER

OESOPHAGEAL CLINICAL
TRIAL OPENED

1 GOLD MEDAL
win at iGEM competition

NOVEMBER

FIRST GRANT AWARD
through MRCG-HRB Joint Funding Scheme

#TURN IT PURPLE CAMPAIGN FOR
PANCREATIC CANCER

DECEMBER

NEW TRIAL FOR ADVANCED
MELANOMA OPENS

EDUCATION & INFORMATION

“We will not become emotionally removed from those afflicted by cancer. We will ensure it is the patients and families who will benefit from our research endeavours.”

CANCER COOKBOOK LAUNCHED FOR PATIENTS WITH SWALLOWING DIFFICULTIES

Achieving Research Priorities: **3, 5, 6**

In 2014 we were proud to be part of the team that brought the award winning and evidence based ‘Good Nutrition for Cancer Recovery’ cookbook to over 19,000 patients throughout Ireland free of charge. This past year the same team of oncologists, dieticians and chefs based in UCC and Cork Institute of Technology (CIT), developed a more specialised cookbook for those cancer patients also experiencing chewing or swallowing difficulties. The new book, which was made available to all Irish cancer hospitals, entitled ‘Eating Well with Swallowing Difficulties in Cancer,’ is available free of charge to cancer patients throughout Ireland at www.breakthroughcancerresearch.ie. It contains over 60 recipes.

One of our strategic priorities is to help patients with cancer by finding ways to make current treatments more effective for patients and also looking to innovate at all points in the patient journey. Difficulties chewing and swallowing food affect many cancer patients suffering from cancer of the mouth, throat, neck, oesophagus, and stomach and eating frequently becomes an enormous challenge for these patients. Critically, weight loss during a cancer patient’s treatment can not only have a serious negative impact on their quality of life, but directly impacts on their tolerance to chemotherapy, radiation therapy, and surgery.

By providing support for these initiatives and interventions we are able to support patients currently in cancer treatment with a view to improving both their quality of life and their survival. As well as recipes, the cookbook also provides information on:

- DYSPHAGIA
- MODIFIED TEXTURE DIETS
- EATING WITH AN OESOPHAGEAL STENT
- ADVICE FOR CAREGIVERS
- FOOD SAFETY
- ADDITIONAL PROBLEMS AFFECTING EATING SUCH AS: SORE MOUTH, DRY MOUTH, CHEWING DIFFICULTIES, TASTE AND SMELLING DIFFICULTIES, POOR APPETITE, NAUSEA AND VOMITING



BEAT OVARIAN CANCER CAMPAIGN



On page 15, we introduced you to Jennifer, our new Brid Carr Ovarian Research Fellow and talked about the importance of continued research into this 'silent' disease. As part of our commitment to tackling ovarian cancer, 2016 saw Breakthrough work with the National Cancer Control Programme (NCCP) to raise awareness of the disease.

In conjunction with OvaCare, Emer Casey Foundation and SOCK, we launched the BEAT Ovarian Cancer Campaign, to highlight the key signs of the disease in the run up to World Ovarian Cancer Day on 8th May.

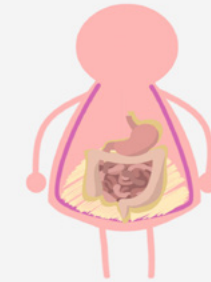
The BEAT Ovarian Cancer Campaign informed women across Ireland to know that they can BEAT Ovarian Cancer by knowing their bodies, knowing the signs and getting help at an early stage if they have any of the following signs for 3 weeks or more:

- **Bloating that is persistent and doesn't come and go**
- **Eating less and feeling full more quickly**
- **Abdominal and pelvic pain you feel most days**
- **Talk to your GP about your symptoms**

The campaign, which featured a short animated video voiced by Miriam O'Callaghan, generated a lot of positive feedback from women across Ireland with a reach of over 99,800 on Facebook, 48,500 impressions on Twitter and over 10,000 video views on YouTube. The video can be viewed on the Breakthrough YouTube channel.

WHY 10% MATTERS

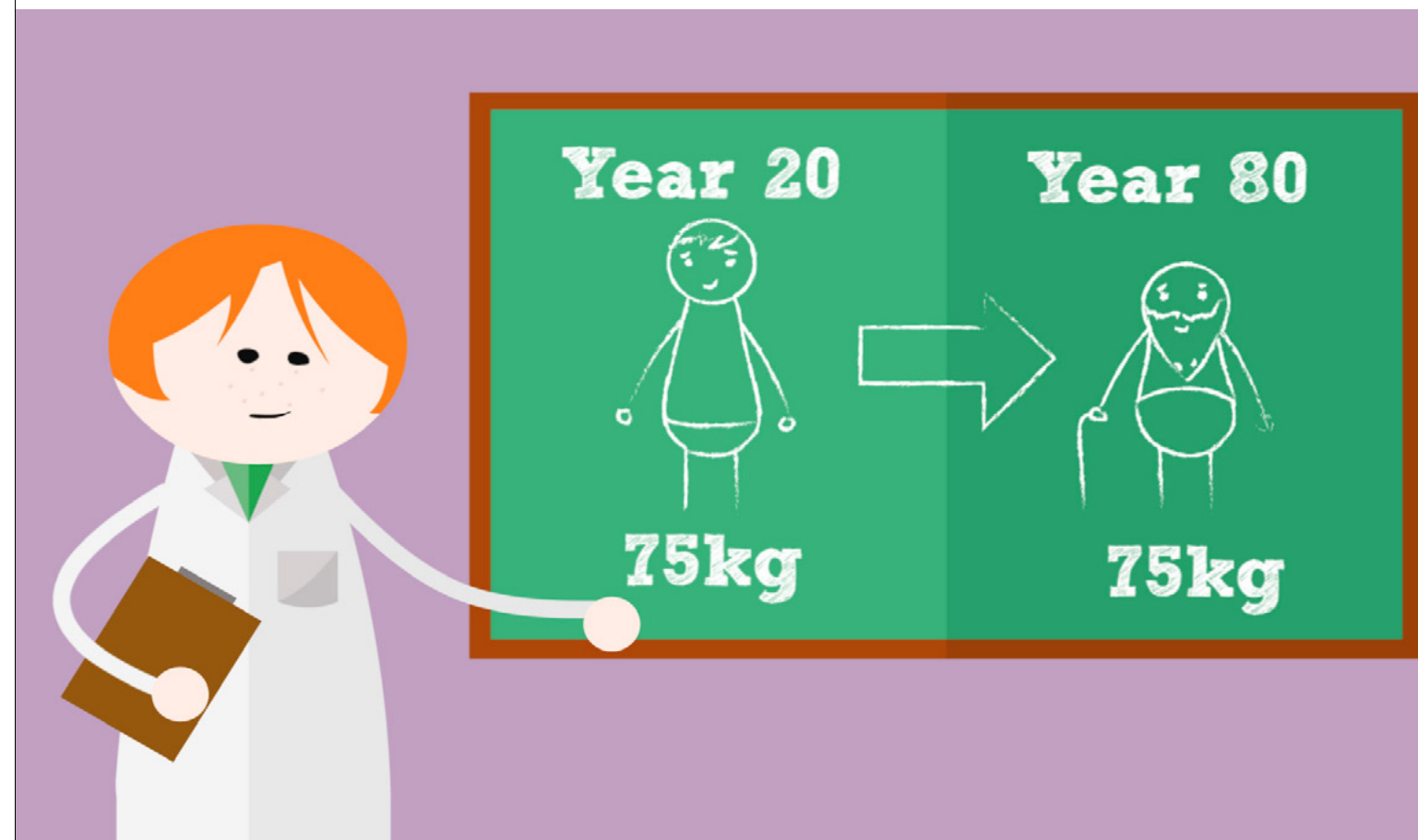
July saw the launch of our campaign to highlight research-based information about the link between fat and cancer. With over 36,000 people diagnosed with cancer each year in Ireland, the campaign aimed to help people make informed choices for themselves and their families.



Being overweight and inactive accounts for up to a third of worldwide cases of colon, kidney, oesophageal, breast and endometrial cancer, according to the International Agency for Research on Cancer, World Health Organisation, 2013. A large proportion of cancers are entirely preventable by appropriate food, nutrition, physical activity and body fat, according to the World Cancer Research Fund (WCRF). Our campaign aimed to communicate this information to the public so they could take action.

Dr Aoife Ryan, Dietitian and Lecturer in Nutritional Sciences in UCC and collaborator on the campaign highlighted, that we can take action to change things, *"The good news is that visceral fat responds to exercise and diet, with benefits ranging from lower blood pressure to more favourable cholesterol levels. Even a 10% weight loss can immediately decrease the hormone levels from visceral fat. It takes a short time for visceral fat to be reduced by simple diet and lifestyle changes."*

As part of the campaign, Breakthrough produced a How Fat Causes Cancer video with support from Laya Healthcare with voice over by Matt Cooper, which can be viewed on our YouTube channel.



TURNING IT PURPLE ON WORLD PANCREATIC CANCER DAY

In November, Breakthrough, UCC and CCRC were the only Irish Organisations represented in the #TurnItPurple Campaign for World Pancreatic Cancer Day, a worldwide campaign to raise awareness of one of the deadliest cancers. Pancreatic cancer has a five year survival rate which remains in single digits.

Across the globe landmark buildings were lit up for the day and in UCC the famous ‘Quad’ was bathed in purple light for the occasion. Our scientists wore purple which was especially fitting as they form the epicentre of pancreatic cancer research in Ireland.

Breakthrough supports both research and education linked to pancreatic cancer. Dr. Patrick Forde, was the first researcher in Ireland to be awarded funding from the UK’s Pancreatic Cancer Research Fund, and in 2016 Breakthrough funded the new Charlie Fell Pancreatic Fellowship, mentioned in more detail on page 11. We have also worked with Dr. Aoife Ryan from UCC to develop a free e-cookbook to support Pancreatic cancer patients experiencing cancer induced weight loss - again strengthening our commitment to research and education in pancreatic cancer.



COMMUNICATIONS



13
EZINES



4
SUPPORTER
APPEALS



2
SUPPORTER
NEWSLETTERS



Facebook
17, 688 Likes



Twitter
2,062 Followers



LinkedIn
120 Followers

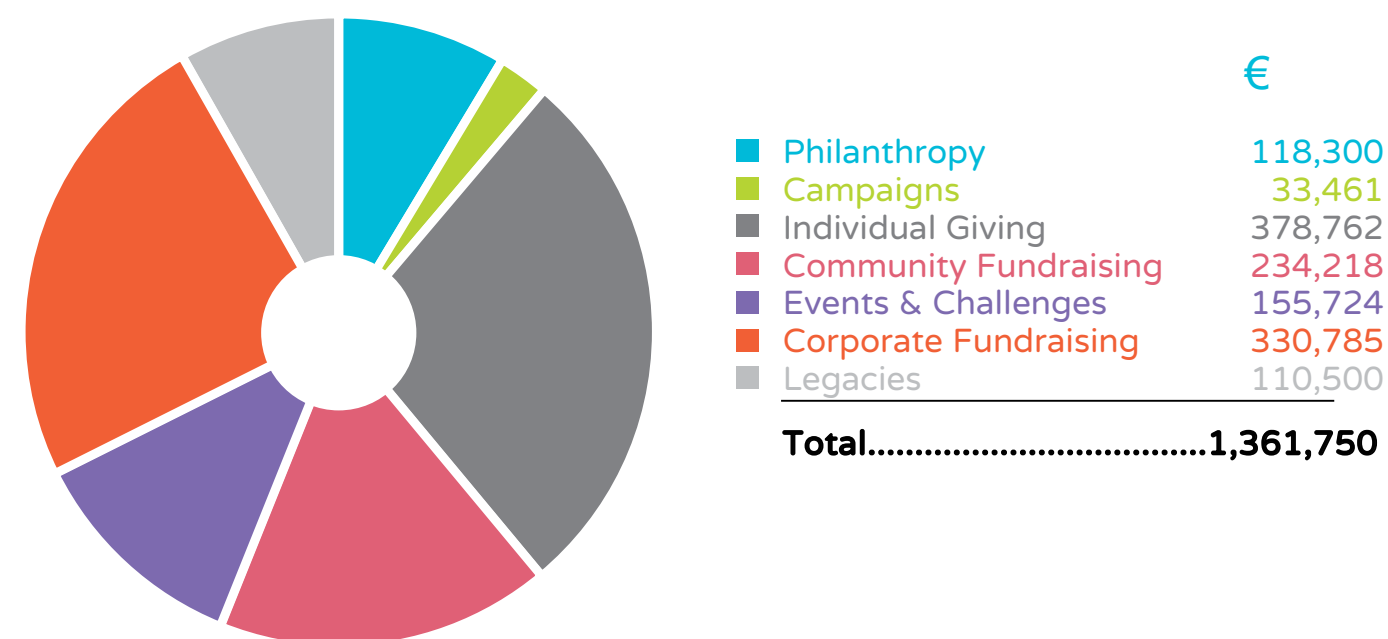
FUNDRAISING

*“Hope is our gift,
together we can give it”*

TOTAL INCOME IN 2016

We couldn't fund life saving cancer research without your support.

The Breakthrough community support us in many different ways from coffee mornings, fashion shows, corporate sailing challenges to cycles and triathlons. This support ensures that we can continue to fight cancer. A breakdown of our funding is below.



CHALLENGES FOR CANCER RESEARCH



FIGHTING CANCER TOGETHER

WOMEN'S LITTLE CHRISTMAS AFTERNOON TEA & FASHION SHOWCASE

Over 150 ladies were treated to the perfect gift at Breakthrough's Women's Little Christmas Afternoon Tea and Fashion Showcase. The event, in its 5th year, took place on Sunday, 3 January 2016 in the luxurious surroundings of the Fota Island Resort.



VALENTINE'S BALL

Luminaries from across the Cork medical, scientific, academic, business and political worlds, including Minister Simon Coveney, gathered on Saturday 13 February to support cancer research at the Breakthrough Valentine's Ball at the Radisson Blu Hotel and Spa, Cork.



LEE GOLF VALLEY CLASSIC

Golfers teed off for the 6th Lee Valley Golf Classic in aid of Breakthrough on 27 May. The classic took place at the Valley Golf & Country Club, and was sponsored by the River Lee Hotel. Raising more than €12,000 this event is a key date each year.



CORPORATE QUIZ

Journalist Jonathan Healy took on the role of Quiz Master, putting Cork businesses to the ultimate test at our Corporate Quiz on 9 November. It was a battle of the brightest from across the business world at the Radisson Blu Hotel & Spa, Little Island, Cork with Perpetual Spinach Company winning the Dermot Desmond Trophy.

IN GOOD COMPANY

We are lucky to have so many great partnerships. Here are just some of the tremendous organisations we worked within 2016 and some of our many fundraising events on page 35.



MUSGRAVES TRIATHLON



VOXPRO



CORKS 96FM RADIOTHON



CORK JAZZ FESTIVAL CHARITY PARTNER



CYCLE WITH CIARA



MUNSTER RUGBY LUNCH



GAA LADIES CAMOGIE FINALS



RUN WITH RED FM

FINANCIAL REPORT

Lee Valley Golf
 ● Classic
 Lapping the
 Lough Lixnaw
 Vintage Club Run
 🐎 Malin to Mizen
 Melanoma SOS
 🏈 Munster Rugby
 Musgrave Triathlon
 Muskerry Hunt
 Powering Kindness
 Queen of the Seas
 Rathmore Walk Ray
 Noone Cycle Ring of
 Kerry Charity Cycle
 Ring of Kerry Hunt
 Run with Red
 🏃
 Vintage Run 🚗
 Castletownsend to
 Skibbereen Walk
 Christmas Lights CIT
 Cancer Society Cork's
 96FM Cork's Mini 🏃
 Marathon Cork2Galway
 Courtmac Coffee Morning
 Cycle with Ciara Drive For
 Dads Eamonn Mac 🚴
 Memorial Cycle Easter
 Chickens Endurance
 Challenge 2068km Fight
 for the Girls Fiona Turley
 Christmas Cards Giving For
 Living Jagged Edge Tour
 Josie Reddington Foundation
 Kerry Way Walk
 KiteFest

AIB Sports & Social 🏏
 Annual
 O'Carroll's Cove
 Events Ballinscarthy
 Malin to Mizen
 Cycle 🚴 🚴 🚴
 Bantry 'Bring & Buy'
 BCR Corporate
 Quiz Bengour
 Threshing 🚚
 🚴 Biomarin Cycle
 Blackwater 10 🏃
 Brave Men Walking Brid
 Carr Events London &
 Donegal C2C Caheragh
 Threshing Castleisland
 Sisters
 Wish
 Sponsor A
 Sneem Cycle Scientist
 Sunshine and Umbrellas
 Tir Chonaill Gaels Cycle Trip of
 Hope UCC Cancer Society
 Valentine's Ball 🚤 VoxPro Try
 Sailing West Coast Vintage
 Women on the Water
 Women's Little Christmas 🌲

EITHNE O'LEARY
FINANCE MANAGER



GOVERNANCE

Breakthrough is fully committed to openness, transparency and integrity to our donors, supporters, volunteers and funding partners by adhering rigorously to the Triple Lock standards set out by the Charity Institute of Ireland - good fundraising, transparent annual financial reporting and governance.

For more information on our Governance go to www.breakthroughcancerresearch.ie.

Our Board of Directors is made up of independent individuals with diverse backgrounds who volunteer their time, expertise and passion to our vision. The Board provides the advisory and governance role for the charity. We do not pay members of our Board, cover their expenses or provide recompense in other anyway.

1. Good Fundraising : Commitment to Standards in Fundraising Practice

The Board of Breakthrough has formally adopted, is signed up to and is fully committed to achieving the standards contained within the Statement of Guiding Principles for Fundraising.

The Statement exists to:

- Improve fundraising practice
- Promote high levels of accountability and transparency by organisations fundraising from the public
- Provide clarity and assurances to donors and prospective donors about the organisations they support.

We, Breakthrough, have considered the Statement and believe we meet the standards it sets out.

2. Annual Financial Reporting : Statement of Recommended Practice (SORP)

Breakthrough's annual accounts are independently audited every year by Moore Stephens. We prepare our accounts in accordance with Irish accounting standards and with reference to the Statement of Recommended Practice (SORP) for charities.

This is a comprehensive framework that enables us to explain what we aim to do, how we go about it and what we achieve. You can download and view our most recent audited accounts at www.breakthroughcancerresearch.ie

3. Governance : Governance Code for the Community and Voluntary Sector

The Board of Breakthrough has formally adopted and is publicly signed up to the Governance Code for the Community and Voluntary Sector.

FINANCIAL REPORT

Statement of Financial Activities (Including Income & Expenditure Account) for year ended 31st December 2016

Funding is received from:
100% Fundraising

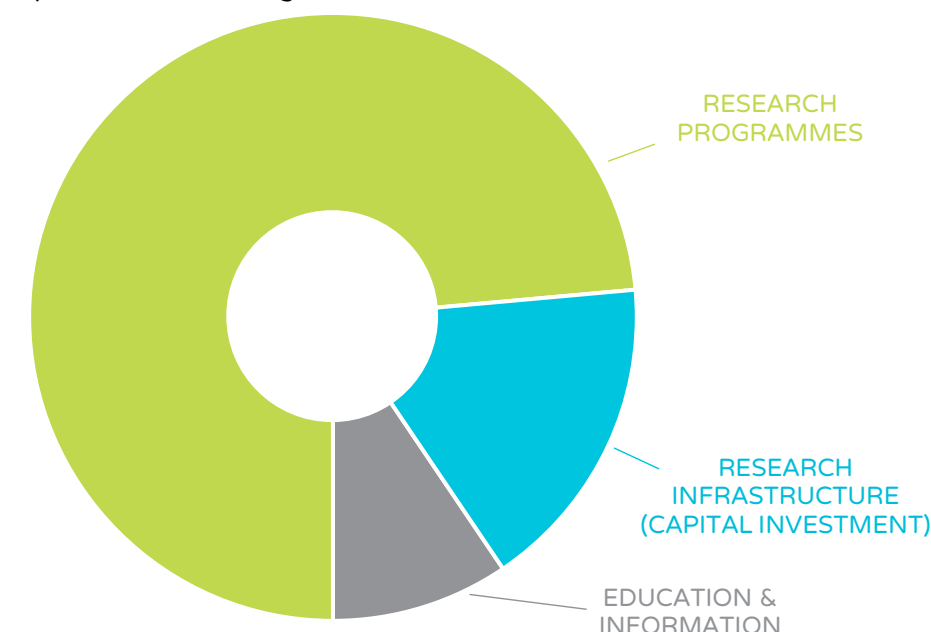
The investments made into the three priorities for the organisation in terms of research expenditure were:

Research Infrastructure (Capital Investment):
€155,000 (2015 - €Nil)

Education & Information:
€98,552 (2015 - €39,726)

Research Programmes:
€676,685 (2015 - €434,124)

Total - €930,237



The figures presented represent the financial year 1 January, 2016 to 31 December 2016. The gross income was €1,361,750 (2015: €1,595,826).

(A company limited by guarantee, not having a share capital)

STATEMENT OF FINANCIAL ACTIVITIES

(Incorporating an Income and Expenditure Account)

for the year ended 31 December 2016

	Unrestricted Funds 2016 €	Restricted Funds 2016 €	Total 2016 €	Total 2015 €
Income from:				
Legacies	110,500		110,500	111,794
Charitable Activities ¹	1,204,583	46,667	1,251,250	1,484,032
Total Income	1,315,083	46,667	1,361,750	1,595,826
Expenditure on:				
Raising Funds	424,246	-	424,246	726,990
Charitable Activities ²	174,364	-	174,364	316,424
Research	780,361	149,876	930,237	473,850
Total Resources expended:	1,378,971	149,876	1,528,847	1,517,264
Deficit for the year	(63,888)	(103,209)	(167,097)	78,562
Net movement in funds for the year	(63,888)	(103,209)	(167,097)	78,562
Reconciliation of funds				
Balances at the beginning of the year	83,610	239,741	323,351	244,789
Balances at the end of the year	19,722	136,532	156,254	323,351

The statement of financial activities includes all gains and losses recognised in the year. All Income and expenditure derive from continuing operations.

¹ Income from charitable activities outlined on Page 30

² Expenditure includes support, governance and sundry overheads

(A company limited by guarantee, not having a share capital)

BALANCE SHEET

as at 31 December 2016

	2016 €	2016 €
Fixed Assets		
Tangible Assets	3,473	5,210
	3,473	5,210
Current Assets		
Debtors	60,791	122,914
Cash at bank and in hand	502,057	375,663
	562,848	498,577
Creditors: Amounts falling due within one year	(410,067)	(180,436)
Net Current Assets	152,781	318,141
Total Assets less Current Liabilities	156,254	323,351
Funds		
Restricted Funds	136,532	239,741
Unrestricted Funds	19,722	83,610
Total Funds	156,254	323,351

COMMENTARY

Breakthrough Cancer Research is pleased to confirm to our members that the accounts have been prepared in accordance with the statement of recommended practice (Charities SORP in accordance with FRS 102, effective January 2015). This reporting structure is accepted as best practice in the charity sector. Also, this is reflective on Breakthrough Cancer Research's on-going commitment to good governance and financial transparency.

The reserves for the year are €156,254 (2015: €323,351). Breakthrough Cancer Research remains in a position to support existing research projects, and to continue to fund research programmes in 2017.

The statement of Financial Activities and Balance Sheet included on page 39 and 40 respectively are an extract from the full statutory financial statements of the company for the year ended 31st December 2016, which are available on our website, www.breakthroughcancerresearch.ie

Bankers:

AIB Bank plc.
College Road
Cork

Auditors:

Moore Stephens
Chartered Accountants &
Statutory Audit Firm
83 South Mall
Cork

Solicitors:

Ronan Daly Jermyn
2 Park Place
City Gate Park
Mahon Point
Co Cork

Our Board of Directors are:

- Dr. Declan Farrell - Chairman and board member since 2011
- Mr. Bryan Mohally - board member since 2011
- Prof. Brendan Buckley - board member since 2011
- Mrs. Breda O'Sullivan - board member since 2012
- Dr. Derek Power - board member since 2016
- Mr. Sean Ryan - board member since 2016



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LoCall 1890 998 998

Website: www.breakthroughcancerresearch.ie

Email: info@breakthroughcancerresearch.ie

Charity No: CHY 19801
