

## “CANCER EATING” VIRUSES ON THE WAY, THANKS TO VISIONARIES LIKE YOU!

Why would anyone infect a cancer patient with a virus? The answer lies in a long known effect in medicine, and in recent developments in genetic research.

For years, cancer doctors have observed that patients who naturally became infected with certain types of virus frequently experienced an improvement in their disease.

It was subsequently proven that some viruses can infect and destroy cancer cells. A great

outcome if the virus itself does not harm the patient. Now, geneticists have taken existing viruses and genetically manipulated them so that they are highly destructive to cancers, but harmless to people. Furthermore, these viruses have been engineered to boost the patient's

own immune system to fight cancer even more effectively.

Dr. Mark Tangney's team have been working with a laboratory in Canada which is a world-leader in the study of 'Oncolytic' (cancer-eating) viruses as medicines. Our collaboration is already yielding really exciting results, and we are now developing a virus with improved cancer killing power.

**Thanks to your support, we are now at the forefront of international efforts to bring such treatments into use. And we'll keep you informed of any developments.**

*“Many of the mutations that cause normal cells to become cancerous, also weaken their ability to fight viral infections.”* Dr Mark Tangney

## New State-of-the-Art cancer research lab in the pipeline...

- Cutting-edge research facility
- €1.3 million needed for ground-breaking project

Fantastic news. Our scientists are now getting ready to move into an amazing new lab in the Western Gateway Building in UCC Cork. To find better treatments and cures for cancer faster, we need to stay at the top of our game. The new lab will hold more advanced equipment that will ultimately mean getting new treatments to cancer patients sooner. And as you know, time

is of the essence when lives are at stake. In the new building our scientists will have access to other health based research groups which will open new doors and a new way of thinking about cancer research. We now need to raise €1.3 million to finish construction and fully equip the lab.



Dr. Patrick Forde and Dr. Rebecca Gardiner visiting the new building under construction

We will keep you informed of how construction of this new facility is developing and ways in which you will be able to make a lasting contribution to its success.

## YOUR GIFTS AT WORK...

In many ways, the single most important story we can tell you, is the one about how every single gift you send us goes to work.

That's because it's vital to us that you know every Euro you send does what you want it to do – help save lives by finding new cures and treatments for cancer.

When we receive a gift from you, the very first thing we do is take 85% of it and place it in our research fund. So 85c in every single Euro you send us goes directly into our breakthrough cancer research projects, without delay.

The rest is used to promote Breakthrough Cancer Research to new supporters like you, to attract large corporate donors, and to keep Breakthrough Cancer Research running as an effective and efficient research facility.

Put another way... 100% of your money works extremely hard to bring forward the revolutionary new cures and treatments people need to fight cancer, survive cancer and thrive after cancer.

**Thank you so much for everything you do.**



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### SOME FINANCIAL FACTS ABOUT BREAKTHROUGH CANCER RESEARCH

**We receive NO guaranteed state funding**

**We provide NO payments to state hospitals or their employees.**

**We provide NO payments to independent hospitals or their employees.**

**All consultant doctors working on our research projects do so voluntarily.**

**Our accounts are audited annually by Moore Stephens Chartered Accountants.**

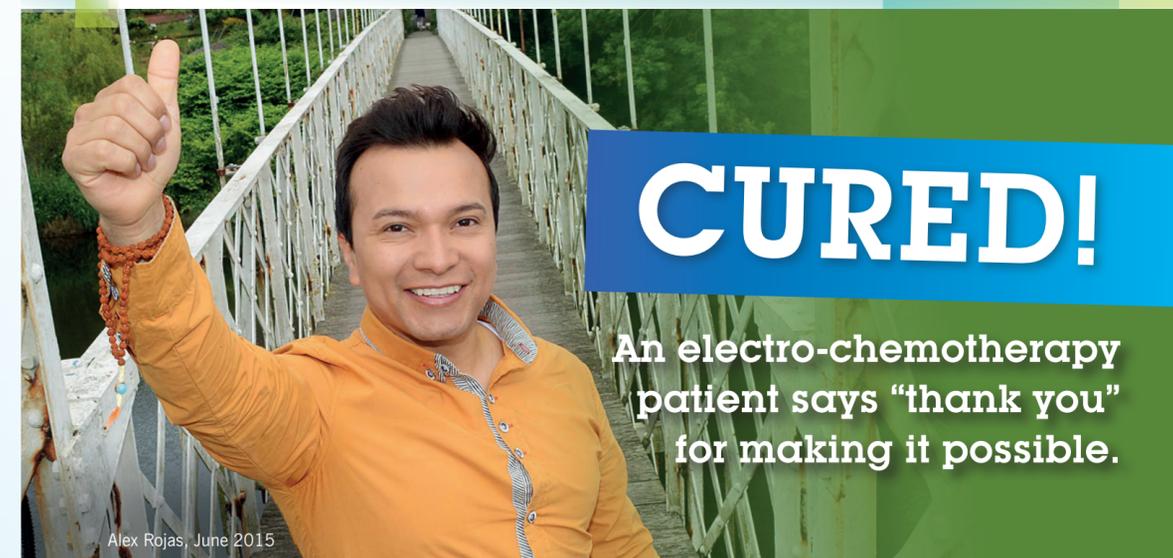
**Our most recent report and accounts are available on our website.**

## Breakthrough



How you're changing the face of cancer research

Autumn 2015



Alex Rojas, June 2015

# CURED!

**An electro-chemotherapy patient says “thank you” for making it possible.**

How your support for our electroporation research has given 38 year-old Alex the non-invasive skin cancer cure he was praying for.

Colombian born Alex has been living in Ireland since 2010. First in Belfast and then in Cork. Shortly after moving to live in Belfast, he was diagnosed with testicular carcinoma and had an operation to remove the cancer.

All seemed well, but about two years later, the cancer came back in his left leg.

“My oncologist said I should have chemotherapy and radiotherapy, but knowing

all the side effects, I really did not want to do this. I knew there were other ways” says Alex.

By now however, Alex was living in Cork, and his dermatologist referred him to Dr James Clover at Mercy University Hospital, who has been using our electro-chemotherapy technology to treat people with skin cancers since it was developed by Dr. Soden's team.

Intrigued by this new possible option, Alex called his oncologist in Belfast.

“Electro-chemotherapy was not available there” he told us. “I was surprised because Belfast City Hospital is one of the biggest cancer research centres in UK.”

After meeting Dr. Clover and having the whole background behind the electroporation research explained to him, as well as a full explanation of how the procedure would work, Alex knew he'd found the alternative to traditional chemotherapy he'd been praying for.

*please continue...*

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## BREAKING NEWS



Dr. Declan Soden, delighted with "very significant breakthrough".

### First patient results to lung cancer trial.

Thanks to your wonderful support, our Thora-ve Probe has just entered live patient trials.

You may remember us telling you, over the last year, about the remarkable Thora-ve probe developed by Breakthrough Cancer Research.

Already successfully trialled and proven to improve treatment for skin cancer, this remarkable technology has been reengineered to treat lung cancers.

Last autumn, thousands of visionary supporters like you helped us raise more than €156,000 to commence live patient trials, and so you'll be delighted to hear that the initial results are excellent.

"We've treated our first patient, which has only been possible thanks to the support we've received over the last few months," says Dr. Declan Soden. "Our patient has responded very well and we're excited about offering this new treatment option to more patients over the coming months. It truly is a very significant breakthrough."

**Our thanks go out to all the wonderful people who have supported this trial. With your ongoing help, we can save so many lives. Thank you so much!**

Continued from page 1...

"I didn't hesitate to go through with the procedure," he says. "I had it done in one day. It took a couple of hours and the recovery was three or four days. Normal cancer procedures are very slow, so you have to wait to see the signs of healing, but with the electro-chemotherapy, it was right away. The healing process was so quick and there were no side effects at all."

As a nutritionist, Alex had a good understanding of how traditional chemo can affect a person long after the treatment itself. Many patients suffer life-long side effects including organ, bone and nerve damage.

But with our electroporation device, small doses of chemo are delivered directly into tumours like Alex's. Tiny electric shocks from the probe make the tumours thousands of times more porous, so they readily absorb the chemotherapy drugs. Almost like a series of deadly direct hits that kill the tumour from the inside out, without affecting other parts of the body at all.

"I was so happy that the procedure was direct into the tumours in the skin," says Alex. "It did not affect any other organs in my body and I haven't had any other symptoms since then."

**"The procedure only took a couple of hours. There were no side effects. And I haven't had any symptoms since."**

Here at Breakthrough Cancer Research, we see innovative new treatments like this as the way of the future. Faster. More effective. Minimal side effects. That's our philosophy. And its success is all down to the vision and belief of generous people like you. You are responsible for Alex's cure. And he is as profoundly grateful for that as we are for your support.

"I am so pleased," says Alex. "It was a clear and quick procedure, and it came along at the right time in my life. I want to say thank you to the electro-chemotherapy team at Breakthrough Cancer Research, and to all the people who supported this work. I hope for you that to see someone healthy and smiling and living a healthy life, is a good repayment for your support. Thank you so much."

It's now been three years since Alex's treatment, and there have been no signs of the cancer coming back.

**Soon, with your support, we will begin trialling this treatment in combination with immunotherapy. We promise to keep you updated.**

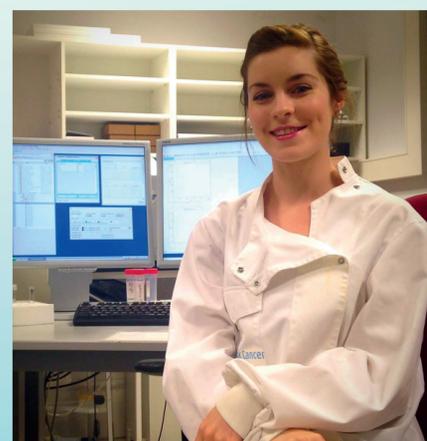
## INTERVIEW WITH A RESEARCHER

### "It's really exciting doing work where I can actually watch cancer cells dying."

We hope you enjoy this special Q&A session with one of our researchers, Chloe Falvey, who graduated from UCC with a BSc. in Biochemistry.

**BCR: So Chloe, tell us a little about yourself, and the work you're doing at Breakthrough Cancer Research...**

Chloe: Well, I first visited Cork Cancer Research Centre as an undergraduate summer student three years ago. I loved the enthusiasm of the research teams here that I felt I couldn't do my PhD anywhere else. I'm now part of the Autophagy Team.



Chloe Falvey, who's benefiting from your support for our Sponsor a Scientist campaign.

**BCR: Autophagy sounds like one of those quite complicated medical terms, could you give us a rough idea what it means?**

Chloe: It's actually not as complicated as it sounds. Autophagy is a normal process that all cells use to stay alive. All cells undergo autophagy and it's perfectly healthy. However, cancer cells have mutated to have enhanced survival abilities. This means that when we try to kill a

tumour with chemotherapy, the cells will use autophagy to survive the toxic effects of the drug and the cancer can regrow. We call this "drug resistance".

**BCR: So your research is focusing on finding a way to overcome that?**

Chloe: Exactly. My research focuses on looking at genes that make a cancer respond well or poorly to chemotherapy. This information can be used in a number of ways. Firstly, it can help us in the lab to design a new, better drug treatment. Secondly, it can help doctors to identify the best type of drug treatment for a patient without wasting precious time.

**BCR: Is there a particular reason you wanted to focus on this particular area?**

Chloe: Absolutely. The main reason is the poor prognosis of oesophageal cancer. It's actually one of the hardest cancers to treat in the world, with a survival rate of only 15%. That's partially because it's usually very far advanced before it's diagnosed, and also because it's very resistant to chemotherapy. If we can overcome that resistance, we'll turn the tables on one of the hardest cancers to treat, and save thousands of peoples' lives.

**"Thank you for Sponsoring a Scientist!"** Chloe

## SPONSOR A SCIENTIST, SAVE LIVES

### HAVE YOU "SPONSORED A SCIENTIST" YET?

- Research 'on hold'
- Supporters rise to the challenge

If there's one thing guaranteed to break the hearts of our research scientists, it's when a research project is put on hold.

We work every day to come up with new ideas, exciting discoveries, and new methods of curing and treating cancer. And because of the modern techniques at our disposal these days, we know just how close we are. So when funding gets shut off, it truly is heartbreaking.

On the other hand, a guaranteed funding stream not only prevents

that from happening, it can also help us to fast-track the most promising and exciting projects.

And that's why we've launched "Sponsor a Scientist". This revolutionary approach will bring researchers and their funders – that's you – much closer together than ever before. And will also provide a guaranteed, ongoing, long-term stream of funding. All for a regular gift of just €8 a month.

So, if you haven't already Sponsored a Scientist, you

can grab the opportunity to do so today by calling 1890 998 998 to request a "Sponsor a Scientist" form, or you can tick the box on your form enclosed.

**Thank you so much!**



**BCR: Is there a specific project you're working on right now?**

Chloe: Yes, my project is focused on looking both for genes that are highly resistant to chemotherapy, and those that are highly susceptible to it. Then, by comparing the differences, we hope to find the ones that control the autophagy process. We've already found a host of genes that do this, and one in particular, which I'm really excited about being a candidate for a new treatment.

**BCR: How far away from developing a new potential treatment, and what would make the biggest difference to the process?**

Chloe: We are very close. But research is expensive and time consuming. However, the more money we can raise to fund it, the faster we can get it from the bench to the bedside. It really is that simple.

**BCR: Do you have a message for the people who send in gifts to support your work?**

Chloe: Yes, definitely. I want to say a huge thank you to everybody for raising so much money. Without your support, we wouldn't be able to do any of the lifesaving work we do here.

**Thank you so much!**