



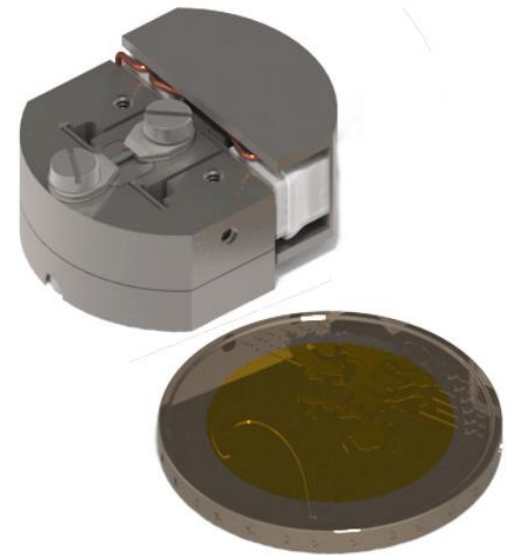
# RAZORBILL

## INSTRUMENTS

### The rocky road from researcher to entrepreneur

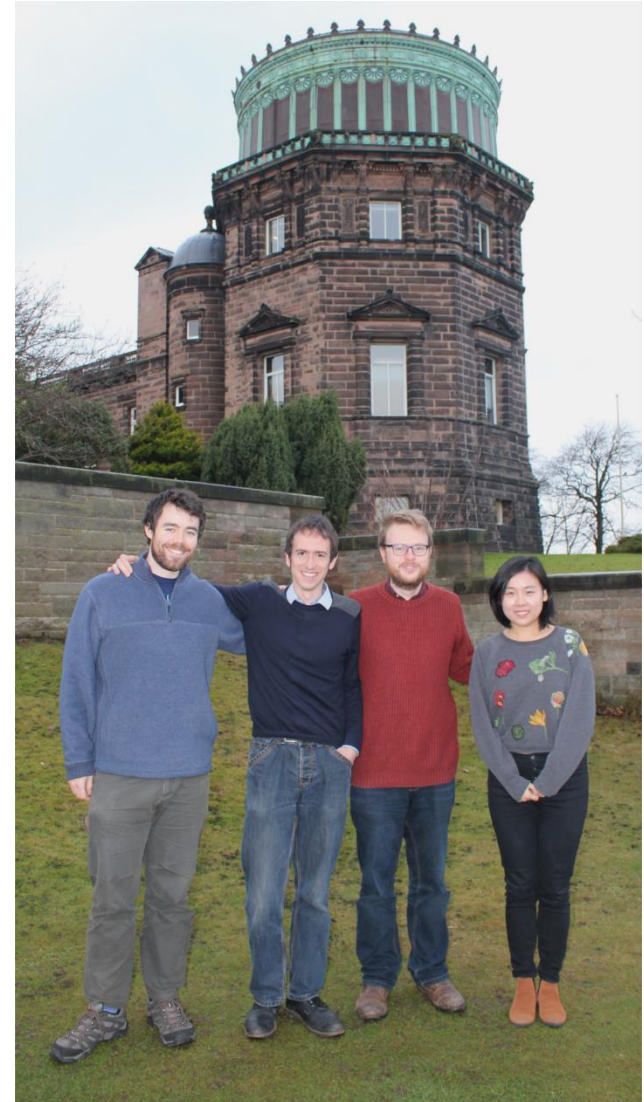
ALEX WARD (MANAGING DIRECTOR)

Day of Science and Careers Scotland 2017  
5<sup>th</sup> April 2016



# WHAT THIS TALK IS ABOUT

- Introduction to starting a company as a researcher
- My background
- What happened
- What I learned
- What should you do to get started?



# SCIENTISTS & START-UPS

## Why does it happen?

- ‘Unique’ academic culture
- Technical expertise
- Proximity to innovation

## Motivation

- Want to be ‘your own boss’
- Want to see your science through to product
- Have a great idea
- Want to make £££!?
- Get invited to free lunches



Draw a Scientist Study. Chambers (1983)



# MY BACKGROUND



2006-2010

Chemistry MSci (Imperial College)

2010-2014

Physics PhD (St Andrews)

*"Using time-resolved fluorescence to investigate exciton harvesting in organic photovoltaic blends"*

**Clifford  
Hicks**



**Jack  
Barraclough**



2014-2015

RSE Enterprise Fellow

# WHAT HAPPENED NEXT?

Sept 2014	RSE Enterprise Fellowship started
Jan 2015	Long negotiations with the University ended
Jan 2015	Secured funding for the development project
Sept 2015	Technical problems starting to mount up
On-going	Efforts being made to overcome but other projects prioritised

## So what went wrong...

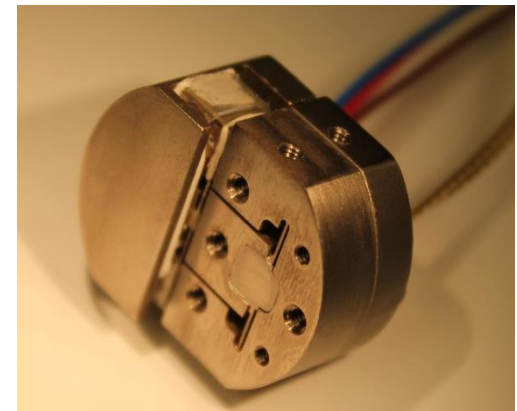
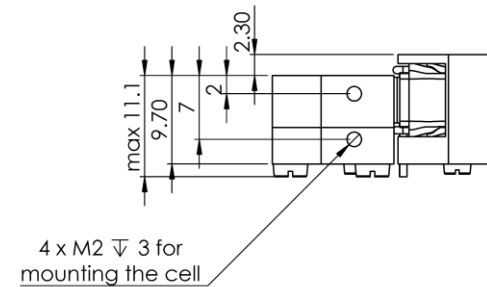
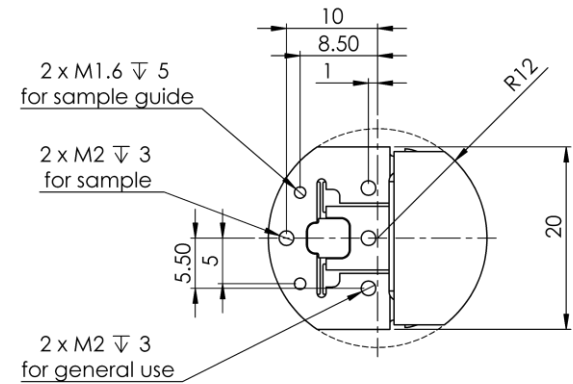
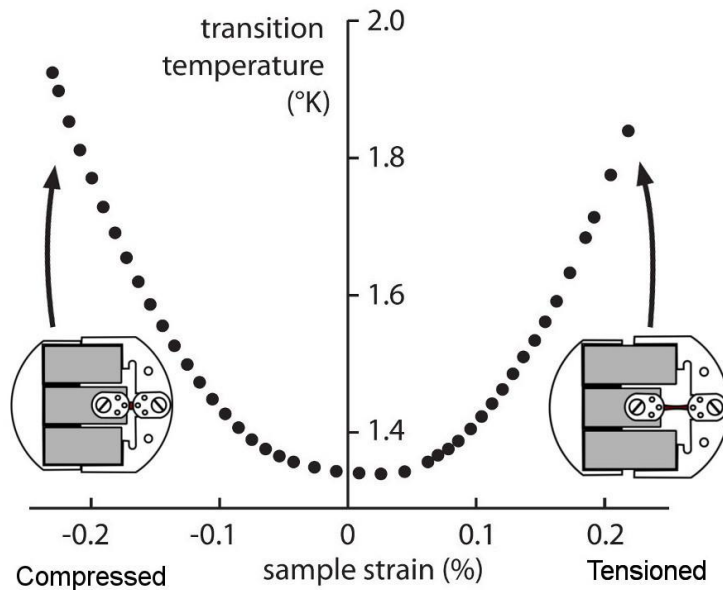
- Our technology was very early
- Making stuff is hard
- Lacking specialist knowledge

## ... and right?

- Developed know-how
- Got us grants & publicity
- Learning exercise
- Noticed issues early

# MINIMUM VIABLE PRODUCT?

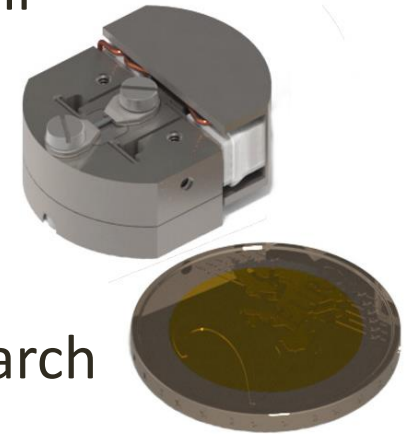
- 'Simple' piezoelectric technology?
- Cryogenic research market?
- Strain 'tuning' becoming fashionable in some research areas...



# CRYOGENIC STRAIN CELL



- Shifted focus in September 2015 to the strain cell
- Finished design and datasheets by November
- Got 10 pre-orders by December/January
- Built prototype by February – works fine
- Delays push shipping date back to the end of March
- First production batch in March fails QA



**First products  
shipped mid April!**



# WHAT TO DO WITH A TECHNOLOGY YOU WANT TO COMMERCIALISE

- Find out where you stand
- Be critical
- Develop a strategy
- Seed funding?
- Ask for advice
- TEAM



What problem does it solve?  
How expensive is this problem?  
How many people?

Own funds (or the 3 F's)  
Grant funding  
Angel investors



# SUPPORT FOR **START-UPS** & **SPIN-OUTS**



## RSE Enterprise fellowship

- A years wages
- Office space
- £10K spending money and a lot of great training

## SMART Proof of concept

- Pay 70% of a development project with up to £130K
- Need to have match funding in place

**Converge  
Challenge**

Creating Entrepreneurs

## Converge Challenge

- First place: £35k cash
- Access to branding, lawyers and accountants

# MY EXPERIENCE?

- Really rewarding job
- So far not *too* much proper hardship
- A huge amount of freedom & self determination
- Psychologically tough when things go wrong (they will)
- At this stage I can't imagine doing anything else!

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