

Celebrating

**WOMEN IN
INNOVATION**

Knowledge Transfer Network

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INNOVATION**

INNOVATE UK

Innovate UK drives productivity and economic growth by supporting businesses to develop and realise the potential of new ideas.

We connect businesses to the partners, customers and investors that can help them turn ideas into commercially successful products and services and business growth.

We fund business and research collaborations to accelerate innovation and drive business investment into R&D. Our support is available to businesses across all economic sectors, value chains and UK regions.

Innovate UK is part of UK Research and Innovation.



WOMEN IN INNOVATION

The programme

At Innovate UK, we know that the most disruptive innovation can only occur when a diverse group of ideas and minds come together.

The recent Rose review estimated that up to £250 billion of new value could be added to the UK economy if women started and scaled new businesses at the same rate as UK men. But, in 2016 we found that just 1 in 7 applications for our funding were led by women, despite the fact that success rates between men and women were largely equal. To encourage more diversity in innovation, we launched our first Women in Innovation campaign with a simple aim: to get more women innovating in business.

The campaign kicked off with research, commissioned by Innovate UK and conducted by media consultancy firm Ebiquity, to better understand the specific challenges affecting women in innovation in the UK. We found that access to funding and finance was the biggest challenge, and a third of respondents felt their gender negatively impacted their career. Other important issues flagged were lack of visible role models, the importance of access to the right networks and the value of mentors.

In 2016, we launched the first Women in Innovation competition and awarded 15 of the most innovative female-led businesses £50,000 funding and tailored business support. In addition to this, we provided a further 16 award holders

with business support opportunities. To continue the momentum, we ran a second Women in Innovation competition in 2018, offering £50,000 funding, mentoring and business support to nine female entrepreneurs tackling society's biggest challenges: clean growth, the future of mobility, an ageing society, and AI and the data driven economy.

Lack of relatable role models was another important issue flagged in the Ebiquity report. The Women in Innovation campaign has created a new group of relatable role models and used the stories of the incredible women we are working with to inspire others. In 2017, we partnered with Getty Images to capture stereotype-shattering images of the 2016 award holders, which were displayed in a central London gallery and added to Getty's online image library.

To enable women-led businesses to connect with new global partners and learn more about innovation overseas, Innovate UK have worked closely with international partners and the Enterprise Europe Network to deliver two Global Business Innovation Programmes to Boston and Israel.

To encourage more women to take the plunge into business innovation, we want to better champion and promote outstanding women innovators who are set to change the world. Currently, women feature on just 14% of the

900 blue plaques in London, with a similar story elsewhere. To celebrate the achievement of the 2019 Women in Innovation Award winners, and to inspire future generations of innovators, we installed plaques at schools across the UK.

The Women in Innovation campaign has led to a 70% uplift in females registering for Innovate UK support, but we need to go further.

Alongside the Knowledge Transfer Network, and with support from Enterprise Europe Network, we have held six Building Success events designed to provide inspiration, practical advice and tools, and highlight opportunities for innovation support for the 500+ female entrepreneurs across the UK who attended. In 2019, we launched an online Women in Innovation community on the WorldLabs platform, to foster networks in the UK and overseas further, and also provide key advice and support, and introduced the Building Success webinar series, sharing knowledge and advice to over 650 viewers to date.

Innovate UK is also working with the UK Business Angels Association to build a strong and more gender diverse investment ecosystem in the UK.

Innovate UK is committed to helping more women achieve their potential and we are excited about the future of our Women in Innovation programme.



70% uplift in females
registering for
Innovate UK support



£1.2m funding support
awarded through
Women in Innovation
competitions



Up to £250 billion*
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UK economy if women
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INTRODUCING OUR WOMEN IN INNOVATION AWARD HOLDERS

It's my pleasure to introduce the Innovate UK's Women in Innovation Award winners from 2016 and 2019. The Women in Innovation campaign has been hugely successful in reaching a more diverse audience – providing funding and support to help more women achieve their business ambitions.

Diversity in businesses is a proven driver of economic growth. Through the Women in Innovation programme I have been pleased to see how Innovate UK's support has enabled winners to embrace innovation, expand and refine global product ranges, and continue to grow and develop their own diverse teams.

Over the following pages we celebrate the women that are leading the way in fostering innovations to tackle some of the biggest societal challenges we face today. It's great to see our Women in Innovation programme uncovering so many inspirational role models for our next generation of innovators, strengthening the UK as a world leader in innovation.

IAN CAMPBELL

Interim Executive Chair, Innovate UK



2016

Christine Boyle
Pauline Dawes
Beth Dawson
Elena Dieckmann
Fanzi Down
Jo Evershed
Virginia Gardiner
Dr Mary Gillie
Diane Gilpin
Lucy Gower
Lorin Gresser
Dr Carmen Hijosa
Anna Hill
Gabriella Isas
Dr Shakardokht Shakar Jafari
Kym Jarvis
Carolyn Pearson
Dr Becky Sage
Gabriella Santosa
Rebecca Street
Sarah Ward



“I won’t make the celebrations today as I will be participating in an Innovate UK Brokerage Mission to Cape Town and Johannesburg, hoping to develop partners to commercialise the Senergy technology on a global scale. Be sure to celebrate in style!”

CHRISTINE BOYLE

CEO of Senergy

With a background spanning almost 20 years in the commercial roofing industry, Christine Boyle, CEO of Senergy, realised that there was huge untapped potential for the collection of solar heat energy on large roof constructions. By combining her roofing expertise with that of global leading engineers from Queens and Ulster Universities, Christine developed the Senergy roof panels.

Unlike current solar thermal panels that are made from glass, copper and aluminium, Senergy panels are manufactured using advanced nanocomposite plastics and can be manufactured and installed at a 50% lower cost with a significantly greater collection capability than existing metallic solar collectors.

Solar Thermal is a renewable energy that captures three to four times more energy per square metre than Solar Photovoltaics PV (generating electricity). It produces the lowest carbon emissions of all renewable energy sources and is easily generated on-site, requiring no expensive grid. However, to date, solar thermal energy collection systems made from glass copper and

aluminium have been expensive and there have also been challenges around the architecture and integration with the building envelope.

The Senergy Solar Thermal Panels are designed to integrate easily with the architecture of buildings and are embedded with low-cost sensor and information technologies that integrate with the digital architecture. This complete integrated solution allows Senergy Thermal panels to deliver the next generation of reliable, affordable and emission-free solar water heating and cooling.

Christine has been honoured as one of the 15 winners of Innovate UK's 2016 Women in Innovation Awards. The programme was for her "An opportunity to build a business based on innovative technology alongside the building of my business network and my business acumen". "Opportunities with KTN, EEN and Innovate UK ensured that I was connected with the technical expertise of leading-edge academics to accelerate the technical development of the nanocomposite solar panels, which led to £1 million of seed investment for the business."

"It is great to be bringing to market an innovative technology that will deliver such a positive impact", she admits. Making heating smart, modern, clean and performant is instrumental for global decarbonisation. Not only will the Senergy technology boost productivity of the renewable energy and construction sectors, the business will also deliver better outcomes for society, the environment and the economy by creating local jobs and economic activity in manufacturing heartlands.

They are currently working on their early customer projects demonstrating direct comparison with incumbent heating systems and proving the commercial viability of the Senergy Solar Thermal Panels. With a market now driven by energy-efficient building codes and Government policy, the global sales opportunity will be enormous. Senergy are excited to be presenting a solar off-grid thermal heating solution that will build resilience against future climate impacts and the threat of unreliable supply and fuel poverty.



“The award was life-changing both personally and for my business. Women need extra exposure because of the unconscious prejudices of both men and women especially in heavy transport and in engineering”.

PAULINE DAWES

CEO and Founder of SOMI Trailers

After leaving school at 15, Pauline went on to study at the University of Cambridge and graduated with an MBA. Following her studies, she began working in transport and engineering. Here, she quickly climbed to the top of this male-dominated sector. As Managing Director of SOMI Trailers, Pauline has drawn on her 10 years of professional experience to inform her innovation.

From an idea born stuck in traffic on the motorway, SOMI trailers are now available for trials in the UK. Occupying the space under the trailer, accessed through the rear doors, SOMI trailers are double-deckers but only 4m high. Built-in conjunction with Paneltex and Tinsley Bridge Engineering, this innovative solution may save the cost of one in four trips, increase capacity at peak times and offer flexibility in use that no other trailer can, using patented technology and following years of research and development.

Since winning the Women in Innovation Award in 2016, SOMI Trailers have received international interest from Europe, China and have exhibited in the USA. Highlights include being asked to speak at the Atlanta supply chain show, visiting prospects in China, the USA and the EU. Also winning many awards such as the Jaguar Landover Innovation Award and the IGD Supply Chain Excellence Award. Shortlisted at the Business Green Awards, the SOMI trailer has been recognised for potentially saving millions of tonnes of CO2 and saving millions of journeys by heavy trucks by utilising the space underneath to carry 30% extra cargo.

Pauline recognises that “with or without an MBA you appreciate that it would never be easy to introduce new technology, but my journey has been supported hugely by Innovate UK and the Women in Innovation programme”. Overall the

award was a catalyst for progress in so many ways. I have access to a strong peer community of amazing women-led businesses who I can reach out to for advice and support, despite our businesses being at different stages”. “Life-changing is an understatement - so much has and is happening due to the award and the following support and events”.

“Success is the journey and the results, having the SOMI trailer become the new normal would be the best result. Not only will it save CO2, traffic and make a profit for customers but will also enable SOMI trailers to develop.” Next for her innovation is to take SOMI Trailers on tour internationally and then sell licences to build them.



“The UK Government announced its intention that only zero tailpipe emission vehicles should be sold after 2035. Electric drivetrains powered by hydrogen fuel cells have an increased range and a speedy fill time compared to their battery equivalents, making them ideal for heavier vehicles and fleet operations. The age of hydrogen is coming and Fuel Cell Systems Ltd are ready for it!”

BETH DAWSON

Major Projects Manager at Fuel Cell Systems Limited (FCSL)

Within FCSL, Beth is focused on the deployment of larger fuel cell power projects, and the associated fuelling strategy. Affectionately known as the “hydrogen lady” within the AA (Automobile Association), she is the key liaison between their construction, rail, air and automotive customers. “I am pleased to be on the Executive Committee of the UK Hydrogen and Fuel Cell Association, and a member of the Hydrogen Hub organisation.”, Beth says.

Fuel Cell Systems has been installing, integrating and advising on fuel cells for nearly 10 years. They source fuel cell systems from around the globe and match up customer power needs with the best product for the job. They also see through the installation, with control systems and other peripherals, to ensure that each implementation is successful.

“As a project manager, I try to keep abreast of current calls from Innovate UK, KTN, OLEV and others.” Funding is such a great way to lower the hurdles towards project success, especially in the early days of any innovative venture

when the costs are at their highest. A successful demonstration gives the private sector confidence to invest in the next stage. One of their first solutions was the mobile hydrogen refuelling truck - a refuelling station on wheels. “When I saw the Women in Innovation call, I came up with the concept of a complementary mini hydrogen dispenser. This would be the equivalent of a hydrogen jerry-can, able to top up a stranded vehicle with an emergency fill.”

Beth acknowledged that winning the mentorship package from Innovate UK has been really enabling. KTN and EEN have been instrumental in helping them rewrite their company strategy to include a whole spectrum of hydrogen dispensing products. The networking opportunities have been significant too – on both the customer and supplier side. Beth subsequently secured Innovate UK funding for the Mini Hydrogen Dispenser project. Through EEN, she has also received significant business support such as Growth Mapper exercise, Strategy-on-a-Page, Value Propositions, and Marketing workshops. “All of these made us ask

questions of ourselves that we otherwise wouldn't have asked, being so busy with day-to-day tasks. It's made us more focused and successful as a business.”

The mini dispenser was trialled with both Hyundai and Toyota passenger cars successfully. “I was extremely proud when the mini hydrogen dispenser was integrated into the AA's zero-emission support vehicle (alongside a fast-charge battery-charger).” It means that no matter what zero-emission technology is right for the user, there are now options to rescue all stranded vehicles. Having two working hydrogen refuelling products means that they can speak more knowledgeably to potential customers about the options within the entire ‘hydrogen refuelling spectrum’. “Our expert opinion on dealing with hydrogen fuelling has recently been sought by the US Department of Energy and also NATO. Given time, it is quite likely that we will spin out a separate sister company for refuelling products.”



“Poultry is becoming the most consumed meat on the planet - which means there are plenty of feathers available for a global expansion of pluumo”.

ELENA DIECKMANN

CTO of Pluumo

AEROPOWDER created the world first feather-based packaging, pluumo. Pluumo an insulating textile, can be used for thermal shipment and outperforms polystyrene by several hours. The feather packaging is biodegradable, and it is derived from an abundant waste material, which makes Pluumo a pioneering product of the applied circular economy.

“The packaging sector is under a lot of pressure to become eco-friendly and green. However, legislators are not certain yet how to integrate innovative propositions such as pluumo into the existing legal framework”, Elena explains. Target customers for pluumo include companies in the food or pharmaceutical industry, who rely on thermal packaging to ensure that products are kept cool during transport.

There is a vast amount of feather waste generated by the poultry industry every day. Currently, it's processed by converting the feathers into a low-grade animal feed that cannot be widely used in the UK. That means there are plenty of feathers available for the global expansion of pluumo.

In 2016, Elena won Innovate UK's 2016 Women in Innovation Award and has received a tailored business support package, expert business mentor and £50,000 funding. Winning the award offered her a great support network, new connections to relevant industry partners, and national media recognition. “Laying the proposal out forced me to critically look at all aspects of my business”.

AEROPOWDER has already received interest in its technology from a range of industries beyond packaging, including the clothing, automotive and civil engineering sectors. Next for her company is scaling and expansion to Europe.



“The Women in Innovation Award has given us the confidence to take R&D from being a special project to a mainstreamed day to day part of our business”.

FANZI DOWN

Commercial Director at DPS Designs Ltd

DPS is a unique business that works directly with retailers such as Aldi, Hotel Chocolat, M&S and Harrods to build their chocolate range by working from concept through design, to manufacturing. To their knowledge, they are the only company in the world that has this operating model that fuses an intimate understanding of retail, genuinely creative design, knowledge of chocolate manufacture, in-house tooling manufacture and mould making. “All of these come together to give our customers an end to end service that helps them to grow their confectionery sales year on year.”

Within the same business, they also work in the supply chains for aerospace companies such as Lufthansa and British Airways, and automotive companies such as McLaren and Jaguar Land Rover. The technologies for producing chocolate moulds, for example, are very similar to those for producing car parts, which allows them to work in both supply chains and have a diverse

customer base. “Nevertheless, they both require real specialist knowledge and the time and energy to grow in the individual sectors. Getting the balance right between the two sides of the business takes a vigilant approach but it is one we are experienced at, and the benefits far outweigh the risks.”

Fanzi won a 2016 Women in Innovation Award after applying based on a recommendation from a friend. “It has been a hugely positive experience and has come just at the right time for the business, giving us the confidence, and also outside expertise, to push forward at an uncertain time for businesses in general. Being involved in the award has been brilliant, it’s given me exposure to people who think creatively and have experiences that are both very similar and very different to my own”.

The opportunities for innovation in their sector, particularly on the confectionery side, have always been there but finding the resource to focus on them has been challenging for a small business. “The grant and the connections the award offered has let us properly investigate IP and to create new techniques through R&D, which have been mainstreamed within the business.” DPS now routinely, and weekly, creates time for innovation and R&D.



“We’re proud that our online platform is liberating scientists from the lab, empowering them to increase the speed, scale and reach of experiments, and unleashing their creativity to improve lives”.

JOANNA EVERSLED

Founder and CEO - Cauldron Science and Gorilla Experiment Builder

“I created Gorilla - www.gorilla.sc - because behavioural science research wasn't having the everyday impact that it should”, she explains. Many global challenges - for instance in health, finance, politics or education - can be solved by better understanding or even changing how people think, feel and behave, either on their own or in groups. However, behavioural scientists were still running experiments in the lab, which was massively limiting the scope, scale and replicability of their research. With a vision to empower behavioural scientists to create the evidence-tested digital products of the future, Jo provides researchers with the tools they need to run experiments online quickly and easily, to accelerate the research cycle and allow their ideas to be tested in the real world.

Within her team of nine, Jo manages and delivers all aspects of the business except software development. “Scaling our business while looking after a baby has meant that we've created effective delegations and reporting systems and

processes for when I'm not available.” Gorilla is a powerful, flexible and intuitive online platform for pioneering behavioural science students, researchers and practitioners to help them run novel behavioural experiments on humans easily, quickly, and cheaply.

As a finalist in the Women in Innovation competition, Jo has received bespoke support. “Kirsten Masson, my EEN coach, was absolutely fantastic. She's provided me with excellent exercises at various stages of the business. With her help we increased revenue x36 in four years, which is equivalent to more than trebling revenue every year. We've achieved this with only a modest headcount increase.” The business is now financially free and generating sufficient sales from their product each year to work full time on it, so they expect growth to accelerate.

Kirsten provided regular sessions to keep them on track, along with simple exercises that helped

them make better and more informed business decisions. “Through expert executive coaching, the Women in Innovation project has helped me build a strong company, brand and team and I'm excited about the next stages of our growth journey.”

In the short term, Jo and her team are focused on ambitious sales growth targets. The generated revenue will allow them to develop new experimental tools that can be used by their global client base. “Ultimately, we want to help behavioural scientists create the evidence-tested products of the future that promote health, wealth, happiness or education.” For instance, digital learning games that provide high-quality education cheaply, or behavioural health interventions that improve health outcomes, or optimising business insights to improve decision making and increase efficiency. “This year we plan to release two new products within Gorilla and hopefully hire a marketing director.”



“The single most wonderful thing about our work is the happiness of knowing that people enjoy using our toilets every day”.

VIRGINIA GARDINER

Founder and CEO of Loowatt Ltd.

Loowatt makes waterless flush toilets and sanitation solutions suited for today's water-scarce world. "Sewered sanitation is simply unfeasible in most parts of the world today. Our unique technology is perfect for urban and portable sanitation providers who need high-quality sanitation that doesn't rely on sewers", Virginia explains. Loowatt was first developed as her Master's degree project, when she decided to create a toilet that doesn't use water, works in any dwelling, and turns waste into a commodity. Since 2016, they have been commercialising the system through servicing operations, and last year they began selling hardware to service providers in the UK and Internationally.

Loowatt is truly a 21st-century toilet because it provides the experience of a flush toilet without the water. It's also odourless and hygienic, which is crucial because toilets are a vital part of

everyday life. "Our processing equipment then facilitates waste-to-value treatment, which is key to sustainability", she clarifies. Their field is fascinating because toilets and sanitation are relevant to several other fields. They rely not just on new technologies but also sustainable service models. Developing a new sanitation technology that is not only a product, but a service model and waste management system is a long road. "We have been building the market in tandem with perfecting our solutions, which, while endlessly stimulating, is not without challenges."

"Innovate UK has been a valuable supporter of Loowatt's technology developments since the early years, and the work we do continues to contain a lot of high-risk frontier technology developments, even as we commercialise the market-ready aspects of the system." After learning about the Women in Innovation

programme through her partners, Virginia was one of the finalists in the competition. "I found the programme to be an excellent opportunity to connect with other entrepreneurs and advisors with experience building businesses", she admits. For her, the best aspects of the network have been meeting entrepreneurs working not only in technology but in hardware, "It's fairly unusual to meet others like me who are also working in hardware".

"This year I am delighted that we are starting work with the City of Manila in the Philippines for the rollout of toilets to their informal settlement areas. This is a huge milestone for us because the Loowatt system was designed for applications just like this." As they are already providing hardware to service providers who need great waterless toilets, in the next few years, they are working to scale it up.



“Tackling climate change and fuel poverty are about choosing what we want for our children. Using the power of the drive of our communities and our abundant natural resources combined with technology and professional support and skills and we can build a society we can be proud of”.

DR MARY GILLIE MPhys MIET CEng

Technical and Innovation Director of Energy Local CIC

Energy Local is a social enterprise founded in 2013 that is transforming the electricity market for local communities and small-scale renewable generation. “Our mission is to support the establishment of thousands of local, not-for-profit, Energy Local Clubs (ELCs)”, Mary explains. Energy Local helps thousands of communities to get more value from renewable generation by using it locally, pay less for it but giving more to local renewables. By sharing fairly between members, local generation will reduce the cost of electricity, challenge fuel poverty, and give local renewable generators a fair price for their power.

No other company is developing a community-led approach to changing the electricity market combined with technology to benefit households and communities whilst supporting an efficient low carbon electricity system. Reducing fuel poverty and developing new local electricity markets to help decarbonise our energy system is urgently needed. “Our business model is unique and ground-breaking. The support and interest are huge”, Mary admits. Being a small organisation, navigating the complexity of the electricity industry and working with large organisations is, nevertheless, a challenge.

Mary is one of the finalists of the Women in Innovation 2016 competition. Being part of the programme was “a challenge, positive and encouraging” and it was “useful to focus on what we do and our vision and network with fellow female innovators”, she reveals.

When asked what success means to her, she confidently explained “I am an engineer to use science for the benefit of society and the environment. If the success of the company means we can improve people’s lives and make a contribution to tackling climate change, I will feel I have put my skills to good use.” Next for her is to roll out Energy Local across the UK and make a lasting change to the electricity market.



“Encouraging more women, more diversity in shipping means more creativity and fresh viewpoints which enables pragmatic, near-to-market technically, commercially and environmentally superior solutions”.

DIANE GILPIN

Founder and CEO of Smart Green Shipping

Diane Gilpin leads Smart Green Shipping (SGS), a collaborative industry initiative designed to develop technically, commercially and environmentally superior systems solutions for shipping. It does this by working within the prevailing systems and designing progressive new business models, powered by renewable energy, to build cleaner, faster cheaper ships. SGS collaborates across the shipping ecosystem. It is in formal partnership with world-renowned Humphreys Yacht Design and the Institution of Mechanical Engineers (IMechE). It collaborates with Drax, marine engineers Malin, shipowners Ultrabulk, Lloyds Register, insurers Willis Towers Watson, Gibson shipbrokers, Capital Law and University of Southampton. By understanding the complexities of the whole shipping system SGS is designing solutions that address the multiple challenges the shipping Industry faces.

“Shipping has been slow to recognise the commercial opportunities arising out of the urgent need to rapidly reduce emissions”, she says. It is largely hidden offshore and so faces few political or consumer pressures to reduce its significant contribution to climate change. Therefore, encouraging the industry to develop, trial and scale new technologies, when there are few mandatory policies and no financial incentives makes the sector extremely challenging. “Working with a team of brilliant collaborators drawn from across and beyond the shipping system, who all motivated to capitalise on commercially attractive emission reduction solutions, enables us to navigate the course across challenging waters.”

After a friendly recommendation from a collaborator, Diane was one of the finalists in the Women in Innovation competition, “I have met and was inspired by great women leaders. The support I received around Intellectual Property protection was also very useful”.

“SGS key purpose is to make emissions reductions in shipping simple and desirable”, thus, they want to set up a Centre for Renewables in Shipping where they combine their three areas of exploration – technical hardware, digital enablers and customer support. Bringing together all the talent in one place allows a rich cross-fertilisation of ideas and approaches.



“It’s been great being connected to a network that has so much inspiration, diversity and energy”.

LUCY GOWER

Founder and Director of Lucidity

Lucy Gower is a coach, trainer consultant, speaker, blogger, and author. In 2012, Lucidity was set up by Lucy to help leaders, teams and organisations to have the confidence to think clearly and make more impact. It delivers training in innovation, creativity, learning from failure and storytelling. Additionally, it provides consultancy to help organisations develop and maintain a culture where innovation can thrive and coaching to help leaders and managers make change happen.

Lucy also runs The Lucidity Network, a learning and development membership that helps leaders and managers tackle the complexities of working life that don't come with the leadership or management handbook. It works across all sectors, with a particular emphasis on the not for profit sector.

“We bring together talented individuals with a wealth of skills and experience in leadership development, creativity, innovation culture change and organisational development. Lucidity training, coaching and consultancy are practical because we help our clients learn by doing rather than theory. We work in partnership with our clients to give them the knowledge, skills and confidence to keep making change happen once they finish working with us. And we make even the most complex projects fun.”

As a finalist in the Women in Innovation competition, Lucy has received bespoke support for her and her innovation, “I worked with a coach and a mentor who both helped me to think about the scalability of my business”. She considers that connecting to so many inspiring women, working on very different businesses, all passionate about their business was really motivating.

One of their biggest challenges is that, in uncertain times, organisations cut back on their people development budgets and it's their people that will help them think creatively to solve problems and achieve ultimate success. Nevertheless, success to Lucy means that “I can help more people have the confidence to achieve the work-life and impact they want”. Next step for her innovation is scaling the Lucidity Network learning and development membership.



**“The only way to make sense
out of change is to plunge into
it, move with it, and join the
dance”.**

ALAN WATTS

DR LORIN GRESSER

Co-founder and CEO of Dem Dx Ltd

Established in 2015, Dem Dx's is an award-winning health technology platform which provides a pragmatic approach to clinical reasoning in the clinical setting. Healthcare systems are addressing the global challenges of doctor shortages by turning to allied health professionals to take on diagnostic roles that had previously been the sole responsibility of physicians. Dem Dx digital clinical support tool specifically addresses this market, enabling these pivotal clinicians to provide the same level of triage expertise as physicians, with confidence. It combines diagnostic algorithms from a global community of medical specialists, with machine learning to reach more accurate diagnoses in an efficient, transparent way.

Dem Dx's vision is to be a key player in delivering global universal healthcare. "Every health professional that diagnoses patients, specifically those in less developed countries, will have access to insights of world-leading clinical experts via the

platform, thereby democratising access to both medical education and clinical reasoning support", Lorin explains. The machine learning overlay will enable real-life data to be added to the expertly curated content thereby customising pathways to regions' clinical requirements.

"I had the great honour of being part of the first cohort of winners of the Women in Innovation programme in 2016. During that period, I actively participated in the various forms of business support provided by the programme including tutorials on marketing, business positioning and fundraising." Although all the workshops were immensely valuable, ultimately it was the contacts, networking and community that she found the most useful and rewarding. "It was really inspiring to meet such a range of entrepreneurs from such different backgrounds, ages and sectors", she admits.

For Lorin, success is the impact that Dem Dx can have in real-world clinical settings: supporting healthcare professionals at the front line to deliver better and safer care to those most in need. "We aim to build on our partnership with the various clinical institutions, where our collaboration has enabled us to launch the machine learning overlay onto the algorithms and improve the real-world relevance of our product, and the accuracy and relevance of the advice provided. As they occur, these improvements will be rolled out across the platform ensuring that all users benefit from the work being done. Over time this will allow us to customise the support to local regional clinical requirements." Looking to the future, their main goal is to develop more such partnerships with clinical institutions. The more partnerships they have, the more Dem Dx is used and the more they can share expertise, create impact and gain clinical traction.



“The world needs more empathy, transparency and total commitment to the ecological and social challenges facing us within the next decades. The role of women at every level of society is absolutely key to tackle and solve these challenges”.

DR CARMEN HIJOSA

Founder and Chief Creative and Innovation Officer of Ananas Anam UK Ltd

Ananas Anam UK Ltd was established in 2013, as a result of Dr Hijosa's research via a PhD in the Royal College of Art & Design in London developing Piñatex®. Piñatex is a natural plant-based and versatile material from a sustainable source. This innovative material is made from fibres from the pineapple leaves, a by-product of the pineapple harvest. Piñatex follows a strong social and ecological agenda and it can be mass-produced, which makes it a cost-effective textile proposition. It is one of the few sustainable material solutions in the market with a low environmental impact and a positive social and economic impact at scale.

Ananas Anam's vision is material innovation through sustainability based on the three pillars of society: social, economic and environmental. The company uniqueness is on the valorisation of waste from agriculture; the development of a

unique supply chain which brings employment to pineapple farmers and brings to market a new material that can be used as an alternative to leather and petroleum-based textiles, thus having a much less environmental impact. "Ananas Anam, via its product Piñatex, addresses the very real and pressing concerns we face today in the world: climate change; finite resources, and social inequality", Carmen further explains.

Today's most pressing challenges are in the up scaling of Piñatex supply chain and how to replicate the model in any part of the world where pineapples are grown while doing this based on BCorp and circular economy principles. The opportunities are enormous; the marketplace and end consumers are increasingly asking for more transparency and more sustainable products that help to heal the earth and care for people and Piñatex does both.

Dr Carmen Hijosa, awarded the Women in Innovation Award in 2016, commented that Women in Innovation is an "Excellent programme, very comprehensive and varied; from getting personal advice as the CEO of the company, to being prepared for pitching, to getting new contacts and advice on team building". The elements that she found most useful were the team building activities, the pitching workshops and investors network.

Success for her company means "that the voice we now have in the market and society helps to inspire and lead others to follow the path of transparency, sustainability and circular economy. As our markets are growing, the R&D continues, which in turn strengthens our product market position". Next steps for her company is to consolidate the team, upscale the supply chain while expanding their customer base. Piñatex and the Piñatex Collection will continue to evolve to meet the different market demands.



“Stay true to your founding culture and values, be resilient about realising your goals and never give up!”

ANNA HILL

Co-Founding Director of River Cycleway Consortium Europe Ltd

Anna Hill is the Co-Founding Director of River Cycleway Consortium Europe Ltd. (RCCE), a design innovation company that is a partnership between an award-winning design engineering team and an Irish family office with expertise in sustainable development, impact investing and renewable energy. The Deckway is a state-of-the-art, floating, traffic-free, pedestrian and bicycle pathway capable of generating its own supply of renewable energy. “We have created a design service package which allows for a reduced time to market and that is adaptable to accommodate solutions envisioned for the future of smart cities.”

The River Cycleway Consortium group of companies embrace the principles of a circular economy, promoting the growth of sustainable communities and advocate for the transition to 100% renewable energy generation to mitigate and adapt to the climate crisis. With a unique approach that challenges conventional transportation thinking, RCC specialises in creating innovative and green-blue water-based infrastructures that utilise the overlooked and untapped potential of major urban port

cities including rivers, canals, waterfronts, and other waterways. Their design engineering and AI portfolio prioritise the multifaceted and interconnected issues faced by European and global cities, specifically citizen and environmental health and well-being, pedestrian and cycling safety, traffic congestion, air pollution, flood relief, and climate mitigation. Through customised modular and climate-adaptive water-based floating solutions, RCC endeavours to develop and scale its smart innovations to forward-thinking megacities around the world.

Cities face enormous challenges if they are to continue to provide their citizens with safe, happy and healthy lifestyles. Old challenges, caused by traffic congestion and a lack of access to active clean transport infrastructure are being compounded by extreme weather such as flooding, fires and the loss of biodiversity that will further impact the environment, the economy, urban and global citizen health and wellbeing.

In 2016, Anna was honoured with a Women in Innovation Award and received a tailored business support package, expert business

mentor and £50,000 funding. “It was useful to share experiences with other entrepreneurs and to look objectively at the reality of our experiences, to share in both our successes and set-backs, specifically in raising finance and engaging with the “tech culture” as female-led technology ventures.” Women-led and specifically environmental mission-led companies have consistently been overlooked by VC investors, to the detriment of the planet.

“Seeing meaningful environmental and social impact delivered through a values-led collaborative enterprise drives the passion for my work.” The RCC group of companies work across the transport, systems engineering, energy and education sectors. The environmental crisis calls for creative interdisciplinary and solutions-driven approaches. “My hope is that by receiving the recognition as an innovator working on “disruption for good” and “systemic change” we will help to inspire a new generation to be bold, inventive, collaborative, and to prepare for a more resilient adaptive future as we deal with the acceleration of the effects of the Climate crisis.”



“The change that you want to make is unique to your worldview. If it now seems impossible to achieve, keep true to your vision and the path will emerge”.

GABRIELA ISAS

Founder and CEO of Good With Limited

As an experienced entrepreneur and intrapreneur leading transformation and innovation within businesses, Gabriela has employed her 30-years' experience to develop Good With Limited. Good With Limited is using the latest tech/financial data/blockchain to show young adults the truth about their money and how it works and in the process, building them a Good With[®] Score that de-risks and gives them access to fairer finance. "We're the only solution that focuses on the teaching of debt and its long-term impact on our 'learner's' future", Gabriela explains.

"When I came up with the idea, the technology was available but access to real-time, primary financial data was a big obstacle. Open Banking regulation has made everything I envisaged a few years ago possible and has the potential to open the industry to more innovative companies who are reimagining banking." Banking customers stand to benefit if they understand and can trust these innovative companies, but companies are not yet showing them the benefits, that their data analysed and presented to them in actionable

ways, can provide. Additionally, there's little incentive for established banks or lenders to educate customers around it, nor do customers trust that advice. She further explains, "as an independent, transparent and empowering business, this is where we can help: we exist to help young adults understand how to be good with money, manage debt and in so doing, keep their long-term financial options open. Financial education isn't sexy, but we're on a mission to make it personal and relevant because it is."

As a recipient of the Innovate UK Smart grant, Gabriela was already aware of governmental support for SME's who were advancing industries through technology. "When I heard that there was specific support for women, I wanted to be involved as the feeling of 'doing it alone' at times got to be too much. I was honoured to be counted amongst some of the most ambitious women, innovating in a wide variety of industries. I enjoyed the opportunity to meet some amazing women, whose challenges were similar or different, smaller or larger, but all had the vision, decisiveness and

dedication to make their innovation happen. That was inspiring." Gabriela explains that what made the programme specifically helpful was the access to a network of business support, networking events, and the kudos that being part of a select group of women from around the UK brings with it. "Being recognised as innovative on the platform has been a form of sustenance throughout the ups and downs, both personally and professionally."

By showing how money works and lowering the risk for banks, Good With can change young peoples' future in one generation. "Our hope at Good With is that young people 'graduate' from us knowing everything worth knowing about money". As someone who's personally suffered the consequences of unmanageable debt, seeing young people empowered and in control of their future means everything to her. Next steps are extending the team to launch the product, securing partnerships with universities and charities, and working with the banking industry that needs reimagining for the next generation of customers.

SET squared
PARTNERSHIP

Universities of Bath, Bristol,
Exeter, Southampton & Surrey



“If industry can help more university researchers to see the potential for their work to help people (the social impact), and enable them to at least try it, then academic/industry/entrepreneur partnerships could become commonplace rather than the absolute exceptions that they are today. May TRUEinvivo® not just be an exception”.

DR SHAKARDOKHT SHAKAR JAFARI

CTO and Founder of TRUEinvivo® Ltd

Dr Shakardokht (Shakar) Jafari, CTO and Founder of TRUEinvivo® Ltd is a chartered clinical scientist and drives the research side of the business. Additionally, she leads the technical liaisons with senior clinicians in the radiotherapy departments of cancer centres.

Radiotherapy damages or fails 10-25% of patients, but clinicians cannot see or measure the radiation received at the target tumour. After losing her father to cancer, Shakar devised an innovative radiation detection system, TRUEinvivo®. It measures radiation doses directly in patients to give clinicians better quality assurance (QA) information and confidence about the accuracy of treatments. This helps them make radiotherapy more effective and safer potentially for millions of patients worldwide. This improves the overall patient experience and helps to improve their quality of life.

Winning the Women in Innovation Award in 2016 hugely helped increasing recognition, strengthening marketing strategies, improve her business strategy and financially. The funding received helped materialise the concept and hire an engineer to build the design. “We also benefited a lot from mentoring and support that we received”, she admits. Since winning the award, Shakar has completed research for the system. TRUEinvivo® has attracted its first investor and hired four additional staff members. Shakar also received a scientific award for successful women of Afghanistan.

“Our main challenge (apart from securing more investment) is to get our technology trialled, written up and published by key hospitals on a variety of cancer types and treatments.” At the moment, the company has five collaborating hospitals ready to start trials this year, but the challenge is waiting for them to finalise. In vivo

dosimetry (as such measurements are called) is only a recommendation in the UK but it is mandatory already in France, Denmark, Sweden and the Czech Republic. “Therefore, a second challenge, but also an opportunity, is to enter those markets as soon as possible.”

For Shakar, success for her company means “that I can keep the promise I made to my father, who died of cancer in Afghanistan where there is no radiotherapy, that I will make a difference to cancer patients worldwide.” Their goal is to be instrumental in getting the best and most accurate treatment to all radiotherapy patients. “I have many other ideas that our CEO, Nigel Biggs, insists on keeping on a list until we make a commercial success out of the TRUEinvivo® technology.” She also has a passion to help turn brilliant PhD theses currently sitting on University shelves into successful products or services to help people.



“Supported by the Innovate UK REACH project, working with partners Createc and UKAEA RACE, a combined, robotically deployed sampling and gamma imaging sensor is being developed. The system will be trialled in April, showcasing this unique capability to the nuclear industry. Viridians ViridiScope tool now reaches places previously unimagined”.

PROF KYM JARVIS

Managing Director of Viridian Consultants Ltd

Kym is Managing Director of Viridian Consultants, a successful research scientist, multiple award winner and the first woman to lead a Research Council Analytical Facility (NERC). Viridian Consultants was incorporated in 2015 and is a MicroSME with four employees, their Board being two-thirds women. “We develop and build innovative tools for nuclear decommissioning and homeland security, specifically laser samplers and novel radiation detection devices. We are nimble, adaptable, industry award winners who can react quickly to the needs of our customers on UK nuclear sites”, she further explains. Their tools will make nuclear decommissioning safer, cleaner and faster than is currently possible.

The most significant challenge they face is to gain acceptance of their new, disruptive technology in an industry which plans projects

years in advance and often through framework agreements. Nevertheless, the opportunities they have are huge, “The decommissioning of the UK’s current and future nuclear liabilities represents a significant spend over a lengthy timeframe, with current undiscounted costs estimated at £146bn. Annual spend with SMEs is estimated at £350m. So, the stakes are high.”

Kym was one of the fifteen award holders of the 2016 Women in Innovation competition and has received £50,000 funding and a tailored business support package. “I loved the programme. The financial support helped to progress some speculative innovation ideas while the events which were held, provided a brilliant opportunity to learn new skills, promote the technology and company, gain valuable business experience and to network with other like-minded people”.

Some of the elements offered by the programme that she found specifically helpful were the workshops, training opportunities, and more recently, the webinar programme “They were professional, informative and really set me thinking and wanting to apply what I’d learned.”

Thinking of what success means to her, Kym enthusiastically states that “It means everything. My life has changed. The company, and what we do, absorbs me. Looking back, it is hard to believe that we have achieved so much in such a short time, and that is down to the dedication of us all.” As their innovation is complete for the moment, their aim is to see the ‘tools’ being used on every nuclear site in the UK and to develop the business to be the go-to company for nuclear characterisation worldwide.



“We’re proud and honoured to be part of the Women in Innovation family and hope they will always be on the journey with us”.

CAROLYN PEARSON

CEO of Maiden Voyage

After a 20+ year career in leading technology teams for brands such as ITV, Sony Music, KLM, the BBC and EasyJet, Carolyn left her corporate career to launch Maiden-Voyage in 2008. At Maiden Voyage, they make business travel safe in a diverse world by helping organisations to safeguard their female and LGBTQ+ travellers. Their solutions include Innovative and thought-provoking education delivered through eLearning and in-person workshops.

A focus on diversity within organisations means that women and LGBTQ+ employees progressing to higher levels will inevitably need to travel within

their roles and employers have a duty of care to facilitate safe business travel. “Unfortunately, the world isn’t equal for all and we help employees and employers to navigate the various legal and cultural restriction around the globe.’ With worldwide attention on the #MeToo campaign, they are appropriately positioned to help reduce systemic sexual harassment happening on business travel and they empower the community to minimise this risk.

The process of putting together the application for the Women in Innovation programme helped them to focus on who they are, what they do and

their potential to bring innovation to the market. “The exposure and kudos we earned from being awardees was amazing and the support from the team has been consistently there. We feel like part of the Women in Innovation family and look forward to sharing some of our big news soon.”

The success of the company means that they can genuinely change people’s lives and their horizons by making the world a safer place. They are scaling rapidly both geographically and entering new industry verticals continuously.



**“The brighter your light shines
the more you can light the path
for those who come after you”.**

DR BECKY SAGE

CEO of Interactive Scientific

Interactive Scientific (iSci) started in 2013 to make the invisible scientific world visible, with the ultimate goal of helping more people understand science so they can tackle the challenges that are underpinned by it. Their tools are designed to give researchers ways to communicate and collaborate, and learners' ways to engage with science.

Professionally, the biggest challenge that they had was the immaturity of the market, alongside the number of potential application areas of their technology. Both of these things meant that significant investment was required to make an impact. She further explains that, personally, her biggest challenge was: "low self-esteem.. I had to do a lot of work to build the belief in myself and to become confident in my leadership, which has enabled me to find trusted people to work with. This has been the most important part of my journey as a female entrepreneur".

Becky is one of the fifteen award holders for the 2016 Women in Innovation competition and

has received a grant of £50,000 and a bespoke support package. "I found out about the Women in Innovation programme through my networks and I applied. It was the most empowering application form I'd ever filled out. I listened to my instincts and creative impulses as I wrote it and ultimately, I became a Women in Innovation Award winner. I have been involved in the programme ever since."

Being involved in the Women in Innovation programme began a long journey of growth both professionally, as a business leader, and personally. "I had put all my ideas and vision into the application without validation from others and when that was successful, I realised that being myself was ok and gave me the confidence to further build the business. This was further validated by meeting a peer group of innovative women in leadership positions. We shared many experiences and it completely changed my perspective", she admits.

For her, success in her business endeavours is creating something of value that directly or

indirectly can put a smile on someone's face. She wants to be able to provide innovation that makes people's lives easier and better. Once that is done, success is finding a sustainable business model that allows the product to survive or thrive. "So, as I move forward, success is generating scalable revenue from the delivery of digital education tools for both corporate and individual customers. Success is doing this whilst maintaining good health and balanced energy, prioritising so that my passion and talents only go into the most important things and ensuring that I trust the people that I am working with."

"The last year has been all about saying no to things – examining the areas where we have been putting in a lot of time, energy and money without seeing a return and removing them from our portfolio", she explains. A transition was definitely necessary. That has opened up a huge wealth of opportunities, thus next steps are to carry out her due diligence on those opportunities and focus on doing a few things well.



**“There’s no use talking about
the problem unless you talk
about the solution”.**

BETTY WILLIAMS

GABRIELLA SANTOSA

Strategic Advisor for Puraffinity

Puraffinity was incorporated in 2015 to tackle water pollution, one of the most serious emerging threats the world faces today by tackling Emerging Contaminants. Left untreated, we put environmental and human health at risk. The company specialises in the design of advanced materials and has developed a bio-based novel adsorbent capable of removing highly challenging pollutants from contaminated water and wastewater. The first target is PFAS (perfluoroalkyl substances), a chemical that is highly mobile in water and resistant to degradation and oxidation.

“We developed a Customised Granular Media (CGM), designed specifically to remove PFAS from water. Unlike other technologies, our CGM was not designed as a generic treatment for all contaminants but rather a reliable, robust and targeted solution specifically for PFAS.”, she explains. Using advanced supramolecular chemical methods has led to a unique product exhibiting superior removal capability, faster adsorption kinetics, regenerable properties and lower operating expenditure (OPEX) compared to other adsorbent technologies.

The water industry is a slow-moving behemoth. Many companies have tried and failed to convince institutional investors and state-owned companies to innovate away from 80s/90s technology. “Therein lies the challenge and the opportunity: we’ve had to find the sweet spot of urgency in water treatment, that could shift the whole ship. Aside from our own efforts, finding that was also down to luck and timing.” In 2019, the awareness on PFAS as a dangerous contaminant, embedded in the blood of 99% of Americans, skyrocketed. “We now have a responsibility to answer the public cry with the best possible technological solution for this crisis.”

As an alumnus of the Venture Capital Challenge held by Imperial Innovations, Gabi was made aware of the Women in Innovation programme and after entering the competition, she was shortlisted as a finalist. “It was highly inspiring to be around other women - many of them Superwomen - who have such vitality and pizzazz and are game-changers in their respective arenas. I learnt that innovation is more than just making

something new, rather it requires you to imagine what ecosystem needs to exist for it to work... and how you’re going to make that change happen!” She has found the wide breadth of topics covered by the seminars – such as ‘asserting one’s self in professional settings’ and ‘legal perspectives on innovation’ - particularly helpful.

“It would still be such a dream for me to have Puraffinity producing and distributing its product and creating a real sizeable impact! Imagine that this all started pipetting over a lab-bench, and scrapping together pitches between second-year lectures, and now knowing it could make a difference in millions of lives affected by water contamination.”, she admits. They are currently working on on-site pilot trials with several airports and engineering solutions providers across the US and Europe. As a B2B business, they put the customer’s satisfaction and their approval of the product performance at their utmost priority and are working hard to fulfil this.



“Innovate UK’s Women in Innovation Award brought confidence and credibility both to the technology and to myself and gifted a passport to places and experiences I would otherwise not have had access to. These have built layer upon layer of credence for which I’m very grateful”.

REBECCA STREET

Founder and CEO of Material Alchemy Ltd

Rebecca Street has developed an innovative process for applying precious metals to the fabric. It is unique in both the aesthetic Luxury Fashion and Interior markets, whilst its conductive and washable qualities demonstrate potential within both the Medical Wearables and the Wellbeing markets.

Development began in 2015 with a series of artisan T-shirts. “Upon receiving the award in 2016, I had the opportunity to run small comparative trials in research labs, to determine that this was the only process of applying gold to a substrate which remained conductive after 10 washes, alighting an LED to prove it. This illustrated potential within the Wearables market”, Rebecca further explains.

An invitation was then received to showcase the technology at The GREAT Festival of Innovation in Hong Kong in 2018, where many connections were made. “There’s an open invitation to showcase my work in any British Embassy, plus a professor of Neurophysics from Ulster University

agreed to run a small pilot study to test the impact on the brain’s activity when wearing this technology, to positive results. Progress has been slow, but we are due to commence a new, larger trial within the next two months.”

They have been wearer-trialling the technology, in the form of patches; people with different conditions e.g. Parkinson’s, high anxiety/sleep deprivation, localised and full-body spasms, hypersensitivity, plus EDS (Ehlers Danlos Syndrome). The person with EDS feels her life has completely changed since wearing the patches (5mths), both physically and emotionally. This illustrates potential within the Wellbeing market, especially if trials show it could reverse anxiety and help stabilise sleep patterns.

“Regarding the Luxury aesthetic market, I have achieved a great accolade; in 2019 the London Assay Office in Goldsmith’s Hall gave me a Hallmark as validation of the quality of gold being utilised in my work.” They have never given such validation to any product line other than gold or silver jewellery and artefacts. This took a year

to negotiate and gives great credence. Having very recently developed and launched a silk/gold loungewear capsule collection, there are current discussions with online store founders and a sales representative for the Middle East.

Due to a friendly recommendation, Rebecca applied and won the Women in Innovation Award in 2016, receiving bespoke support. “It was as though I’d joined a club; the programme was focused solely on women, events mostly hosted by women, with an immediate camaraderie amongst the cohort. My mentor was very interested and supportive too”, she admits.

Next for her innovation is exploiting the new loungewear collection fully and conduct more thorough R&D on the benefits of wearing the technology. When asked what success represented for her, she enthusiastically said: “It means everything; it is a culmination of all my life experience, channelled into something unique, beautiful and beneficial.”



“RainShare has had a bumpy journey to date, but Women in Innovation has been so valuable in providing help and support”.

DR SARAH WARD

Director of RainShare

RainShare was established in 2014 to reconnect people with water through rainfall-runoff sharing within communities, which also addresses local water supply and flooding issues. Sarah's role is running the company as a network to raise awareness with the hope of continuing to grow the ethos of RainSharing into a viable service.

Growth has been slow as RainShare's foundation is the relationships and processes through which individuals and communities come together to make the most of a precious resource. At the moment the water/environment sector is more focused on innovation for technology or 'product' rather than process or service, so RainShare is biding its time until the world is ready for the next phase!

Sarah was one of the finalists in the 2016 Women in Innovation programme and she emphasised that "The programme is invaluable - the support and inspiration it provides helps provide momentum at crucial points in the innovation journey. Meetings with a mentor and then reflecting on what needed to come next helped me consider if building a company was what I really wanted to do at that time."

For Sarah, the success of RainShare as a social enterprise will be when rainfall-runoff sharing happens in every community and we are more resilient to a changing climate and living with environmental change! "That literally means the world to me", she enthusiastically stated. Next for her is exploring new funding options that start to emerge to enable a more sustainable long-term future to keep the RainShare ethos alive and well.





2019

Jessica Bruce
Agnes Czako
Alex Haslehurst
Dr Fanya Ismail
Cintia Kimura
Daniela Parades Fuentes
Dolores Sanders
Dr Debbie Wake
Sheana Yu



“The progress that we have made in the past 12 months since I received the Women in Innovation Award is incredible. It has helped us expand our offering to all people suffering from musculoskeletal pain during activity and also to sell our first systems in the US and China”.

JESSICA BRUCE

Founder and CEO of Run3D

As an engineering undergraduate at Oxford, Jessica discovered her interest in biomedical engineering. Combined with her passion for running, Jessica went on to study the field of biomechanics. Throughout her PhD at Oxford, investigating injuries in runners, she questioned why the technology she was using in her research was not available for all runners.

To take the 3D gait analysis technology out of the lab and into clinics, to help clinicians treat real runners, the idea of Run3D was born. Run3D, a biomechanical engineering company specialising in 3D motion, has developed a real-time analysis and retraining system that identifies patterns in running style. Addressing the issue of our ageing society, Jessica's 3D gait analysis can delay the need for surgery and reduce joint discomfort, helping to improve people's lives.

The technology has been around for 15-20 years, it's used in biomechanics research and special orthopaedic hospitals. "What we have done is to make it affordable and make it easy to use.

We now effectively franchise our technology to podiatrists, physiotherapists, clinics and sports injuries clinics across Europe. We now have our first system in the US and China. The biggest challenge is managing the workload within the team, letting go and delegating as we grow. But opportunities are massive, for us our big thing now is expanding globally."

After receiving funding to build Run3D, through the Innovate UK Smart Grant, Jessica received a friendly recommendation from the Innovate UK family to apply for the Women in Innovation competition. She is now one of the nine women that have received £50,000 and a year long package of bespoke support, coaching and marketing as part of the competition. "Our focus initially was Run3D, but the award expanded it. We are currently developing Walk3D because the same principles apply: the way that you walk impacts how the loads are applied to your body and dictates then whether or not you are going to get injured and the types of injuries you are likely to have."

"Seeing that other people are in the same position, with similar challenges and opportunities, has been one of the best aspects of the Women in Innovation programme", she admits. Not only has the programme enabled Run3D to enter a new market with Walk3D but has also led to a new engineer entering the team. "The network of contacts is exceptional, and the programme has raised credibility in us, in our company and in what we do". Jessica acknowledges that being an award holder is invaluable, as she is selling her product to both clinicians and consumers.

Run3D are focusing on expansion into the US market, Jessica adds that "we've got a fantastic partner working with us out there, he's already installed the first system. I've been very fortunate with the Women in Innovation, plus I have a good investor network that is very involved", she explains.



“It has been a fascinating experience overall, I am in a cohort amongst such inspiring, smart, driven, passionate women – it is really refreshing to learn about each other’s experiences, to know that ‘we are not alone’ with our problems”.

AGNES CZAKO

Founder of AirEx

Within a team of six, Agnes manages the relationships with AirEx's key stakeholders, corporate clients, investors, as well as the team. AirEx is a London-based technology start-up focusing on the development and rapid scale-up of efficiency technologies in the domestic retrofit sector, to tackle fuel poverty and climate change.

Cold, draughty, poorly insulated homes contribute to 26% of the UK's total greenhouse gas emissions and recent research demonstrated that up to 15% of this energy waste can be caused by airbricks. In the same time, if residents block these air vents permanently, it can cause damp, condensation, with associated health risks. To address this challenge, they developed AirEx, an IoT-enabled smart ventilation control to reduce fabric heat loss without compromising damp and indoor air quality. The system uses AI to predict occupants' behaviour and weather pattern for more efficient air flow optimisation across the home. The vents communicate via radio frequency with a wi-fi-connected AirEx hub, through which data can be viewed by the landlord or the occupant.

The first funding opportunity for the product was an Innovate UK Energy Game Changer programme in 2016, which allowed them to build the first prototypes and validate their hypothesis. "Since then I am closely following the funding opportunities from Innovate UK and I felt that the Women in Innovation programme would be an amazing opportunity. The lack of female representation in founding members of tech companies, especially in my sector, construction, is an enormous, pressing issue and this is a cause I truly care about." Agnes believed that going through the programme could not only help her and her business but also contribute to creating a change: attracting more women in the sector. "It has been a fascinating experience overall; I am in a cohort amongst such inspiring, smart, driven, passionate women".

Since the start of the programme, they have secured approval from the energy regulator, Ofgem, for the product as one of only a handful of companies under the Energy Company Obligation (ECO3) Innovation scheme, triggering significant

commercial traction with utilities. Additionally, they have managed to close a successful seed funding round in August 2019 through angel investors (£520k EIS investment) followed by growing their core team by 50%.

"Our company was born from our passion for fighting Fuel Poverty and Climate Change. Ultimately, our mission is to end Fuel Poverty by bringing comfort to everyone and to protect people's health and the planet. We would like to see AirEx be deployed in millions of homes in the UK and beyond in the next decades – this is what success means to us." Currently, Agnes and her team are focusing on project delivery: installing our AirEx system into 400 properties as part of a large-scale demonstration programme, paid by their partner, EDF Energy. Next step is to secure another fundraising round which will help them grow the team and undertake a re-design for the manufacture process to prepare for volume sales.



“My company is solving a huge problem in healthcare using advanced computer vision technology with all of the associated technical, commercial, clinical and organisational challenges. The Women in Innovation Award has been instrumental in helping me to accelerate from prototype to product”.

ALEX HASLEHURST

Co-Founder and CTO of Vitru Health

Since founding Vitru in 2017, Alex and her team have been developing tools to assess and diagnose musculoskeletal health conditions. Musculoskeletal health is one of the most important aspects of health-related quality of life. Across the spectrum of musculoskeletal problems, from a patient with arthritis having a hip replacement to an athlete with cruciate ligament issues, accurate assessment is crucial to outcomes and patient experience.

Currently, technology does not help at all in this area of healthcare. Clinicians usually have to rely on their sight alone to assess their patients. “Our product, Vitru EVVA, takes leading clinical, biomechanics and motion capture technologies and makes them viable in everyday care”, Alex explains.

“We have the common challenges of any start-up company like hiring, fundraising, pricing strategy but as a digital health company we spend a huge amount of our time understanding clinical pathways and the needs of both patients and healthcare providers”. It is a challenge, but she believes it is also one of their biggest strengths and opportunities.

In 2019, Alex was one of the nine female entrepreneurs to receive 50,000 business funding and a package of bespoke support to help grow their business. “The Women in Innovation programme has been hugely influential for my company. Both the support and funding came at a crucial time for Vitru and were extremely important in getting our product from prototype to market which we did late last year.”

“I’ve always been very mission-driven”, she states. Millions of people suffer from musculoskeletal issues that could be massively reduced by providing clinicians and patients with accurate, sensitive diagnostic tools. Success to her is having a gold standard diagnostic tool available to every patient with arthritis, joint replacement surgery or just a twisted ankle. “We recently launched our product (November 2019) and right now we’re focused on growing as quickly as possible both in the UK and excitingly recently expanding to Europe and the US!”



“As a woman coming from a war zone and currently a mother of three, I have learnt to get over my fears by dreaming big. So, if you are dreaming big, dream bigger”.

DR FANYA ISMAIL

Founder and CEO of SGMA Sol-Gel Materials and Applications Ltd

Started in February 2017, SGMA operates in the food packaging industry. Its barrier coating for fibre-based packaging provides a complete solution to replace single-use plastics and eliminate the confusion among customers. The technology also fits into the recycling infrastructure of any country by providing a solution that is biodegradable, compostable and recyclable. The product is currently in the process of obtaining food contact certification in Europe and America.

The impact of plastic on the environment and marine life has caused heavy disruption and placed SGMA's technology in a unique position within the global packaging industry which

is worth more the \$410bn a year. One of the challenges for SGMA is that there is limited infrastructure in the UK for scaling up fibre-based technologies, with global regulations designed mainly around plastics. CEO Fanya Ismail added, "SGMA is nevertheless making good progress and we are due to receive the certification for food contact packaging before the end of this year."

Fanya is one of the nine women awarded the Women in Innovation 2019 Award, thus receiving funding and support. She remarked, "the programme was very helpful, especially the marketing coverage and media training sessions. The funding that enabled the food certification process has had a huge impact on our company".

Success for Fanya is to have a hand in saving the planet from the challenges posed by plastic pollution, harmful chemicals and widespread impact of microplastics. Next step for her innovative technology is to complete the commercialisation process and to successfully deliver the barrier coating product to the packaging market successfully. The company is committed to eliminating plastic in multiple sectors by providing practical and green solutions. So the journey continues...



“Innovation is about helping people and showing that tech can co-exist with the workforce. It can create new opportunities, grow businesses and bring more people into jobs”.

CINTIA KIMURA

Founder and COO of KG Protech

KG Protech provides the first platform to enable remote practical training for car technicians through fault simulations and online coaching using real cars as a training platform.

The automotive industry is evolving faster than ever. But unfortunately, the workforce due to the lack of qualified training is not prepared to deal with all these technologies. Today, less than 1% of all technicians in the UK are qualified to repair an electric vehicle. KG wants to change this scenario introducing the first remote practical training on demand for car technicians making technical training more affordable, accessible and borderless.

Cintia was awarded the Women in Innovation Award in 2019 and has received £50,000 business funding and a package of bespoke support

to help grow her business and boost the UK economy. “The programme taught me to inspire and be inspired. Throughout the programme, I met so many unbelievably talented, fierce, brave and courageous women I realised how my own perspective of women in the industry was distorted.”

Being part of the Women in Innovation programme shed light on the power of role models, of how they can impact the lives of people that face the same challenges, how little it takes to incentivise and help others, and how great is the impact on their lives. “Beyond all the knowledge gained from the workshops I attended, the most helpful aspect of the programme was the business advisor. Ciara Fitzgerald has kept a close eye on my progress and is helping me with

everything I need. I have no words to thank her for all the time and energy she has been dedicating to my progress.”

In the future, KG wants to be established in the European market as an innovation leader for automotive training devices by 2022. “The Next Step for KG is being the first platform to make online content and video interact with real cars for training delivery.” With KG, automotive training will no longer need training centres, engine rigs, mockups and instructors. “Enabling technicians all over the world will be able to access quality training with only our piece of hardware and access to the internet.”



“I will create THE TOOLS TO HELP PEOPLE PUSH THEIR CREATIVITY FURTHER, a much-needed creative revolution”.

DANIELA PAREDES FUENTES

Co-founder and Chief Customer Officer of Gravity Sketch

Daniela is the Co-founder and Chief Customer Officer of Gravity Sketch and her role is to make sure ideas turn into successful realities by placing the customer/user at the centre of everything they do. “I make sure we bridge science, design, and strategy to produce life-changing tools that will catapult design workflows into the next creative era”, she explains. Gravity Sketch aims to remove friction from the design workflow, enhance team collaboration, and ultimately make the process of creating an efficient and joyful one. From a Master’s degree project back in 2014, it was then launched in 2017 as the first VR Design software, positioning them thought leaders of the industry.

“For as long as we can remember 3D design tools have been difficult to learn and even harder to use, for one simple reason, you are translating 3D ideas and concepts into 2D representations of them”, she further explains. This back and forth

process takes time, energy and a lot are lost in translation, limiting the creative freedom and the process itself. Gravity sketch lowers the barriers to 3D literacy and changes the way 3D concepts are created and communicated. It was made by designers, for designers, it is an immersive 3D design software that allows to create, collaborate, and review in an entirely new way. The software targets multiple sectors including the automotive, entertainment and product design ones. Nevertheless, anyone requires communicating a 3D concept would benefit from using Gravity Sketch as a 3D creation and communication tool.

“When I heard about the award I immediately wanted to apply. Not only because I would get support as a woman entrepreneur but because this kind of initiatives push the needle and bring more women to the table and if there is anything I can do to help with that, I will do it”. Daniela is

one of the 2019 Women in Innovation Award holders and has received £50,000 business funding and a package of bespoke support to help grow her business. For her, the biggest take of the programme was being part of a community that was going or had gone through the same challenges as her as a female innovator, “to be able to have that “safe” space to talk about anything and be sure that everyone was there to help us was such a gratifying experience”.

Success for Gravity Sketch means to be the go-to platform for all things 3D when it comes to creation, collaboration and communication. “We are changing the design world; we are creating a revolution. I will leave a dent by pushing creativity to the next level and to generations to come.”



“Collaboration, communication and commitment, are the key to successful innovation. With a focus on these and the Women in Innovation 2019 Award, it has been amazing and we’ve roared into 2020 - my greatest hope is that someone I’ve met so far, or are yet to meet, is inspired to apply and progress their own innovation journey, and share that with me”.

DOLORES SANDERS

Founder and CIO of Total Control Pro Ltd

Total Control Pro is on a mission to empower global manufacturing and unleash its full potential. “Started in 2013 as legacy-based manufacturing software, we quickly determined that cloud-based solutions would be the most effective way of reaching all manufacturers, not just the large OEMs”. Today they are a fully cloud-based synchronised manufacturing software suite that offers both Affordability Accessibility and Adaptability to the manufacturing industry to develop and to deliver real-time information to those that make data-driven decisions.

Manufacturers are relatively slow to adopt new technologies, she admits. In addition, it’s an industry that is undergoing significant change and tightening of profit margins across the board, as manufacturing is needed closer to the source and has to respond to a demand-based customer requirement. Technology has to adapt to serve this industry and the industry or companies’ commitment to implement the technical changes

is limited. “We focus on rapid deployment to give clients quick wins, and then take them on a journey to discover the opportunities data has for their business.”

In 2016, Malcolm Harold from KTN invited them to exhibit at the Industry 4 Summit, where Dolores met Pauline Dawes, Women in Innovation 2016 Award holder. “She inspired me to apply, I saw that awards were open and inclusive to all women, not just bright young things, and decided I would be one of the next award winners there and then, resolve led to action and to success.”

Dolores wholeheartedly believes in the need for opportunities for women to be acknowledged in innovation and industry and applauds Innovate UK for the programme. “The cohort of award-winning women I am part of is incredible and very talented. We all have different business needs and are at different stages, which creates real challenges for the programme to offer all of us what’s needed.”

With the funding received through the award, Dolores brought her AI and benchmarking project to the centre of their R and D. The process of creating and delivering this, together with the mentors provided, has enabled the company to really grow. “We have expanded from 7 to 15 people over the last year and opened up some serious contracts. The award ultimately offered validation and confidence for myself and our business, with my colleagues and my customers.”

In five years’ time, “we will be the benchmark for new manufacturing technology, and provide our customers with the data they need to boost productivity and profitability.” Their values are Simplicity, Agility, Visionary, Integrity and Enrichment, and they have brought this to everything they do, for their staff, their clients, the industry and the UK.



“Women in Innovation has enabled a close peer network to form, resulting in significant sharing of learning and support from others going through similar challenges”.

DR DEBBIE WAKE

CEO and Clinical Lead of MyWay Digital Health

10% of the world population has Diabetes which can lead to blindness, heart attacks, strokes and amputations. These complications are entirely preventable through good self-management and early medical intervention but currently costs £2.5 trillion globally. The flagship product, MyDiabetesMyWay is a digital platform that integrates healthcare data, driving personalised automated advice, education, and support for people with diabetes. It is the only self-management platform to be scaled across an entire country in Scotland, has over 50,000 registrants and has won International awards (e.g. the European e-health adopters award). It improves health outcomes and saves money.

The idea originated in a project led by Dr Debbie Wake and Dr Scott Cunningham at the University of Dundee, in 2017, before being spun-out commercially. It now has more than 20 employees, growing contracts in NHS England and a pipeline in the US, Middle East and India. “Scaling

innovation in healthcare is hard, particularly in the UK with significant NHS budgetary constraints. Working with health data also brings challenges around data sharing and information governance, fortunately, an area we have significant expertise. With the rise in non-communicable diseases globally, there is however a massive need for transformative solutions. With the increasing use of mobile technology and digitisation of health records, there is a clear opportunity for low-cost data-driven solutions to transform care delivery and outcomes globally.”

Debbie Wake is one of nine female innovators to be awarded £50,000 as part of Innovate UK’s Women in Innovation Awards 2019. “The Women in Innovation programme has supported me in several areas including access to mentors, training on various subjects from marketing and PR to pitching and business development.” The programme also highlighted opportunities for further support through European and UK

funding networks and offered applications advice. “The Women in Innovation Award status has been a credibility boost personally and for MyWay Digital Health, raising our profile and increasing our exposure in the marketplace.” Women in Innovation has enabled them to retain jobs, notable a software developer, and project management support, and has funded part of Debbie’s University secondment arrangement. It has also helped them to achieve further funding through the GCRF Demonstrate Impact award.

MyWay Digital Health is a purpose-driven company aiming to impact on the lives of people with diabetes through scalable digital solutions, on a global scale. They are actively pursuing investment (£2-5m) and are also building a pipeline in overseas markets notably US/ Middle East and India in the hope to close their first international contract over the coming months. “We are keen to expand our offering beyond diabetes and are starting to develop this.”



“Women have such a unique intuition and empathy in problem solving; which are valuable qualities that make female-led businesses truly socially impactful and I’d love to see more women join me on the journey of creating a more inclusive world”.

SHEANA YU

CEO and Founder of Aergo

Hsin Hua (Sheana) Yu is the Founder and CEO of Aergo, a London based MedTech Startup founded in 2015. In just five years, they have raised funding to pilot their product, hired three new members to the team to support business, marketing, and engineering development.

Their first product is the world's first automated postural management seating system designed for wheelchair users of all age, shape and sizes. Aergo's postural support uses a network of pressure-sensitive air cells to continuously hug users into a healthy posture, which is vital to maintaining healthy digestion and respiration.

There are currently 1.2 million wheelchair users in the UK (Approximately 70 million globally) who spend on average eight hours in a seated position. Without adequate equipment to manage their sitting needs, they are prone to complexities such as worsen scoliosis (curvature of the spine) that leads to organ compression and pressure ulcers that can lead to complex infection. Therefore,

there is a clear need for a new hybrid solution to offer comprehensive care to the sitting needs of wheelchair users.

Sheana was awarded Innovate UK's Women in Innovation Award in 2019 and received £50,000 business funding and a package of bespoke support to help grow her business and boost the UK economy. "It's such a supportive and nurturing network, either peer to peer or mentor to mentee. The programme is an inspiring platform that has brought together successful and aspiring female leaders to exchange knowledge and experiences." The Women in Innovation Award not only helped her be more confident in her abilities as a leader and tech innovator but also helped raise her company's profile. It enabled her to promote their mission and vision to attract investment and high performers to join the team.

Aergo is currently finalising the design for manufacturing and setting up production. Aergo's long term strategy is to license its core air cell

technology to seat and mattress manufacturers. This way, Aergo's health impact will be expanded rapidly to a wide range of user groups. They have begun to work with leading wheelchair charity, Whizzkidz, to integrate Aergo's air cells into their State-of-the-Art wheelchair design. In parallel, they are mapping the postural changes of users throughout the day and implement machine learning algorithms to predict users' movements.

Success to her is "to have fulfilled Aergo's mission and vision - enabling everyone to live to their fullest potential and pain-free with inclusive technology. Where Aergo's innovation becomes adapted by major healthcare providers globally and become the go-to solution in managing posture and comfort". Esther, specialist physiotherapist admitted that "Aergo will have such a profound impact on the way [children] sit, and the way they engage with the world."

Innovate UK would like to thank everyone involved in the Women in Innovation programme since its launch in 2016.

We are excited about the next stage of the programme which we look forward to sharing with you.



Celebrating
**WOMEN IN
INNOVATION**