

INNOVATIVE HEALTHCARE SOLUTIONS: 3D PRINTING AND ADVANCED PROTOTYPING

Discover how 3D printing and advanced prototyping are revolutionising the healthcare industry.

22 February 2024

Locally-led Innovation Accelerators delivered in partnership with DSIT, Innovate UK and City Regions



Agenda

14:00 – Chair Welcome and Introductions with light refreshments

14:10 – Elevating Innovation: Inside the World-Class Design Factory

14:20 -Transforming Healthcare Innovation: Unleashing the Potential of the Accelerator

14:30 – Innovative Prototyping Solutions in Prosthetics: Bridging the Gap Between Design and Functionality

14:40 – Q&A Panel discussion

15:00 – Elsewhere in the Innovation Alliance / WMHTC

15:15 – Round table / Networking

15:30 – Tour of Design Factory, 3D Printing and Advanced Prototyping facilities: Aston Institute of Photonic Technologies, New Design Factory, Lower ground manufacturing and gain analysis lab

16:15 – Meeting Close and partnership opportunities



Welcome from the Chair



Elevating Innovation: Inside the World-Class Design Factory

-
Paul Gretton





Aston - Design Factory Birmingham

Slide deck



Design Factory Birmingham

- Design Factory Birmingham (DFB) hosted at Aston University is a state-of-the-art facility designed to inspire and facilitate innovation and design. It is a unique space that brings together students, staff, industry partners, and entrepreneurs to collaborate, learn, and create new products that solve real-world problems.
- DFB operates as a commercial entity providing consultancy services and end-to-end solutions to its clients, including: design thinking, software development, innovation, prototyping, data services, advanced manufacturing, testing, business incubation and production.
- DFB will have dedicated staff located on-campus with its own identity. It will host Aston students for placements and projects working on client-facing projects.



What is “Design Factory” Global Network

Design Factory Global Network (DFGN): 37 innovation hubs, 25 countries, 5 continents.

Mission: to create change in the world of learning and research through passion-based culture and effective problem-solving.

Shared understanding and common ways of working enable collaboration and fosters *radical innovation*.

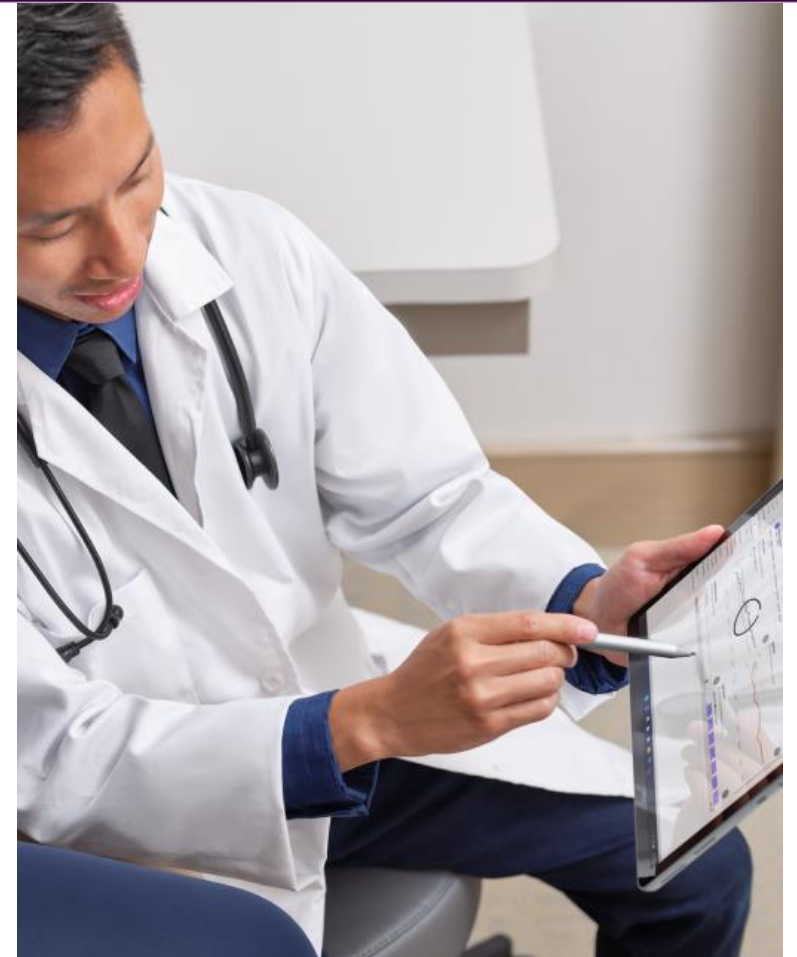
DFGN currently extends to almost all corners of the world with partners in five different continents. All Design Factories are created to drive change in the local context, whether it is hosted by a university or a research institution.

[Website](#)

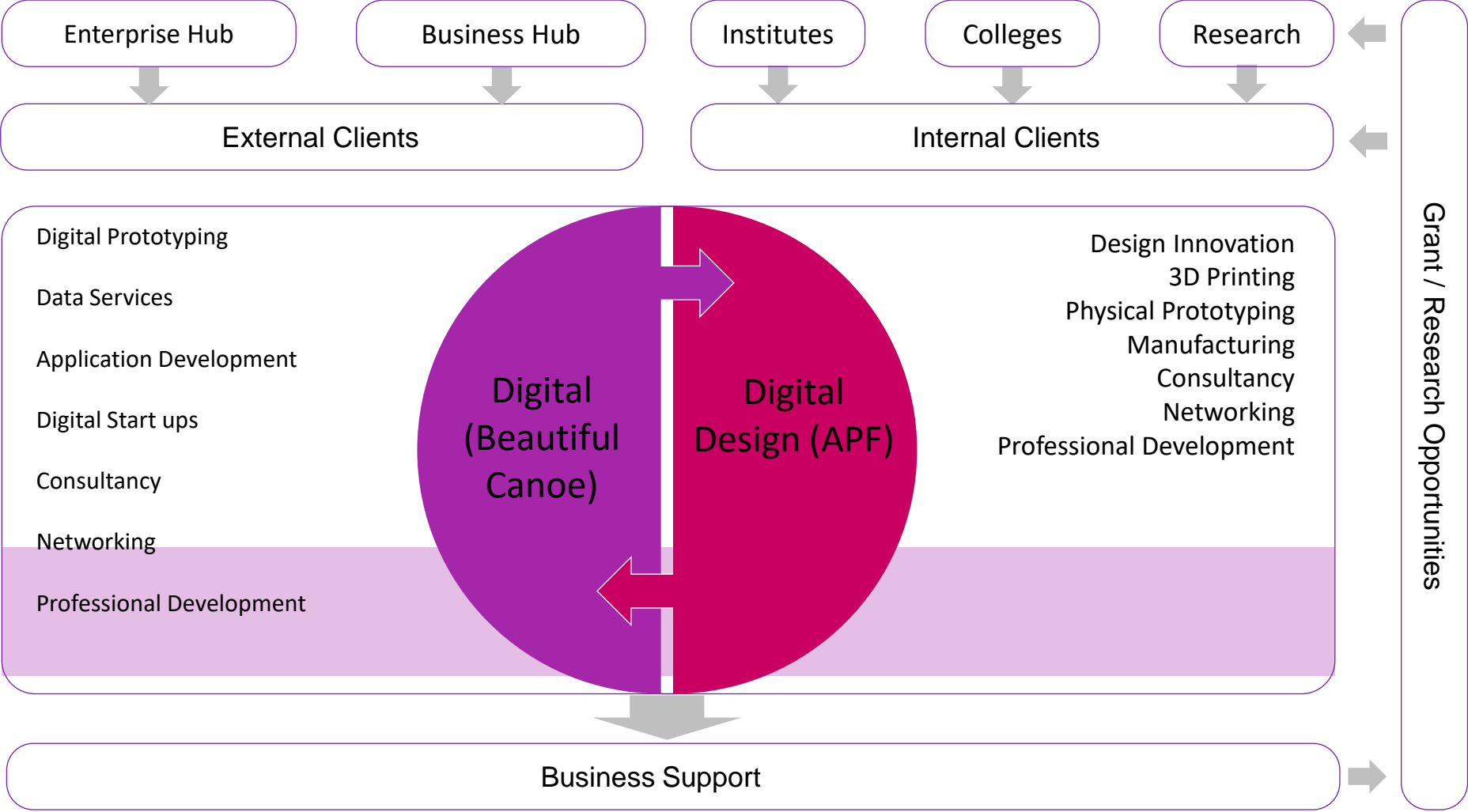


Design Factory Birmingham -Vision

- To work as part of the DF Global Network but to offer support across the Midlands
- Works alongside the Business Hub / Enterprise Hub and other partners to providing the physical and Design and Digital expertise needed to realise business ambitions
- Independently supported small team to interface with business while employing students to support project work, giving them real world experience
- Drives a bold new creative and digital innovation mindset throughout UK business and University's
- Offer multi-disciplinary by design and be open to business
- Be a link between students and business, and business and research



DFB Vision Pipeline



Birmingham needs a base to strengthen the economy which bridges the divide between business and academia. Design Factory creates an opportunity to innovate, empower students and business to work together

To creating a world leading space for digital and design innovation providing a focused offering in:

Digital Support

Data Science

AI

Machine Learning

Software Engineering

Communications and Cybersecurity

Data analytics

App Development

• Digital Design Support

- Digital Design

- Prototyping

Finite element analysis and Topology optimization of parts

- Design for manufacture support

- Testing of materials where required

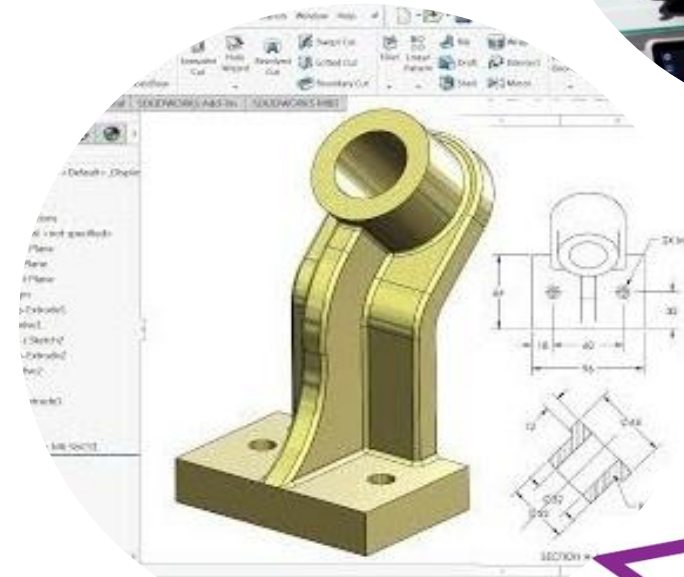
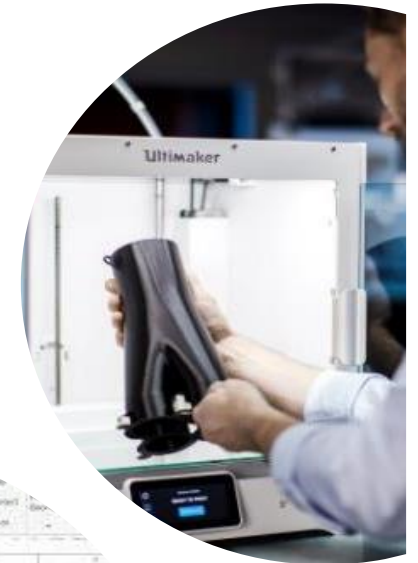
- Consultancy

- Reverse engineering

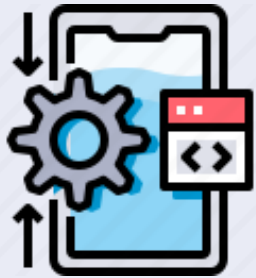


- **Services**

- Digital Design help and support using “Solidworks” and other CAD design packages
- Prototyping using additive manufacture and 3D Printers
- Finite element analysis of parts
- Topology optimization
- Design for manufacture support
- Testing of materials where required
- Consultancy on designs
- Consultancy on Additive Manufacture
- Reverse engineering



DFB Digital : Services



App Development



Software Engineering



Data Services



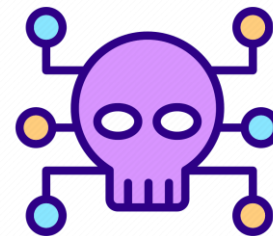
Web Development



Cloud Based Systems



Artificial Intelligence



Cybersecurity

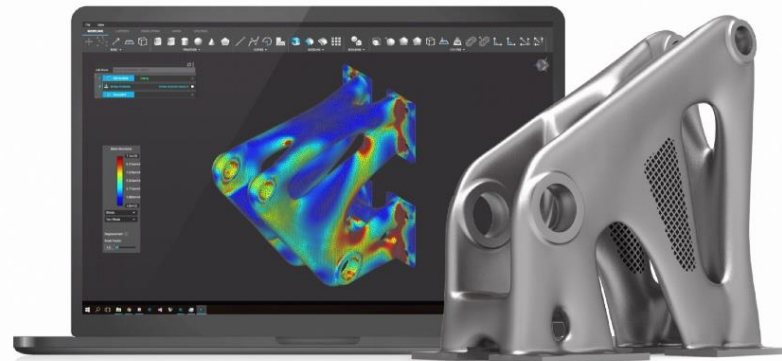


Digital Consulting

Design Factory: Mission

Our mission is to:

- Bring technical innovation to our clients through a range of services.
- Improve relationships between Business and University's
- Improve the professional digital and design skills of our students.
- Bring employment opportunities for both our clients and our students.



Transforming Healthcare Innovation: Unleashing the Potential of the Accelerator

—

Dr Antonio Fratini





Innovative Healthcare Solutions: 3D printing and advanced prototyping





West Midlands Health
Tech Innovation Accelerator

Locally-led Innovation Accelerators delivered in partnership with DSIT, Innovate UK and City Regions



What is the WMHTIA?

A government-funded project focused on helping companies drive their innovations towards market success.

18 partners across academia, industry and NHS bringing their expertise under one cohesive programme.

What does the WMHTIA do?

The WMHTIA provides access to services and expertise that address challenges in health tech translation.

A single access point, all-in-one support programme that tailors its support to every engaged innovator's needs.

Delivery Organisations



Our contribution



www.aston.ac.uk

Aston University

We are working with partners to address regional NHS needs and challenges within the health-tech and med-tech sectors.

We are supporting the programme by:

- launching a Midlands branch of SPARK
- assisting and advancing medical device prototyping

We support companies and innovators as they navigate the complexities of the healthcare landscape

Preclinical accelerator



SPARK
THE MIDLANDS

www.sparkthemidlands.co.uk

Spark The Midlands

is the first UK branch of Stanford's prestigious SPARK programme which has a mission to bridge the gap between cutting-edge research and practical application in patient care. The initiative provides expert knowledge and skills in drug and diagnostic development, as well as connecting researchers with crucial sources of funding to transform research discoveries from bench to the bedside.

Medical Device Prototyping



Engineering
for Health

www.aston.ac.uk

Expert staff collaborate with regional stakeholders to support and advance medical device prototyping.

We have expertise in segmentation and anatomical modelling, applied artificial intelligence, as well as both hardware and software design for medical devices, enhances the journey from innovation to real-world application.

Aston creates tailored research teams around the specific focus, while providing access to advanced analysis tools for medical data: new insights from physiological measurements ECG, EEG, EMG, and imaging modalities OCT, Confocal imaging, CT, and MRI, and additional funding opportunities to explore.



wmhtia.com

Get in touch
with us

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West Midlands Health
Tech Innovation
Accelerator — WMHTIA



@WMHTIA

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Innovative Prototyping Solutions in Prosthetics: Bridging the Gap Between Design and Functionality

-

Steve May-Russell, CEO,
Smallfry



Q&A Panel Discussion

Elsewhere in the Innovation Alliance

-

Pam Waddell



Innovation Alliance for the West Midlands*

A bottom-up, independent Alliance of diverse organisations active or interested in (science and technology based) innovation across the WM region

Our two core aims:

- Build and maintain a thriving innovation ecosystem
- Stimulate and catalyse a pipeline of support innovation activity

* Established Jan 2018, building on BSC partnership since 2007



West Midlands Innovation Programme

A £2.9m project providing innovative specialists, embedded in the innovation ecosystem, to identify barriers to innovative business growth. A flexible fund enables cross-sector pilot projects to fill these gaps.

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Innovate UK



West Midlands Combined Authority



Three Pillars

1. **Sector specific and sector-agnostic innovation networks and events** – to act as gateways, drawing in stakeholders from the private, public and academic sectors to drive partnerships and collaborative opportunities.

NEW: Focussing on inclusive Innovation Networks with CPC/ Diatomic Project

1. **A 'virtual innovation team' 10 sector specific innovation experts** – providing business support and looking for cross-sector innovation opportunities
2. **Piloting and scaling demand-led innovation interventions/projects** – we find the market opportunity then support businesses to respond.

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Innovate
UK



MEET THE CORE TEAM



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IJWM DIRECTOR

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VALENTINA BARKER

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EVENTS & PARTNERSHIP OFFICER

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Meet the Virtual Innovation Team!



Andrew Mair



Speak to me about: Aerospace



Rachel Eade



Speak to me about: Rail



Naomi Nash



Speak to me about: Digital

Meet the Virtual Innovation Team!



Louis Gyoh



Speak to me about: Construction



Beck Collins



Speak to me about: Low Carbon



Tim Luft



Speak to me about: Creative

Meet the Virtual Innovation Team!



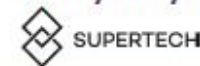
Emma Yeap



Speak to me about: Health



Hilary Smyth-Allen



Speak to me about: Modern Services



Gareth Thomas



Speak to me about: Manufacturing



Chris Lane



Speak to me about: Mobility

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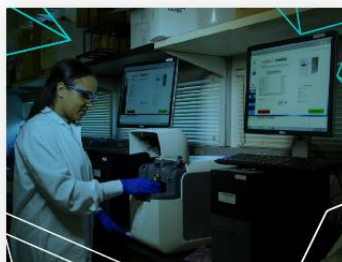




INNOVATION ALLIANCE WORKING GROUPS & EVENTS



AI & FUTURE TECH FORUM



INNOVATIVE HEALTH WORKING GROUP



INNOVATIVE ZERO CARBON WORKING GROUP



INNOVATIVE MANUFACTURING WORKING GROUP



INNOVATIVE TRANSPORT WORKING GROUP



CYBER WORKING GROUP



VENTUREFEST WEST MIDLANDS



INNOVATION SUPPORT FORUM

Upcoming events:

- ITWG and IZCWG part of Launch of Clean Futures Catalyst, 28th February
- AI and Future Tech Forum – AI takeover of 1 Mill Street, Leamington, 6th March
- ITWG at Tysley Energy Park, 3rd April

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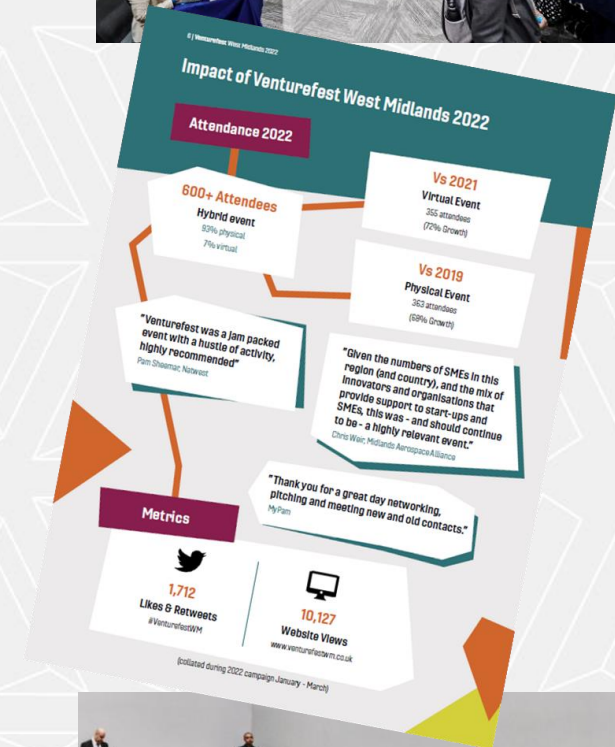
Innovate UK

West Midlands Combined Authority



Venturefest West Midlands

- Connects and informs innovators, entrepreneurs, early and growth-stage businesses, investors, universities and support organisations
- Annual event in Birmingham with 600+ attendees: 21st March 2024 – keynotes, panels, pitching competition, exhibition, networking:
 - Stands available
 - Registration open www.venturefestwm.co.uk/register
- Venturefest Mobile Hubs – shorter events targeting local ecosystems:
 - So far BCIMO, Dudley (supply chain innovation), Coventry University (immersive technology)
 - 16th May, Legacy Centre of Excellence, Lozells/ Newtown/ Aston (Concept to Manufacture)
 - 12th June, Wolverhampton University (Green Innovation Corridor)
 - July (tbc), Sandwell (Digitisation of business)



How to get involved:

- Find out more on IAWM/ WMIP and register for newsletters and networks <https://innovationwm.co.uk/>
- Attend Venturefest WM 2024 <https://www.venturefestwm.co.uk/>

Roundtable Discussion

Tour of Design Factory, 3D Printing and Advanced Prototyping facilities:

Aston Institute of Photonic Technologies,
New Design Factory, Lower ground
manufacturing and gain analysis lab



Please take your time to complete our short feedback form. Your ideas are vital and will help us ensure future events align with your expectations.

Innovative Health Working Group
Evaluation Form 22 February 2024

