

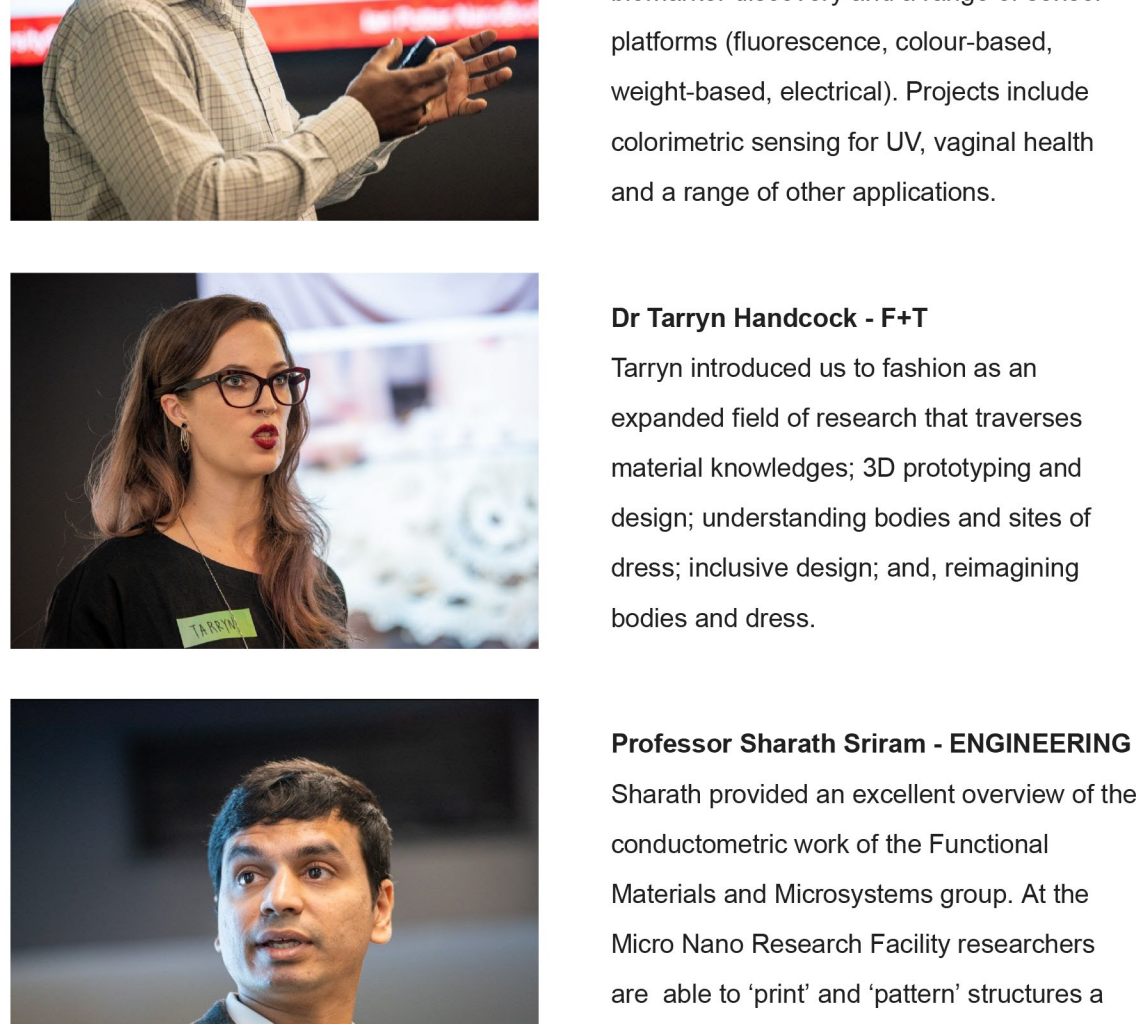
Welcome to the December edition of the W+SN Newsletter!

In this edition we report on the very successful Building New Languages event on 22 November. At the event we had 10 lightning-fast talks from across the network and developed a complete mapping of the W+SN ecosystem. We'll also cover the making of the Megatrends Map that captures all the megatrends we collectively identified at the W+SN launch. The mapping highlights 3 key areas of focus: health and wellbeing; data; and, sustainability.

Look forward to seeing you for our industry launch in 2020 - stay tuned for details!

Building New Languages Event

On Friday 22 November we hosted the Building New Languages event at the RMIT Activator. The event brought together people from across the network to connect and share stories. In the lightning-fast talks experts from sensor development through to fashion design were challenged to share their research, ideas, technologies and labs - in 7 minutes! The talks gave the audience an extraordinary view into the diverse practices of our members and helped to foreground potential areas of crossover and collaboration. Then the whole network spent one hour creating a giant map of the W+SN research domains, skills/capabilities and partnerships using Tactile Tools.



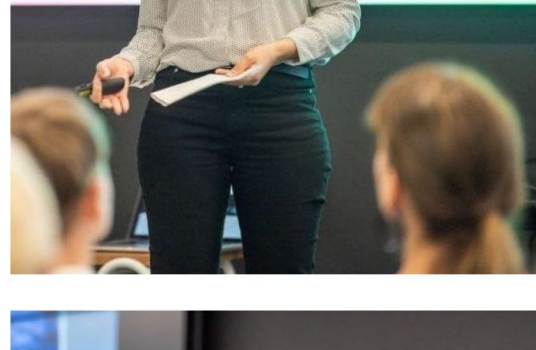
10 Lightning-Fast talks from across the W+SN

Following is a short account of the work shared by the researchers at Building New Languages. We encourage you to reach out to these research leaders to learn more about their extraordinary work. You'll find email links on their W+SN bio pages: <https://www.ws-network.com.au/>



Professor Vipul Bansal - SCIENCE

Vipul shared the exciting work he and his team are doing in the Ian Potter NanoBioSensing Facility. They are working in biomarker discovery and a range of sensor platforms (fluorescence, colour-based, weight-based, electrical). Projects include colorimetric sensing for UV, vaginal health and a range of other applications.



Dr Tarryn Handcock - F+T

Tarryn introduced us to fashion as an expanded field of research that traverses material knowledges; 3D prototyping and design; understanding bodies and sites of dress; inclusive design; and, reimagining bodies and dress.



Professor Sharath Sriram - ENGINEERING

Sharath provided an excellent overview of the conductometric work of the Functional Materials and Microsystems group. At the Micro Nano Research Facility researchers are able to 'print' and 'pattern' structures a few atoms in size! Sharath reported on their exciting projects in stretchable sensors for healthcare, aged care and environmental monitoring.



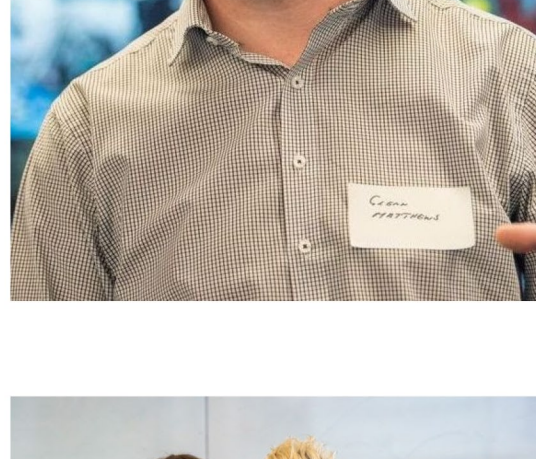
Professor Margaret Lech - ENGINEERING

Margaret engaged the crowd with her explanation of the role of wearable sensors in AI, speech and image processing, and decision making. Her projects include the detection of calls for help (sound, urban safety monitoring); prediction of trust in politicians (speech, twitter, and images); and, diagnosis and prediction of clinical depression (speech).



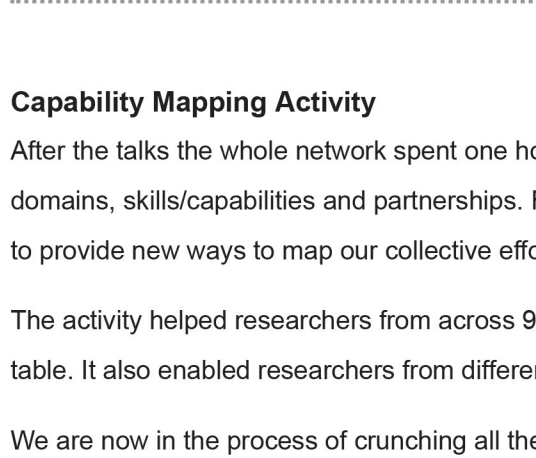
Dr Jacinthe Flore - GUS

Jacinthe highlighted the critical importance of understanding the ethical implications of our technologies. Her research has analysed the ethical, societal and emotional impacts of a range of wearable technologies, including devices to treat depression and sensors to detect and modify emotion. She exposed us to some of the critical thinking approaches we need to bring to our technology developments as researchers.



Professor Olga Troynikov - ENGINEERING

Olga reported on her many exciting projects across textile materials and apparel systems, with industry partners from sport and exercise science, protection, health and safety. Her projects in functional materials included textile interfaces for sleep monitoring; biosignal detection for construction workers; and, thermo-physiological performance of Stop-Go sports apparel for winter sports.



Dr Olga Kokshagina - BUSINESS

Olga presented a unique model of collaboration at the intersection of innovation, management and entrepreneurship; engineering; and, design as a systematic process. She discussed Phenomena, Processes, Contingencies, Interventions and Organisational Structures and described her toolkit, which includes action based research, ethnography and semantic analysis. Her research targets cancer, climate change, energy transition and food scarcity.



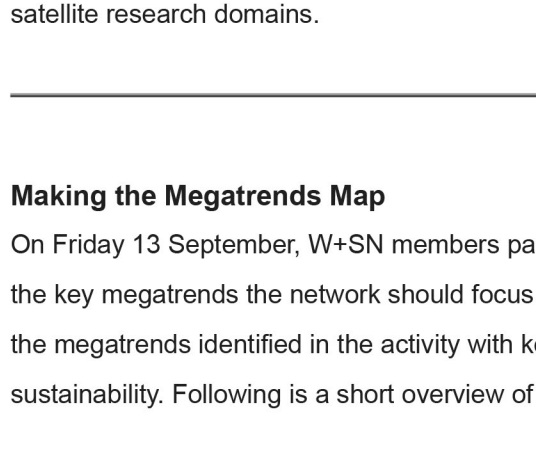
Associate Professor Flora Salim and Dr Wei Shao - SCIENCE

We discussed the cutting edge work of the Context Recognition and Urban Intelligence (CRUISE) group and the Centre for Information Discovery and Data Analytics (CIDD). CIDD's work traverses time-series data mining, context-aware situational awareness and user behaviour analysis. They are working in the areas of Smart Cities/Health/Buildings/Farm; Agritech; Activity recognition and Waste Analysis.



Dr Glenn Matthews - ENGINEERING

Glenn gave us a great virtual tour of the Surface Mount Device (SMD) Laboratory where they fabricate Printed-Circuit Board (PCBs) – including flexible substrates and associated hardware. The lab allows researchers to take conceptual designs to functional prototype stage using CAD (Altium) to develop schematics and PCBs for fabrication. The facility also provides pick and place machinery and automatic soldering via a 7-stage reflow oven.



Dr Jude Glover + Dr Leah Heiss - (DESIGN)

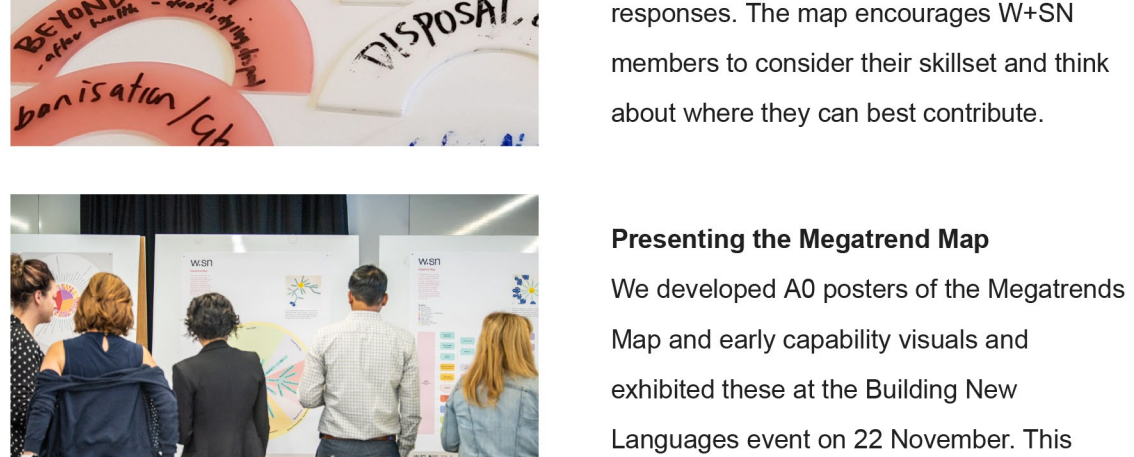
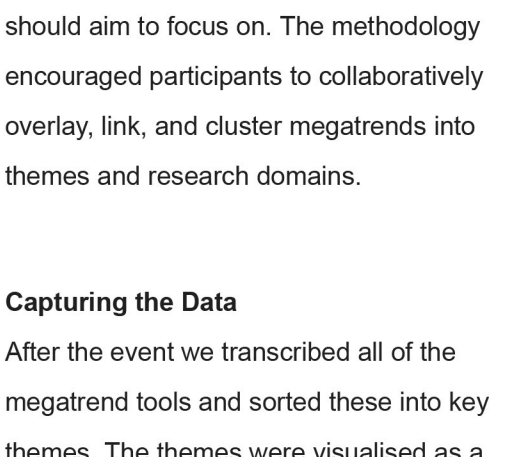
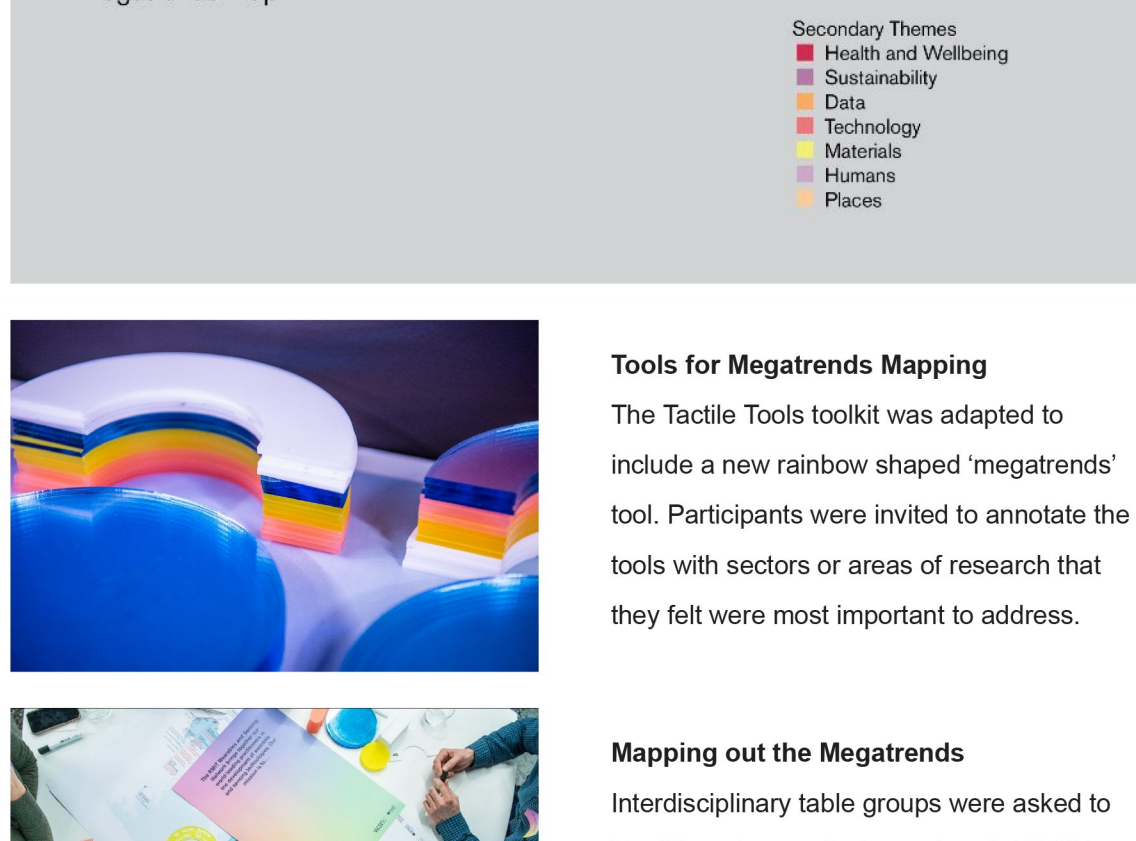
Jude and Leah provided an overview of design and creative practice disciplines. They divided this into 6 areas: 3D product development, Innovation, Sustainability and social innovation e.g. Food Waste; Communication: Visualisation, strategy, experience; Digital: Web, AI, VR, data viz, games; Human centred design: service design, jewellery methods; and, Art and Jewellery: Digital processes and hand making.

Capability Mapping Activity

After the talks the whole network spent one hour creating a giant map of the W+SN research domains, skills/capabilities and partnerships. For the activity Leah adapted her Tactile Tools toolkit to provide new ways to map our collective efforts.

The activity helped researchers from across 9 Schools to bring their diverse ideas and skills to the table. It also enabled researchers from different areas to identify areas of overlap and connection. We are now in the process of crunching all the data from the mapping and will work on a visualisation to capture our collective expertise. There will definitely be gaps in the map and we'll send it out for feedback in January.

For an example of the process of going from physical mapping with tools to data graphic see the story below on Making the Megatrends Map.



Skills & Capabilities
What are the abilities that enable us to practice in this research domain?

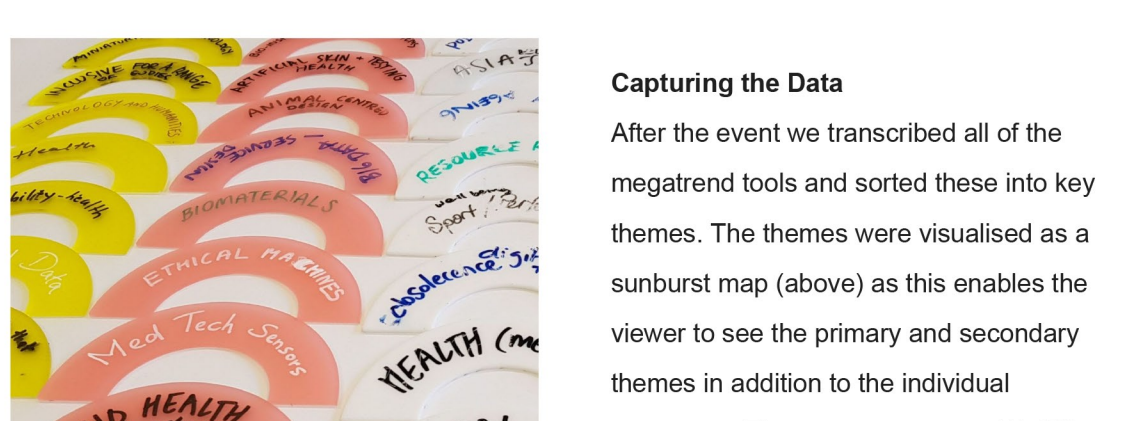
Tactile Tools for Capability Mapping

For the Capability Map Leah adapted her Tactile Tools toolkit to include new tools - the blue sticks are research domains, the yellow leaves are skills and capabilities and the pink puzzle pieces are partnerships. White sticks were used as 'spacers' that could either be connectors or links to satellite research domains.

Making the Megatrends Map

On Friday 13 September, W+SN members participated in a co-design activity to identify and map the key megatrends the network should focus on. The following diagram provides a snapshot of the megatrends identified in the activity with key areas of health and wellbeing, data and sustainability. Following is a short overview of the process for creating this visualisation.

The Megatrends visualisation was a collaboration with Ally Crimp - a designer and Master of Design Futures student who is exploring data humanism and participatory approaches to visualising the complexity of our data-driven world.



Tools for Megatrends Mapping
The Tactile Tools toolkit was adapted to include a new rainbow shaped 'megatrends' tool. Participants were invited to annotate the tools with sectors or areas of research that they felt were most important to address.

Mapping out the Megatrends
Interdisciplinary table groups were asked to identify and map what megatrends W+SN should aim to focus on. The methodology encouraged participants to collaboratively overlay, link, and cluster megatrends into themes and research domains.

Capturing the Data
After the event we transcribed all of the megatrend tools and sorted these into key themes. The themes were visualised as a sunburst map (above) as this enables the viewer to see the primary and secondary themes in addition to the individual responses. The map encourages W+SN members to consider their skillset and think about where they can best contribute.

Presenting the Megatrend Map
We developed A0 posters of the Megatrends Map and early capability visuals and exhibited these at the Building New Languages event on 22 November. This provided participants with an opportunity to critique and respond to the work.

Thank you to Professor Swee Mak, the Strategic Capability Development Fund and the following ECPs for ongoing support: Design and Creative Practice, Social Change, Advanced Materials, Biomedical and Health Innovation and Information and Systems (Engineering)

For more information about W+SN please contact Leah Heiss or Jude Glover
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For any enquiries about the Tactile Tools methodology and toolkit please contact Leah.

Have an excellent Christmas and see you all in 2020!
Leah and Jude