

SIG Reports (8): Cognitive Design

What is the name of the person completing this form?

Laura Hay

What are the name (s) of SIG leaders?

Laura Hay – University of Strathclyde
Alex Duffy – University of Strathclyde
Philip Cash – Technical University of Denmark

What are the name (s) of SIG steering committee?

Anna Abraham – University of Georgia
Jonathan Cagan – Carnegie Mellon University
John Gero – University of North Carolina at Charlotte
Kosa Goucher-Lambert – UC Berkeley
Larry Leifer – Stanford University
Tripp Shealy – Virginia Tech

What are the SIG goals and objectives?

A diverse range of teams and individuals share interests in cognitive and neuroscientific research on design globally. These include design researchers, as well as cognitive scientists studying design-related topics (e.g., creativity, aesthetics, and user perception), and span all career stages from PhD to post-doc and through to academic. This SIG brings these people together under the umbrella of ‘cognitive design science’ (CDS): the scientific study of the designing mind and brain.

The SIG has four key goals:

- 1) To establish a forum for researchers in the CDS area that will support sustained discussion, networking, and collaboration as the field evolves.
- 2) To develop, through this forum, a joint and continually evolving research framework and agenda for CDS.
- 3) To establish support for the training and development needs of CDS researchers.

These goals are achieved through the following major objectives:

- Run meetings and networking activities that bring together design cognition/neurocognition researchers and cognitive scientists with interests in design-related phenomena.
- Run collaborative workshops involving researchers from all career stages to facilitate the identification of the key questions, challenges, directions, approaches, and applications for CDS research.
- Through the above activities, identify the key development needs of CDS researchers and curate resources to support these.

Who are the key members of the SIG to be mentioned? (beyond SIG Leaders and Steering Committee)

None specifically as of yet.

What activities has the SIG been engaged in?

- | | |
|------------------------|-----------|
| 1. Conference | [08 / 17] |
| 2. Workshop | [14 / 17] |
| 3. Summer school | [04 / 17] |
| 4. Young members | [03 / 17] |
| 5. Planning meeting | [11 / 17] |
| 6. Web meeting | [12 / 17] |
| 7. Webcast/web seminar | [09 / 17] |

The answers above indicate how many of the 17 SIGs (inc. Africa Design) participated in each activity. However, the answers do not specify what activities the SIG in this report participated in specifically.

Please describe your recent activities and successes:

Building on an initial workshop conducted at DCC in 2020 (focused on developing a roadmap for design cognition research), the SIG ran an international workshop at ICED 21 with the aim of developing a complementary roadmap for design neurocognition research. There were 41 participants. The main output was a Miro board outlining four potential roadmaps for design neurocognition research (reflecting the perspectives of the four discussion groups in the workshop), covering challenges, purposes, and impacts in the short, medium, and long term. The event, key conclusions, and outputs are documented in a workshop report.

Work is currently underway to formalise a joint roadmap for Cognitive Design Science (CDS), based on the outputs from the DCC 20 (cognition) and ICED 21 (neurocognition) workshops and taking into account the varied views of the community members who participated. The roadmap will be visualised and published on the SIG website in the coming months and will form the basis of (and is already driving) future SIG activities (see next section).

The SIG leaders have prepared and submitted two workshop proposals in 2021-22, both were accepted. The workshops address different focus areas identified in the CDS roadmap (see next section for details on event plans):

- 1) DESIGN 22 workshop will explore the impacts and applications of neurocognition research for design practice.
- 2) CIRP Design 22 workshop will explore cognition in team/collaborative design settings, i.e. moving beyond the studies of individual designers that currently dominate the field.

A new collaborative relationship has been established between the CDS SIG and the Collaborative Design (CD) SIG. The CIRP Design 22 workshop was developed and will be run in collaboration with the two SIGs, with a view to identifying further opportunities for collaboration and networking between the communities in the longer term.

Finally, the SIG leaders participated in the Design Society's Chat Room webinar series over the summer to publicise the SIG and its activities to Design Society members.

The SIG membership has grown from 14 to 45 (excluding committee members) in 2021-22.

Has the SIG made any publications in the last year?

Reports from the DCC 20 and ICED 21 workshops have been produced and will be uploaded to the SIG website.

Does the SIG have a financial/business report?

No.

What are the SIGs plans for the next year?

The joint roadmap emerging from the workshops completed so far will be made available to all SIG members on the website in the coming months. Plans for the next year centre on facilitating community dialogue and networking around the key focus areas emerging from the roadmap, including a series of short papers reflecting the views and research of SIG members.

Three key events are currently planned:

- 1) Joint workshop with the Collaborative Design SIG at CIRP Design 22 (March 22). The event will explore questions around cognition in collaborative design teams, relating to a need for more work on team cognition identified by the community through the road mapping workshops. This event will also publicise the SIG and the Design Society within the CIRP community, with a view to encouraging membership.
- 2) Workshop at DESIGN 22 (May 22). The event will explore questions around the impact and applications of neurocognition research for design practice, again relating to challenges in this area identified by the community through road mapping. Short papers will be invited from SIG members and published as a collection on the SIG website along with other workshop outputs.
- 3) Workshop at DCC 22 (July 22). A proposal for this event is currently in development, and (if accepted) will adopt a similar format to the DESIGN 22 workshop but centring on a different CDS focus area. Again, the aim will be to produce a collection of short papers from SIG members along with other outputs.

A key focus area emerging from the roadmap is the need for cross-disciplinary interaction and learning between the CDS community and related fields, both within and outside the design domain. In addition to continued development of the relationship with the CD SIG, we will explore opportunities for an international event later in 2022/23 bringing together researchers from design, cognitive neuroscience, and psychology for the exchange of ideas and learning (e.g. an online seminar or workshop outside of the design conference calendar). This will be supported by existing connections to these communities (e.g. via Prof. Anna Abraham, a cognitive neuroscientist on the SIG steering committee).

Based on the outcomes of these planned activities, we will identify what next steps and outputs would be of most benefit to the SIG community (e.g. a special issue/edited book on key topics, collaborative research proposals between members, etc.).

Is there any further support the DS can provide for your SIG?

Not at the moment.

Any other information you would like to share?

No.

Have you recently updated your SIG website?

Yes, the website is updated as required e.g., with news and events.

Did you know you can apply for funding using the SIG fund request form available on the DS Website?

Yes.

Do you have a photo of a recent members event? (Paste URL link)

No