

# Conference Program

2023

## Big Team Science Conference

hosted virtually, October 23-25

<https://bigteamscienceconference.github.io>

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## Welcome to the 2023 Big Team Science Conference!

The goal of this three-day virtual conference is to bring together a multidisciplinary group of researchers, funders, and stakeholders to discuss advancements, challenges, and future opportunities related to big team science.

### Conference Format

The conference will be held fully virtually using the Zoom platform. Sessions will be recorded by default and made available to registered attendees, at the discretion of presenters and conference organizers.

### Code of Conduct & Meeting Rules

The Big Team Science Conference (BTSCON) aims to provide a harassment-free event experience for everyone, regardless of gender, gender identity, gender expression, race, ethnicity, caste, national origin, citizen status, age, sexual orientation, disability, appearance, body size, religion, socioeconomic status, other group status, or their intersection. We do not tolerate harassment of event participants in any form. Event

participants violating these rules may be sanctioned, including being expelled without a refund. The full Event Code of Conduct and meeting rules are available [here](#). In short:

- Session leaders are granted authority to use their judgment to confront, warn, and/or remove participants who are being disruptive or otherwise potentially in violation of the code of conduct.
- Participants agree to not share links to sessions and collaborative work during the session (e.g., Zoom, Google docs), and they agree to avoid recording or photographing sessions without first alerting all participants.

(Meeting Rules adapted from [SIPS](#))

## Accessibility

We are striving to make the Big Team Science Conference as accessible as possible. Following best practices in accessibility and inclusivity for all attendees, the expectation is that presenters will upload accessible copies of their presentation and materials (i.e., slides) to their landing page prior to their presentation time.

Here is a [guide to making accessible PDFs](#).

Here is a [guide to making accessible presentations](#).

Please visit the [Accessibility](#) page of our website for more information.

## People

### Organizers

- [Heidi Baumgartner](#), Stanford University, US - ManyBabies
- [Nicholas Coles](#), Stanford University, US - Psychological Science Accelerator
- [Drew Altschul](#), University of Edinburgh, UK - ManyPrimates
- [Julia Espinosa](#), Harvard University, US - ManyDogs

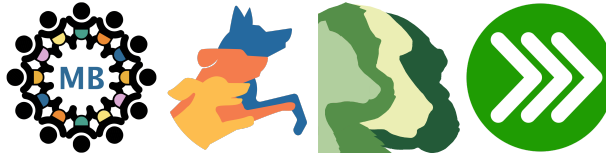
### Accessibility Consultant

- [Liz Hare](#), ManyDogs

### Program Committee

- [Haixin Dang](#), Philosophy of Science, University of Nebraska, US

- [ManyBabies](#), [ManyDogs](#), [ManyPrimates](#), [Psychological Science Accelerator](#)



*\* Session times subject to change*

| Monday 23 October                   |                                                                                                                                                                                             |         |           |      |                    |           |                 |              |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------|------|--------------------|-----------|-----------------|--------------|
|                                     | FORMATS:                                                                                                                                                                                    | Keynote | Symposium | Talk | Panel/<br>Workshop | Hackathon | Lightning Talks | Unconference |
| <a href="#">Time zone converter</a> | Block 1 (13:45-18:00 UTC)                                                                                                                                                                   |         |           |      |                    |           |                 |              |
| UTC                                 | A                                                                                                                                                                                           |         |           |      | B                  |           |                 |              |
| 13:45                               | [1] OPENING REMARKS                                                                                                                                                                         |         |           |      |                    |           |                 |              |
| 14:00                               | [2] KEYNOTE: (14:00-15:00)<br><b>Madalina Vlasceanu</b><br>Global collaborations improve the impact of behavioral science:<br>Examples from a manylabs-megastudy to increase climate action |         |           |      |                    |           |                 |              |
| 14:15                               |                                                                                                                                                                                             |         |           |      |                    |           |                 |              |
| 14:30                               |                                                                                                                                                                                             |         |           |      |                    |           |                 |              |

|       |                                                                                                                                                                                |                                                                                                          |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| 14:45 |                                                                                                                                                                                |                                                                                                          |
| 15:00 | <div>[3] FEATURED SYMPOSIUM:<br/>Open Innovation in Science (OIS): How open and collaborative practices in science influence scientific productivity and societal impact</div> |                                                                                                          |
| 15:15 |                                                                                                                                                                                |                                                                                                          |
| 15:30 |                                                                                                                                                                                |                                                                                                          |
| 15:45 |                                                                                                                                                                                |                                                                                                          |
| 16:00 |                                                                                                                                                                                |                                                                                                          |
| 16:15 | <div>[4A] PhyloPsy: A new resource for phylogenetic comparative cognition</div>                                                                                                | <div>[4B] HACKATHON:<br/>Managing Big Team Science II:<br/>Continuation of lessons learned sharing</div> |
| 16:30 | <div>[5A] A multi-lab EEG replication and extension of “Tagging the neural entrainment to beat and meter”</div>                                                                |                                                                                                          |
| 16:45 |                                                                                                                                                                                |                                                                                                          |
| 17:00 | <div>[6A] Collaborating for the Advancement of Interdisciplinary Research in Benign Urology (CAIRIBU)</div>                                                                    |                                                                                                          |
| 17:15 |                                                                                                                                                                                |                                                                                                          |
| 17:30 | <div>[7] FEATURED TALK:<br/>The 2023 EPiC Challenge: Crowdsourced development of machine learning models designed to predict core affective experiences from physiology</div>  |                                                                                                          |
| 17:45 |                                                                                                                                                                                |                                                                                                          |
|       | END OF DAY 1                                                                                                                                                                   |                                                                                                          |

|                                         |                                                                                                                                               |         |           |      |                    |           |                 |              |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------|------|--------------------|-----------|-----------------|--------------|
|                                         | Tuesday 24 October                                                                                                                            |         |           |      |                    |           |                 |              |
|                                         | FORMATS:                                                                                                                                      | Keynote | Symposium | Talk | Panel/<br>Workshop | Hackathon | Lightning Talks | Unconference |
| <a href="#">Time zone<br/>converter</a> | Block 2 (10:00-14:00 UTC)                                                                                                                     |         |           |      |                    |           |                 |              |
| UTC                                     | A                                                                                                                                             |         |           |      | B                  |           |                 |              |
| 10:00                                   | <div>[8] KEYNOTE: (10:00-11:00)</div> <div>Marcus Munafo</div> <div>Collaborative approaches to improving research culture and practice</div> |         |           |      |                    |           |                 |              |
| 10:15                                   |                                                                                                                                               |         |           |      |                    |           |                 |              |
| 10:30                                   |                                                                                                                                               |         |           |      |                    |           |                 |              |

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|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| 10:45                               |                                                                                                                                                                                                      |                                                                                                |
| 11:00                               | <a href="#">[9A]</a> Bridging borders and cultures: Insights from internationalisation and localisation for open sources in the Open Science Community Saudi Arabia, Turing Way, and The Carpentries | <a href="#">[9B]</a> HACKATHON:<br>Translating CRediT for increased accessibility and adoption |
| 11:15                               |                                                                                                                                                                                                      |                                                                                                |
| 11:30                               |                                                                                                                                                                                                      |                                                                                                |
| 11:45                               |                                                                                                                                                                                                      |                                                                                                |
| 12:00                               |                                                                                                                                                                                                      |                                                                                                |
| 12:15                               | <a href="#">[10A]</a> Heterogeneity in effect size estimates: Empirical evidence and practical implications                                                                                          |                                                                                                |
| 12:30                               | <a href="#">[12]</a> LIGHTNING TALKS I                                                                                                                                                               |                                                                                                |
| 12:45                               |                                                                                                                                                                                                      |                                                                                                |
| 13:00                               | <a href="#">[13A]</a> Facilitating loosely structured large transdisciplinary research communities using the UX-informed Community of Practice Learning Model                                        | <a href="#">[13B]</a> UNCONFERENCE:<br>How to do Big Team Science for ManyLanguages            |
| 13:15                               |                                                                                                                                                                                                      |                                                                                                |
| 13:30                               |                                                                                                                                                                                                      |                                                                                                |
| 13:45                               |                                                                                                                                                                                                      |                                                                                                |
|                                     | <a href="#">[13.5A]</a> Project update: Investigating generalizability with the Psychological Science Accelerator                                                                                    |                                                                                                |
|                                     | BREAK (14:00-17:00)                                                                                                                                                                                  |                                                                                                |
|                                     | Block 3 (17:00-21:00 UTC)                                                                                                                                                                            |                                                                                                |
| <a href="#">Time zone converter</a> | A                                                                                                                                                                                                    | B                                                                                              |
| 17:00                               | <a href="#">[14A]</a> Online behavioural experiments and big team science: How Gorilla Experiment Builder can support your research                                                                  | <a href="#">[14B]</a> HACKATHON:<br>STAPLE: Software for scientists                            |
| 17:15                               |                                                                                                                                                                                                      |                                                                                                |
| 17:30                               | <a href="#">[15A]</a> SYMPOSIUM:<br>Big-Team Science applied to open educational resources and metascience                                                                                           |                                                                                                |
| 17:45                               |                                                                                                                                                                                                      |                                                                                                |
| 18:00                               |                                                                                                                                                                                                      |                                                                                                |
| 18:15                               |                                                                                                                                                                                                      |                                                                                                |

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|-------|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| 18:30 | [16] LIGHTNING TALKS II                                                                                                                   |                                                                                                                                    |
| 18:45 |                                                                                                                                           |                                                                                                                                    |
| 19:00 | [17B] FEATURED HACKATHON:<br>ManyManys 1: Developing a standardized procedure to measure and compare reversal learning across animal taxa | [17A] Developing the Multi-Literacies Open Network (M-LION): The why & how?                                                        |
| 19:15 |                                                                                                                                           |                                                                                                                                    |
| 19:30 |                                                                                                                                           | [18A] What can we learn about two million priming values? An update to the Semantic Priming Across Many Languages Project (PSA007) |
| 19:45 |                                                                                                                                           |                                                                                                                                    |
| 20:00 |                                                                                                                                           | [19A] Bringing team science to community-academic partnerships: A team science community toolkit                                   |
| 20:15 |                                                                                                                                           |                                                                                                                                    |
| 20:30 | [20A] Project GARDEN                                                                                                                      | [20B] Elaborating on CRediT to capture the nuances of individual contributions in team science                                     |
| 20:45 |                                                                                                                                           |                                                                                                                                    |
|       | END OF DAY 2                                                                                                                              |                                                                                                                                    |

|                                         | Wednesday 25 October                                                                                                           |         |           |      |                                                                                                                                         |           |                |              |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------|-----------|------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------|--------------|
|                                         | FORMATS:                                                                                                                       | Keynote | Symposium | Talk | Panel/<br>Workshop                                                                                                                      | Hackathon | Lightning Talk | Unconference |
| <a href="#">Time zone<br/>converter</a> | Block 4 (10:00-14:30 UTC)                                                                                                      |         |           |      |                                                                                                                                         |           |                |              |
| UTC                                     | A                                                                                                                              |         |           |      | B                                                                                                                                       |           |                |              |
| 10:00                                   | [21A] Open science hardware for realizing more equitable research collaborations                                               |         |           |      | [21B] How to find collaborators for cross-cultural studies? Insight from leading a project on physical attractiveness with 404 scholars |           |                |              |
| 10:15                                   |                                                                                                                                |         |           |      |                                                                                                                                         |           |                |              |
| 10:30                                   | [22A] Modernizing authorship criteria: Challenges from exponential authorship inflation and generative artificial intelligence |         |           |      | [22B] Music Ensemble: A multi-lab study on musicians and nonmusicians                                                                   |           |                |              |
| 10:45                                   |                                                                                                                                |         |           |      |                                                                                                                                         |           |                |              |
| 11:00                                   | [23] KEYNOTE: (11:00-12:00)<br>Nokuthula Mchunu<br>African Open Science Platform                                               |         |           |      |                                                                                                                                         |           |                |              |
| 11:15                                   |                                                                                                                                |         |           |      |                                                                                                                                         |           |                |              |

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|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 11:30                               |                                                                                                                                |                                                                                                                                                                                     |  |
| 11:45                               |                                                                                                                                |                                                                                                                                                                                     |  |
| 12:00                               | <a href="#">[24]</a> FEATURED PANEL: (12:00-13:00)<br>Open Science in developing countries                                     |                                                                                                                                                                                     |  |
| 12:15                               |                                                                                                                                |                                                                                                                                                                                     |  |
| 12:30                               |                                                                                                                                |                                                                                                                                                                                     |  |
| 12:45                               |                                                                                                                                |                                                                                                                                                                                     |  |
| 13:00                               | <a href="#">[25A]</a> SYMPOSIUM:<br>Making best use of Big Team Science: New thoughts about the scientific record              | <a href="#">[25B]</a> HACKATHON:<br>How can we increase diversity in infant studies?:<br>Extending inclusivity toward developing nations for 'better' and 'bigger' Big Team Science |  |
| 13:15                               |                                                                                                                                |                                                                                                                                                                                     |  |
| 13:30                               |                                                                                                                                |                                                                                                                                                                                     |  |
| 13:45                               |                                                                                                                                |                                                                                                                                                                                     |  |
| 14:00                               | <a href="#">[26A]</a> Social cognition and psychopathology: Do we need BTS?                                                    |                                                                                                                                                                                     |  |
| 14:15                               |                                                                                                                                |                                                                                                                                                                                     |  |
|                                     | BREAK (14:30-17:00)                                                                                                            |                                                                                                                                                                                     |  |
|                                     | Block 5 (17:00-21:00 UTC)                                                                                                      |                                                                                                                                                                                     |  |
| <a href="#">Time zone converter</a> | A                                                                                                                              | B                                                                                                                                                                                   |  |
| 17:00                               | <a href="#">[27A]</a> PANEL:<br>Rewarding and recognising team infrastructure roles: Successes and failures so far?            | <a href="#">[27B]</a> HACKATHON:<br>Designing a workflow for big-team, large-scale, collaborative systematic reviews & meta-analyses                                                |  |
| 17:15                               |                                                                                                                                |                                                                                                                                                                                     |  |
| 17:30                               |                                                                                                                                |                                                                                                                                                                                     |  |
| 17:45                               |                                                                                                                                |                                                                                                                                                                                     |  |
| 18:00                               | <a href="#">[28A]</a> Where can Big Team Science go next?<br>Foundational tests, unique populations, and strict theory testing |                                                                                                                                                                                     |  |
| 18:15                               |                                                                                                                                |                                                                                                                                                                                     |  |
| 18:30                               | [29A] empty                                                                                                                    | <a href="#">[29B]</a> WORKSHOP:<br>Thinking systemically: Building big teams on purpose                                                                                             |  |
| 18:45                               |                                                                                                                                |                                                                                                                                                                                     |  |

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|-------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| 19:00 | [30A] UNCONFERENCE:<br>Mega-syntheses: A framework for crowdsourcing<br>research evaluation and syntheses                             |                                                  |
| 19:15 |                                                                                                                                       |                                                  |
| 19:30 |                                                                                                                                       |                                                  |
| 19:45 |                                                                                                                                       |                                                  |
| 20:00 | [31A] How to ensure high quality, ethically-shareable<br>video data in Big Team Science: Training, quality<br>assurance, and curation | [31B] Using design sprints to move teams forward |
| 20:15 |                                                                                                                                       |                                                  |
| 20:30 | [32] CLOSING REMARKS                                                                                                                  |                                                  |
| 20:45 |                                                                                                                                       |                                                  |
|       | END OF DAY 3                                                                                                                          |                                                  |

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## Keynotes & Invited Sessions

[2] KEYNOTE | Global collaborations improve the impact of behavioral science: Examples from a manylabs megastudy to increase climate action [🔗](#)

Monday, 23 October | 14:00-15:00 UTC

[Madalina Vlasceanu](#)



**Bio:** Dr. Madalina Vlasceanu is an Assistant Professor of Psychology at New York University and director of the Collective Cognition Lab. Her research focuses on the cognitive and social processes that shape individuals' and collectives' memories, beliefs, and behaviors, with direct applications for policy. Guided by a theoretical framework of investigation, she employs a large array of methods from behavioral

experiments to brain imaging, and social network analysis, to uncover avenues in which science can be applied for social welfare and social change. Madalina obtained a PhD in Psychology and Neuroscience from Princeton University in 2021, an MA in Psychology from Princeton University in 2019, and a BA in Psychology and Economics from the University of Rochester in 2016. ([source](#))

Abstract: ([link](#))

## [8] KEYNOTE | Collaborative approaches to improving research culture and practice [↻](#)

Tuesday, 24 October | 10:00-11:00 UTC

[Marcus Munafo](#)



**Bio:** Dr. Marcus Munafo is Professor of Biological Psychology at the University of Bristol and Programme Lead within the MRC Integrative Epidemiology Unit. He also serves as Bristol's Associate Pro Vice-Chancellor of Research Culture and as the chair of the UK Reproducibility Network's Steering Group. His research focuses on understanding pathways into, and the consequences of, health behaviors and mental health, with a particular focus on tobacco and alcohol use. He also has interests in the role of incentive structures in science, and the extent to which these shape the robustness and reproducibility of scientific research. ([source](#))

Abstract: ([link](#))

## [23] KEYNOTE | African Open Science Platform [↻](#)

Wednesday, 25 October | 11:00-12:00 UTC

## [Nokuthula Mchunu](#)



**Bio:** Dr. Nokuthula Mchunu is the Deputy Director at the African Open Science Platform hosted by the National Research Foundation, South Africa and a Senior Researcher from the Agricultural Research Council of South Africa in the Biotechnology Platform. She completed her doctoral degree in fungal genomics, and was previously a senior scholar in the Department of Biotechnology of Durban University of Technology for more than 15 years. She has also served as a scientist in a number of international institutions including the University of Cincinnati (USA), Lund University (Sweden), Tianjin University, (China) and the Centre for Chemical Biology (Malaysia). She is the first recipient of the Young Scientist Programme between China and South Africa. Her research focused on COVID-19 and pathogen surveillance in wastewater, fungal genetics, cannabis and Africa legume genomics. Dr Mchunu brings a wealth of experience in academia outreach programmes, the popularization of science, and open science. ([source](#))

Abstract: [\[link\]](#)

## **[3] FEATURED SYMPOSIUM** | Open Innovation in Science (OIS): How open and collaborative practices in science influence scientific productivity and societal impact [↻](#)

Monday, 23 October | 15:00-16:00 UTC

[Susanne Beck, Christoph Grimpe, Marion Poetz, & Henry Sauermann](#)



Abstract: [\[link\]](#)

[7] **FEATURED TALK** | The 2023 EPiC Challenge: Crowdsourced development of machine learning models designed to predict core affective experiences from physiology [🔗](#)

Monday, 23 October | 17:30-18:00 UTC

Bartosz Perz, Stanisław Saganowski, Maciej Behnke, Nicholas Coles

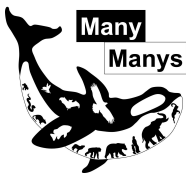


Abstract: [\[link\]](#)

[17B] **FEATURED HACKATHON** | ManyManys 1: Developing a standardized procedure to measure and compare reversal learning across animal taxa [🔗](#)

Tuesday, 24 October | 19:00-20:30 UTC

Nicolás Alessandroni & Laurent Prétôt, on behalf of the ManyManys 1 team



Abstract: [\[link\]](#)

[24] **FEATURED PANEL** | Open Science in developing countries [🔗](#)

Wednesday, 25 October | 12:00-13:00 UTC

Hu Chuan-Peng, Alma Jeftic, Leonardo Seda, Samiul Hossain, Zhiqi Xu, Nikita Ghodke



Abstract: [\[link\]](#)

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## Abstracts

### [1] OPENING REMARKS [↻](#)

Nicholas Coles, Julia Espinosa, Drew Altschul, Heidi Baumgartner

A warm welcome from the 2023 Big Team Science Conference organizers!

### [2] KEYNOTE | Global collaborations improve the impact of behavioral science: Examples from a manylabs megastudy to increase climate action [↻](#)

Madalina Vlasceanu

**Abstract:** Effectively reducing climate change requires dramatic global behavioral-change. In a global collaboration involving 255 scientists, we tested 11 expert-crowdsourced behavior-change interventions on four climate mitigation outcomes: beliefs, policy support, information sharing, and an effortful tree-planting behavioral task. Across 59,440 participants from 63 countries, the interventions' relative effectiveness differed across outcomes: Beliefs were strengthened most by decreasing the psychological distance of climate change, climate policy support was increased most by writing a letter to a future generation member, information sharing willingness was stimulated most by negative emotion induction, and no intervention increased tree planting contributions. This global manylabs megastudy has critical implications to the

streamlining of the behavioral sciences response to the climate crisis, thus promising to increase the impact of the behavioral sciences in society.

### [3] **FEATURED SYMPOSIUM** | Open Innovation in Science (OIS): How open and collaborative practices in science influence scientific productivity and societal impact

Susanne Beck, Christoph Grimpe, Marion Poetz, & Henry Sauermann

**Abstract:** Open Innovation in Science (OIS) is a unifying framework to integrate dispersed knowledge on how open and collaborative practices in scientific research influence scientific productivity and societal impact. This framework aims to advance our understanding of the antecedents, contingencies, and consequences related to practices such as inter- and transdisciplinary collaborations, crowd science, university-industry collaborations, and open data reuse. In this symposium, we apply the OIS lens to explore collaborations involving various types of partners and at different stages of the scientific knowledge production process. Specifically, we showcase projects that feature 1) collaborative conceptualization efforts among scholars from multiple disciplines, 2) the crowdsourcing of research questions from a non-academic crowd, 3) the management of crowds and scientists through AI, and 4) AI-based measurements of impact generated by collaborative research efforts. We conclude by discussing how an integrated approach to researching scientific collaborations can advance our understanding of how openness and collaboration in science contribute to achieving both scientific and societal impact.

### [4A] **TALK** | PhyloPsy: A new resource for phylogenetic comparative cognition

Gabriela Venable, Brian Hare, Hannah Salomons

**Abstract:** Comparative psychology is increasingly turning to the use of phylogenetic comparative methods, which allow us to better identify general evolutionary trends. However, studies using such methods require large-scale multi-species collaborations. We have launched PhyloPsy.org, a new online resource where researchers can propose a project and find collaborators with access to species necessary for their study as well

as phylogeneticists that can aid with statistical analyses. We now have 87 PhyloPsy members (18 of which are phylogeneticists), which represent 37 institutions and over three dozen different species, including (but not limited to) insects, birds, and primates. In our presentation, we will detail how PhyloPsy works, how it complements the various “ManyX” Projects, and what we hope to accomplish with this new resource.

## [4B] HACKATHON | Managing Big Team Science II: Continuation of lessons learned sharing [🔗](#)

David Vaidis, Kathleen Schmidt, Jordan Wagge, John Protzko

**Abstract:** Successful big team Science requires rigorous management and years of effort and commitment. Big teams face unique challenges that threaten the efficiency, transparency, and quality of their research such as inadequate organization and documentation, technical limitations, motivation exhaustion, collaborator attrition, translation quality issues, authorship management, team conflict or dissent, and changing journal editors and submission requirements, to name just a few. However, effective project management can help remove these barriers to success or mitigate their consequences.

The suggested hackathon serves as a continuation of its predecessor held in the previous year. In the preceding session, the hackathon participants successfully identified based on their experience a long list of common barriers to project success. However, the timeframe proved insufficient to devise thorough solutions. Building upon the groundwork laid by previous efforts, participants will discuss and collaborate to identify efficient and innovative proposals aimed at effectively addressing these challenges.

In light of the hackathon's central objective, we suggest that participants possess significant exposure to the domain of large team science. This may encompass roles such as project managers, principal investigators, or active contributors to expansive collaborative research undertakings. While having engaged in the 2022 session would undoubtedly add value, it is not an obligatory condition for participation.

## [5A] TALK | A multi-lab EEG replication and extension of “Tagging the neural entrainment to beat and meter” [🔗](#)

Karli Nave, Erin Hannon, Joel Snyder

**Abstract:** Nozaradan et al. (2011) found enhanced frequency-tagged electroencephalographic (EEG) brain activity at beat-related frequencies when listeners imagined a pattern as being in a duple or triple musical meter while presented an ambiguous isochronous auditory stimulus. However, it is unclear whether this represents repeatable evidence for musical beat perception reflected in brain activity. This study was replicated in 13 laboratories (N= 154 participants), using a pre-registered and provisionally-accepted protocol, with an added behavioral task that measured beat perception on each trial. We estimated the meta-analytic effect sizes for differences between imagery conditions (duple vs. passive, triple vs. passive, duple vs. triple), as well as moderating effects of music and dance training. Non-registered analyses of variance (ANOVAs) were also performed to detect significant effects of imagery on brain activity in this relatively large sample of participants. Voltage differences between different imagery conditions (0.04 uV) were consistently smaller than in the original study (0.16 uV), and all confidence intervals encompassed 0 uV. No moderating effects of musical or dance experience occurred. Exploratory ANOVAs showed a significant effect of imagery condition for beat-related frequencies, but effect sizes were considerably smaller (partial eta-squared=0.11) than in the original study (partial eta-squared=0.67). There may be a small effect of imagery on beat-related brain activity. Moderating effects of musical or dance training may require much larger samples to detect. Our finding of smaller effect sizes underscores the need to widely embrace practices such as pre-registration, a priori power analysis, and replications.

## [6A] TALK | Collaborating for the Advancement of Interdisciplinary Research in Benign Urology (CAIRIBU) [🔗](#)

Whitney Sweeney, Jennifer M. Allmaras, Mariana Coughlin, Kristina L. Penniston

**Abstract:** There is a critical need to advance our understanding of non-cancerous genitourinary (GU) diseases. Such conditions include urinary tract infections, kidney and bladder stones, prostatic enlargement, lower urinary tract symptoms, male reproductive disorders, and developmental abnormalities of the urinary tract. In spite

of their classification as benign, many of these diseases represent a significant economic burden and have an incredible impact upon the lives of those affected. Developing sensitive diagnostic tests, objective criteria for symptomatic conditions, and effective treatments are complex problems that increasingly require a transdisciplinary approach. The Interactions Core for the Community of NIDDK-funded benign GU Centers and Programs known as CAIRIBU (Collaborating for the Advancement of Interdisciplinary Research in Benign Urology) fosters and supports collaborative transdisciplinary scientific research to enhance our understanding of the causes, development, progression, and personal, societal, and environmental impacts of non-cancerous or benign urologic conditions. Empowered by evidence-based best practices derived from the Science of Team Science (Trentham-Dietz et al., 2022), the CAIRIBU Interactions Core

- Cultivates a collaborative and inclusive research community,
- Develops and delivers complementary training and resources,
- Promotes professional development of early career investigators,
- Actively engages stakeholders including patient populations, and
- Provides consistent logistical support including assessment and evaluation.

This talk will describe the unique role of the CAIRIBU Interactions Core as a coordinating mechanism for transdisciplinary research in benign urology. We will share lessons learned from their efforts to accelerate urologic science and ultimately improve human health.

## [7] FEATURED TALK | The 2023 EPiC Challenge: Crowdsourced development of machine learning models designed to predict core affective experiences from physiology [🔗](#)

Bartosz Perz, Stanisław Saganowski, Maciej Behnke, Nicholas Coles

**Abstract:** For over a century, researchers have debated whether there are reliable physical traces of emotions. Machine learning may usefully advance these debates because such physical traces may be too complex to be captured via traditional statistical approaches (e.g., linear regression). As part of a broader initiative to evaluate this potential – the Emotion Physiology and Experience Collaboration – we organized a competition wherein 12 machine learning teams (50 researchers) competed to see who can best use measures of physiology to model moment-to-moment ratings of two elementary components of emotional experience: feelings of valence and arousal. In this talk, we will describe the structure of the challenge, preliminary results, and lessons

learned (e.g., in regard to data preparation, decisions about baselines, and ensuring computational reproducibility).

## [8] KEYNOTE | Collaborative approaches to improving research culture and practice [↻](#)

Marcus Munafo

**Abstract:** Efforts to improve research quality often occur at a local scale, which limits opportunities from cross-discipline and cross-institution learning. Moreover, these approaches create friction if they are not interoperable. Collaborative approaches, which bring together researchers, institutions, funders, publishers and so on – with the common goal of improving research quality – can be more effective. I will describe the origins of the UK Reproducibility Network, and its current activity, including supporting the establishment of similar national Reproducibility Networks in other countries.

## [9A] TALK | Bridging borders and cultures: Insights from internationalisation and localisation for open sources in the Open Science Community Saudi Arabia, Turing Way, and The Carpentries [↻](#)

Batool Almarzouq, Joel Nitta

**Abstract:** This abstract aims to present the ongoing work and progress of three organisations - The Turing Way, the Open Science Community Saudi Arabia, and The Carpentries - as they implement the crucial task of internationalisation and localisation of their open-source resources. The global open-source movement seeks greater inclusivity, making it essential to adapt projects to cater to diverse linguistic and cultural needs.

To tackle language-specific nuances and technical terminology gaps, these organisations are implementing Translation Management Systems such as Transifex and Crowdin. These platforms facilitate peer review, enabling efficient collaborative translations akin to code development workflows. Clear communication within these

systems streamlines processes, mitigating volunteer burnout and frustrations associated with manual approaches.

Moreover, recognising the significance of culturally relevant translations, the organisations encourage contextualisation and establishment of shared glossaries maintained by native speakers. This approach significantly enhances the accuracy and cultural sensitivity of the translated materials, reinforcing the commitment to inclusivity.

The pivotal role of volunteers in the success of these efforts is being formally acknowledged, further strengthening the sense of community and motivation among contributors, thus promoting sustained engagement.

The collective experiences of the Open Science Community Saudi Arabia, Turing Way, and The Carpentries underscores the transformative potential of Translation Management Systems in enabling scalable and collaborative multilingual resources. By embracing these insights, the broader open-source community can foster a more inclusive and culturally-aware ecosystem, ensuring open knowledge reaches every corner of the world. This work remains ongoing, and the organisations are continually refining their approaches to achieve greater effectiveness and impact.

## [9B] HACKATHON | Translating CRediT for increased accessibility and adoption

Marton Kovacs

**Abstract:** Thousands of scientific journals require using the Contributor Roles Taxonomy (CRediT) to indicate what roles contributors played in scholarly work. The taxonomy defines 14 different roles to describe each person's specific contributions. CRediT aims to improve the recognition of researchers' diverse roles and make the reported contributions more transparent. The taxonomy was recently formalized as a NISO standard, but only in English. Translating CRediT would 1) encourage adoption by non-English journals, and 2) make it more accessible to researchers that are often overlooked. During our hackathon, we aim to start the translation process of CRediT into multiple languages by utilizing the diversity of the BTS community.

## [10A] TALK | Heterogeneity in effect size estimates: Empirical evidence and practical implications [↻](#)

Felix Holzmeister

**Abstract:** A typical scientific study involves choosing a sample, a research design, and an analysis. Variation in such choices across studies leads to heterogeneity in results that introduce an additional layer of uncertainty typically not accounted for in reported standard errors and confidence intervals. We provide a framework for studying heterogeneity in the social sciences and divide heterogeneity into population heterogeneity, design heterogeneity, and analytical heterogeneity. We furthermore estimate the heterogeneity of each type from recent multiple lab replication studies, meta-analyses prospectively studying design variations, and many-analysts studies. Our results suggest that population heterogeneity is small to moderate, whereas design heterogeneity and analytical heterogeneity are large. The estimates suggest that adding the uncertainty due to design or analytical heterogeneity would at least double sample standard errors and confidence intervals. We illustrate that heterogeneity of this magnitude—unless properly accounted for—has severe implications for statistical inference with strongly increased rates of false scientific claims. We argue for the need to move away from single population/designs/analysis studies towards large-scale pre-registered prospective meta-analyses systematically varying research samples, designs, and analyses.

## [11A] TALK | ManyBabies3 spinoff: Test-retest reliability of rule learning measures in infancy [↻](#)

Anna Exner, David Moreau, Catia M. Oliveira, Melanie Soderstrom, Ingmar Visser, Martin Zettersten

**Abstract:** Language development is thought to depend on infants' ability to learn and generalize abstract algebraic rules. In ManyBabies 3, an international consortium of infancy researchers is currently conducting a large-scale, multi-site experimental test of this foundational ability in infants using looking time methods. A key question of theoretical interest is to understand not only infants' overarching ability to learn rules, but to understand how variation in individual infants' learning abilities leads to different developmental trajectories and outcomes. To study these individual differences, it is essential to know how stably a certain ability can be measured over multiple

measurement time points. However, research on the reliability of infant looking time measures to date has been sparse and has found little or no evidence of test-retest reliability.

In an ongoing spin-off project from the main ManyBabies 3 project we aim to investigate the test-retest reliability of measures for abstract rule learning in infancy. Additionally, we are interested in questions regarding the robustness of reliability estimates across different methods (head-turn preference procedure, central fixation, or eye tracking) and over development. At BTSCON, we will present our approach to measuring infant looking time test-retest reliability in a large-scale, collaborative, multi-site experiment, as well as preliminary results from the project. Overall, we plan to highlight how team science projects are uniquely positioned to address key questions about measurement and validity in infancy research.

## [12] LIGHTNING TALKS I [🔗](#)

### ManyIndividuals: How to succeed in human modified environments

Corina Logan, Rachael Shaw, Dieter Lukas, Kelsey McCune

**Abstract:** Our registered report (abstract below), which received In Principle Acceptance at Peer Community in Registered Reports, launched our reproducible research program, ManyIndividuals (<https://github.com/ManyIndividuals/ManyIndividuals>), which is a global network of researchers with field sites investigating hypotheses that involve generalizing across many individuals.

Human modifications of environments are increasing, causing global changes that other species must adjust to or suffer from. Behavioral flexibility (hereafter 'flexibility') could be key to coping with rapid change. Behavioral research can contribute to conservation by determining which behaviors can predict the ability to adjust to human modified environments and whether these can be manipulated. When research that manipulates behavior in a conservation context occurs, it primarily trains a specific behavior to improve individual success in the wild. However, training a domain general cognitive ability, such as flexibility, has the potential to change a whole suite of behaviors, which could have a larger impact on influencing success in adjusting to

human modified environments. This project asks whether flexibility can be increased by experimentally increasing environmental heterogeneity and whether such an increase can help species succeed in human modified environments. We explore whether it is possible to take insights from highly divergent species and apply them to address critical conservation challenges. This pushes the limits in terms of understanding how conserved these abilities may be and to what extent they can be shaped by the environment. We aim to 1) conduct flexibility interventions in flexible species that are successful in human modified environments (great-tailed grackles and California scrub-jays or blue jays) to understand how flexibility relates to success; and 2) implement these interventions in two vulnerable species (tutuwai and Florida scrub-jays) to determine whether flexibility as a generalizable cognitive ability can be trained and whether such training improves success in human-modified environments. This research will significantly advance our understanding of the causes and consequences of flexibility, linking behavior to environmental change, cognition, and success in human modified environments through a comparative and global framework.

## Where the Big Teams are? Tracking the patterns in scientific outputs

Malgorzata Lagisz

**Abstract:** Big Team Science is increasingly common and influential. And so are the outputs of such big teams - as shown by the steadily growing numbers of multi-authored (>10 authors) and hyper-authored (>100 authors) research papers over the last 50 years. Excitingly, the authorship patterns can be now scrutinized by using freely available large databases of scientific works. By probing such a large open database, we can reveal the growth of ultra-authorship - works with over 1000 authors. Also, we can test if research outputs from big science teams are freely accessible to all readers via Open Access. Then, we can map which topics are the most popular research subjects among big science teams. Finally, we can investigate biases in the inclusion and recognition of scientists from the Global South as authors in big teams. Overall, in this short talk I will present some examples of what you can find if you look for the big science teams in the big open data. Especially, where the big teams came from, where they are now, and what information we are still missing.

## Bridging research divides through LGBTQIA+ community Big Team collaboration

Benedict Tan Xin Hao, Chong Shao Yuan, Ho, D. W. S., Wee, Y. X., Jamal, M. H. & Tan, R. K. J.

**Abstract:** LGBTQIA+ research has made significant progress, but remains significantly dominated by Western, Educated, Industrialized, Rich and Democratic societies, leaving behind the voices of LGBTQIA+ community members who are living in spaces where the global majority reside. Citizen-led, community-engaged approaches hold promise in subverting power structures that reproduce such barriers, allowing for the latter to have their voices and needs centered. This lightning talk draws on our experience of a collaborative research project between the National University of Singapore and RainbowAsaia, a Singapore-based community-based organization addressing the needs of young gay, bisexual, and queer (GBQ) men. The study focused on stigma, resilience, relationships, sexual partnerships, and mental health among Singaporean GBQ men, and commenced in June 2022. We employed a citizen science framework comprising eight key phases, including (i) developing a research and implementation pipeline, (ii) stakeholder and resource mapping, (iii) delegation of expertise, (iv) creating plans for equity, (v) developing a research plan, (vi) generating evidence, (vii) dissemination and translation, and (viii) plans for sustainability and impact. 44 in-depth interviews were completed, transcribed, and analyzed by a core research team and 25 volunteer research assistants. Through this collaborative research experience, our case study offers a microcosm of how research evidence can be generated by big teams of citizens and communities, involving them from dissemination to translation of research to evidence-based programmes at the community level. Our framework integrates citizen science and community engagement, providing a roadmap for sustainable collaborative research between academic, community, and citizen stakeholders.

## Team 4 TMS-EEG: A large-scale collaborative initiative to improve reproducibility of TMS-EEG studies

Marta Bortoletto, Veniero Domenica, Julkunen Petro, Hernandez-Pavon Julio C., Mutanen Tuomas P., Zazio Agnese, Bagattini Chiara

**Abstract:** Team 4 TMS-EEG (T4TE) is a crowd-sourced initiative launched by a core team of 7 TMS-EEG experts in September 2022. The aim is to improve reproducibility in studies employing transcranial magnetic stimulation – electroencephalography (EEG) coregistration (TMS-EEG). In this field, there is a lack of consensus on the interpretation of signals, i.e., what is recorded, and on several methodological issues, i.e., what the good practices are to obtain genuine brain responses with minimal artifacts. T4TE aims to overcome current methodological difficulties and better understand the TMS-EEG signals by promoting projects with high methodological rigor, acquisition of large datasets, scientific transparency, and data sharing. Studies can be started and proposed by any researcher to tackle one of three possible crucial issues: validity, reliability, and applicability of TMS-EEG signals. More than 30 independent teams have joined the first study that will collect and analyse data from 400 subjects. The results of the project will reveal the interlab reliability of TMS-evoked potentials and will help in understanding the impact of methodological choices occurring both during data acquisition and data processing.

## ManyBirds Study 1: Neophobia in birds

Rachael Miller, Vedrana Šlipogor, Kai Caspar, Jimena Lois Milevicich, Stephan Reber, Claudia Mettke-Hofmann, Megan Lambert

**Abstract:** Comparative cognitive and behaviour research aims to investigate and understand evolution of cognitive abilities by comparing cognitive performance in ideally large and diverse samples of different species. However, these can be difficult to obtain by single labs or institutions with small, less representative samples, leading to potential reproducibility and generalisation issues. To help mitigate these issues, in February 2021, we established a Big-Team Open Science approach called the ManyBirds Project, following the lead of other exemplary big-team science projects (e.g. Psychological Science Accelerator, ManyBabies, ManyPrimates, ManyDogs and others). ManyBirds aims to provide new insights into the evolution of avian cognition and behaviour through large-scale, multi-site collaborative studies, with far-reaching

implications for both theoretical development and applied animal welfare and conservation. In this talk, we provide a) an overview of the ManyBirds project at present; b) a short update on ManyBirds Study 1 on neophobia (responses to novelty) in birds (162 species across 25 orders; 60+ institutions across 22 countries worldwide) and c) potential future study plans. We hope to attract potential future collaborators in new ManyBirds studies (more info at: [www.themanybirds.com](http://www.themanybirds.com)).

## Connecting research seminars and academic video to the wider scholarly ecosystem

Andrew Preson

**Abstract:** Academic seminars have long been an important route for researchers to discuss and disseminate their latest findings. Approximately 1 million seminars are held each year. The contents of seminars can vary from a researcher discussing their latest published research, demonstrating a new tool or a novel new method. They often involve invited speakers from other institutions and are a great facilitator of new collaborations and innovations. In nearly all cases the outputs of seminars are not recorded, shared or preserved, which results in a huge amount of wasted knowledge.

During the pandemic we saw seminars migrate online which opened up a range of opportunities for innovation in a class of previously unshared research outputs. For the first time academic seminars were not limited to the people in the room and the information disseminated in online seminars was able to reach a more inclusive, diverse audience across demographics, disciplines and geographies. However, while there is a rich ecosystem of tools and services for text-based publications, there are no corresponding tools that cater to research video. This is slowing down the development of online academic video resulting in wasted effort and undiscoverable or even lost research outputs.

In this talk we will describe an ecosystem for researcher-focused seminars waiting to be built, which include:

- Workflow tools to make it easy to organise and run seminars online
- A service that helps to publish and preserve seminars with a DOI
- Technology to identify and extract key components of a video eg. slides & references
- Connections into the formal sphere of scholarly knowledge,
- Recommendation engines based on literature and video connections

## [13A] TALK | Facilitating loosely structured large transdisciplinary research communities using the UX-informed Community of Practice Learning Model [🔗](#)

Peng Warweg, Brenda Bannan, Dawn Hathaway

**Abstract:** With sponsors such as the National Science Foundation (NSF) funding more center-like proposals and the rise of large transdisciplinary research centers to respond to complex and wide-ranging societal challenges, the scientific research communities are facing challenges of facilitating large groups of researchers and research initiatives. Our study explores the theoretical and empirical implications of applying a User-Experience (UX) inspired Community of Practice (CoP) Learning Model to these large research centers and communities. We derived our analyses from both literature reviews and our design-based research insights from running a large transdisciplinary research center.

As a situated and collaborative learning model (Lave & Wenger, 1991), CoP encompasses many key features intrinsic to large transdisciplinary research practice - a community of research practitioners, engagements, collaborations, and knowledge co-production. Researchers concluded that CoP holds many advantages in promoting member participation, collaboration, and knowledge co-production (e.g., Cundill et al., 2015; Degn et al., 2018; Zhao et al., 2018). These benefits are attributed to many characteristics unique to a CoP, for example, the equal-distribution of power, bottom-up approach, adaptable membership structure, as well as the embedded learning mindset.

Additionally, a CoP's success relies on intentional facilitations, which are pedagogically deliberate activities that aim to stimulate collaborations and learnings. UX design principles (Hartson & Pyla, 2018) can help instigate effective learner-centered pedagogical strategies. Establishing authentic user personas in UX design, for example, helps gain deep understanding of community members' motivations, needs, and levels of participation, initiate meaningful collaborations, and drive sustainable engagement and productivity.

## [13B] UNCONFERENCE | How to do Big Team Science for ManyLanguages [↗](#)

Timo Roettger

**Abstract:** Our understanding of human language and its cognitive underpinnings is increasingly shaped by experimental data. Thus, not unlike other quantitative disciplines, the language sciences are vulnerable to challenges associated with replicability, reproducibility, and generalisability. Other disciplines have tackled some of these challenges through grassroots consensus-based networks (e.g. ManyBabies and the Psychological Science Accelerator), designed to enable and support crowdsourced research projects across large numbers of researchers and labs ("Big Team Science", henceforth BTS). The BTS approach comes with many challenges rooted in institutional structures, inherent conservatism, and project management. However, any BTS approach to the language sciences comes with another set of challenges which have not yet been widely acknowledged: Languages are tremendously diverse in virtually every level of their linguistic organisation, possibly adding impactful moderators and co-variables to any experimental investigation. Even if we were able to group languages into typologically categories (which is not trivial), BTS workflows need to be adapted to the prevalent typological diversity and possibly require additional layers of planning. In this Unconference, we will discuss these unique challenges as well as possible ways to tackle them.

## [13.5A] TALK | Project update: Investigating generalizability with the Psychological Science Accelerator [↗](#)

Kathleen Schmidt, Priya Silverstein, Christopher R. Chartier

**Abstract:** The Psychological Science Accelerator (PSA), in collaboration with Ashland University, has launched a series of studies funded by the John Templeton Foundation (JTF). The goal of this project is to provide generalizable answers to research questions relevant to JTF strategic priorities, such as intellectual humility, religious cognition, and character virtue. The project includes four studies being carried out by the PSA network and an overarching metascientific investigation examining researcher accuracy in predicting generalizability. This presentation will summarize project aims, provide updates on the research studies, and invite contributions from researchers across regions, disciplines, and career stages.

## [14A] TALK | Online behavioural experiments and big team science: How Gorilla Experiment Builder can support your research [🔗](#)

Johanna Tomczak, Jade Pickering

**Abstract:** The pandemic pushed many behavioural scientists out of the lab and into online research, which accelerated a trend that was already gaining momentum. At Gorilla Experiment Builder, we believe that online data collection can continue to play a significant role in improving the research landscape by fostering open science and collaboration at scale amongst large cross-cultural teams. To date, thousands of successful studies have collected data from millions of participants with Gorilla, but we hope to see evidence of even more researchers using the infrastructure that allows big teams to collaborate.

In this talk, we would like to share the scope of what is possible with Gorilla, particularly for big teams and large scale studies. Gorilla offers a complete suite of experimental tools for online data collection such as questionnaires, tasks, games, shops, and multiplayer, with full randomisation and counterbalancing for a variety of experimental designs. We take pride in our data protection and security measures, which meet the standards of institutions worldwide. In addition, researchers can collaborate on projects, keep track of different versions of their work, and share their materials including an experiment preview through our Open Materials pages. Finally, we'll share some of the 'behind the scenes' data, which make us confident about the future of big team science and online research.

## [14B] HACKATHON | STAPLE: Software for scientists [🔗](#)

Marton Kovacs, Erin Buchanan

**Abstract:** Help us design your new favorite software! The proposed hackathon aims to gather information from researchers about "how they science" to develop a science focused project management tool called STAPLE: science tracking across the project lifespan. Scientific research has become increasingly complex, requiring specialized skills, interdisciplinary work, and collaboration among large teams. Thus, managing

such projects and tracking data and metadata has become a significant challenge. Therefore, there is a need for scientific project management software that is tailored to the management of all manner of science projects while simultaneously aiding the collection and curation of scientific metadata. We will present the current project status of STAPLE, showing off current software capabilities, along with the plan for features and other integrations. Attendees will discuss their current project management workflow, needs, barriers, and other tools they would like to have for an integrated project management toolkit. They will give feedback about the current project and help "hack" other needs and ideas to ensure software functionality across the spectrum of scientists. We will develop a list of research outputs (materials, stimuli, data, documents, etc.) and determine their requirements for understandable metadata. Participants will explore how they use CRediT to create the template for a shareable output that details the completion of a project. Attendees (and other interested persons) will also be invited to participate in the developmental stage of the software by testing and providing information about bugs, usability, and design.

## [15A] SYMPOSIUM | Big-Team Science applied to open educational resources and metascience [🔗](#)

Helena Hartmann, Ciara Egan, Max Korbmacher, Giorgia Andreolli

**Abstract:** FORRT is a Framework for Open and Reproducible Research Training which is advancing research transparency, reproducibility, rigour, and ethics through pedagogical reform and meta-scientific research, all while truly embracing the Big Team Science (BTS) approach. FORRT provides a pedagogical infrastructure and open educational resources designed to support the teaching and mentoring of open and reproducible science. With this, it raises awareness of the pedagogical implications of open and reproducible science and its associated challenges, and advocates for the opening and formal recognition of teaching and mentoring materials to facilitate access, discovery, and learning to those who otherwise would be educationally disenfranchised. This symposium aims to highlight three examples of work that people at FORRT do, what you can achieve through BTS, and how and where you can actively contribute.

In the first talk, Helena Hartmann will give an overview over FORRT's Replications and Reversals project (<https://forrt.org/reversals>). Its main goals are to a) establish a platform to raise awareness of replication efforts and determine the reliability of social, cognitive, and behavioural science effects; b) provide a research and pedagogical tool

to support scholars, educators, and students in their replication, teaching, mentoring, and learning efforts; and c) highlight the under-recognition and need for greater resourcing and funding for educational initiatives aimed at integrating open scholarship into curricula. With a growing team of around 100 contributors, we have already documented over 470 crowd-sourced entries spanning more than 22 disciplines. Contributors collectively review and compile replication studies based on their status (e.g., replicated, not replicated, reversed, mixed), the original paper, critiques, original effect sizes, and replication effect sizes.

In the second talk, Meng Liu I will share team collaboration experience from FORRT's Landscape project. This project aims to a) develop a cross-disciplinary literature database and b) conduct a systematic review of open scholarship for a comprehensive understanding of universal and discipline-specific issues, promoting collaboration among researchers. In the first phase of the project, a bibliometric database of literature was created as the foundational database and the team has gone through multiple collaborative steps to screen the literature for subsequent analyses. Specifically, in Round 1 Screening, 2256 records were double screened by 57 community coders through multiple hackathon sessions, with the interrater reliability being 0.728 (S-index).

In the third talk, Max Korbmacher will describe how to collaboratively write a narrative review in a large team of early career researchers on the positive changes resulting from the replication crisis. Then key aspects of the review will be described and discussed, namely structural, procedural and community changes. The review is designed to be an educational resource to help students and academics access a complex body of literature. Hence, also the satellite creation of an open science syllabus will be presented as an example for how BTS projects can output practical teaching resources.

Finally, Flavio Azevedo will give a short outlook on what other FORRT projects are currently ongoing and actively seeking contributors, which gives everybody a chance to get involved.

## [16] LIGHTNING TALKS II [🔗](#)

### Crowdsourcing cross-cultural research: Opportunities for students, collaboration, and the classroom

Brianna Fitapelli

**Abstract:** The Network for International Collaborative Exchange (NICE), launched in the winter of 2018, is a program based on facilitating cross-cultural research among Psi Chi members and non-members both within the United States, and internationally. NICE has two objectives: 1) to connect a network of collaborators open to collaboration and 2) to implement a crowdsourcing initiative (CROWD) that seeks to gather researchers from around the globe to answer a specified research question in which a contributor-submitted research proposal is selected and promoted by Psi Chi to generate collaboratively-collected data from many locations across the world using the same research protocol. The benefits of considering the NICE CROWD program as your next academic/research endeavor are vast and our NICE chair and committee members are committed to mentoring collaborators throughout the process. Our program maximizes efficiency and cost-effectiveness, saving researchers the funds often needed for advertising, recruitment, and assessments. Further, by becoming a NICE collaborator, you can join our network of professionals across the world, receive access to large, diverse data sets, and become an author on this year's NICE project! This presentation will provide an in-depth overview of the NICE initiative and its aims, discuss past and current NICE projects and the evolution of the program, and present academic opportunities for undergraduate and graduate students, and professionals to get involved with and collaborate on this year's NICE project.

### Leveraging Big Team Science initiatives in school psychology: Improving the relevance and implementation of clinical research to promote innovation

Yeon Hee Kang

**Abstract:** Evidence-based practices are required by the Canadian Psychological Association's standards of practice in the field of school psychology. However, most research is not relevant to interventions or to meet the needs of children and youth.

Intervention research often lacks statistical power, demographic diversity among participants, and generalizable relevance across provinces. Moreover, even strong research rarely is implemented into clinical practice. Additionally, Canada lacks a coherent profession of school psychology; roles and functions are dramatically different across the country.

Creating a consortium of school psychologists and related professions using a modified version of Big Team Science (BTS) initiatives will address the above problems; an initial survey resulted in 44 scholars indicating interest in the project. Although BTS is a major movement in natural and social sciences, the unique part of this project is that the valuable components of BTS are being leveraged for school psychology, and the same processes can be used to dramatically improve clinical research, research relevance, and implementation of research to improve evidence-based practices and innovation in the profession.

This consortium will facilitate open science practices and relationships with school districts and other clinical settings. Data sharing, preregistration of hypotheses, and other related practices will make research as transparent and accessible as possible. Relationships with schools, hospitals, health agencies, and other institutions will aid the implementation of research to clinical use. Schools may be sites for research; in exchange, the consortium can provide implementation support and activities to make research useful for them, and therefore, support research relevance.

## The state of trust in science in 66 countries: Results from the TISP Many Labs study

Viktoria Cologna, Niels G. Mede, Sebastian Berger, John Besley, Cameron Brick, Marina Joubert, Edward W. Maibach, Sabina Mihel, Naomi Oreskes, Mike S. Schäfer, Sander van der Linden

**Abstract:** We will present results from the Trust in Science and Science-Related Populism (TISP) Many Labs Study. The project involves a pre-registered, large-scale, online population survey with  $n \approx 70,000$  respondents in  $k \approx 66$  countries on all continents, which was made possible by the contribution of over 230 collaborators. The goal of the study is to analyze the prevalence and correlates of trust in science and science-related populist attitudes across countries. Next to presenting a global assessment of the state of trust in science across the world, and the factors that

influence it, we will be presenting first findings on the public's perceived role of science in society and policymaking and the perceived goals and benefits of science. We will conclude by providing critical reflections on the potential of collaborative global studies for public opinion research and the social sciences.

## Undergraduate student involvement in Big Team Science

Aishwarya Muppoor, Ramsha Ahmed, W. Matthew Collins, Leanne Boucher

**Abstract:** In this talk, we will outline our experiences as undergraduate students involved in the Big Team Science movement. Throughout our experience, we were exposed to the benefits of global collaboration in tackling a research question. We worked with the Psychological Science Accelerator (PSA) on a semantic priming project and learned about the ins and outs of being a part of an international network of science labs, producing reliable, reproducible, and diverse data. We were involved in some of the study material translation and presented at our university's Undergraduate Student Symposium where we had the opportunity to inform others about the importance of Big Team Science and this semantic priming project. In our talk, we will share information on awareness of Big Team Science among our surrounding academic community, how we became involved in the movement, and our perspective for future scientists and doctors.

## [17A] TALK | Developing the Multi-Literacies Open Network (M-LION): The why & how? [🔗](#)

Insiya Bhalloo, Monika Molnar

**Abstract:** We created the Multi-Literacies Open Network (M-LION) to address the lack of appropriate literacy assessment tools for linguistically-diverse communities globally. The goal of M-LION is to connect community members, researchers, clinicians/professionals and students working on literacy globally, in order to develop literacy assessment tools that are free, publicly available, easy to use, and linguistically/culturally responsive.

M-LION's main aims are:

1. Conduct community-centered participatory research with under-served monolingual and bilingual communities globally
2. Develop culturally- and linguistically-responsive literacy assessment tools for under-represented heritage languages; and examine tool validity across populations
3. Share open-access literacy assessment tools

The proposed talk will discuss the following:

1. Rationale: The need for creating M-LION to address a critical research and clinical gap in literacy and child development fields: The lack of methodologically-sound assessment tools in languages other than English. This in turn contributes to the English-centric assessment bias, under/over-identification of bilingual children with speech-language and literacy difficulties, and lack of research in certain heritage languages
2. Methodology and Mission: How we developed M-LION, our current members, and our goals and mission towards United Nations Sustainable Development Goal (SDG) # 4 (Education & Literacy) and community-based research (CBR).
3. Aims: The goals of the first M-LION project (2023 – 2024): M-LION-1 which is to examine predictive validity and disseminate a novel Urdu Phonological Tele-Assessment Tool (U-PASS) with communities globally
4. Future Directions: Next steps and how to join M-LION

M-LION website: <https://sites.google.com/view/m-lionnetwork/m-lion-mission>

**[17B] FEATURED HACKATHON** | ManyManys 1: Developing a standardized procedure to measure and compare reversal learning across animal taxa [🔗](#)

Nicolás Alessandroni & Laurent Prétôt, on behalf of the ManyManys 1 team

**Abstract:** ManyManys 1 (MM1) is a Big Team Science project that will develop and apply a reversal learning task to compare behavioral flexibility across several animal taxa (<https://manymanys.github.io/MM1/>). In reversal learning tasks, subjects are presented with two (or more) different stimuli, with one of them being reinforced. Following the formation of a preference for the reinforced stimulus, the contingencies of the task are reversed, and the subjects must choose (one of) the previously

non-reinforced stimulus. Although past research on reversal learning has advanced our understanding of cross-species differences, the interpretation of results has been challenging due to significant limitations, including the variation in methodological approaches (e.g., stimuli, training, learning criteria, measures), species' differences in morphology (e.g., presence of hands), comparisons between distantly related species (e.g., between as opposed to within taxa), and small sample sizes. Due to its large-scale, collaborative nature, Big Team Science has the potential to surmount these challenges effectively. In this hackathon, we will bring together researchers from diverse fields and backgrounds with the ultimate goal of brainstorming methodological solutions to create an optimal reversal learning task suitable for MM1 implementation.

The discussion will revolve around how to devise a protocol that is both standardized—by keeping the procedure as similar as possible across species—and applicable to a wide range of species by addressing species-specific needs or preferences. In particular, we will discuss how to best standardize certain parameters (e.g., testing densities, arena size, study duration, training phase, experimenter presence/absence, ecological validity of stimuli, output measures, motivation, and stress levels) while accounting for those that we cannot standardize or for which we might expect some variability (e.g., site-specific factors, rearing environment, wild vs. captive-bred populations, species' morphology, preferred/primary sensory modality, subjects' backgrounds, and history).

All researchers—especially those involved in comparative research—are invited to join the discussion. Before the event, participants will get access to ramp-up materials that will help spur the conversation and narrow down critical topics of interest (e.g., stimuli, training, learning criteria, and measures). The hackathon will consist of a short introduction on the current state of the MM1 project (~10 mins) followed by a discussion (~75 mins). For the discussion part, participants will receive a template to scaffold the discussion, identify challenges, and develop methodological solutions. After the conference, the meeting notes will be compiled in a collaborative working document that will be shared with the participants, openly shared through OSF, and leveraged for future MM1 discussions.

[18A] TALK | What can we learn about two million priming values? An update to the Semantic Priming Across Many Languages Project (PSA007) [🔗](#)

Erin Buchanan

**Abstract:** Semantic priming research has been a cornerstone of cognitive studies to examine the nature of knowledge representation and word meaning. The Semantic Priming Across Many Languages project provides a diverse linguistic dataset of priming across more than 25 languages matched on target word. With over 20,000 participants, the study represents the largest study on lexical decision task semantic priming to date in both number of participants and included languages. We will present an update to the project exploring the effect size and cross-cultural boundaries of semantic priming, portraying that not only is priming consistent across languages, but surprisingly similar even across writing systems. We will explore the differences in priming that were significant for native and non-native speakers. Additionally, we will present data examining individuals who appear to use one language (i.e., browser and survey language are the same) versus those who use multiple languages (i.e., browser language and study language are different). Our results provide evidence on the cross-linguistic similarities and differences between languages, as well as potential processing differences in individuals based on their daily language use.

[19A] TALK | Bringing team science to community-academic partnerships: A team science community toolkit [🔗](#)

Madison L. Hartstein & Sheila Cochran-Sanders

**Abstract:** Background: There is a need to extend the scope and application of Team Science beyond the academic biomedical sciences to include other key domain experts: Community Organizations (COs).

**Problem:** Successful engagement in Community Engaged Research (CER) continues to be thwarted by an absence of established bridges to practical partnerships.

**Activities/Methods:** We co-created the first, public-facing Team Science Community Toolkit to facilitate more insightful productive community-academic research partnerships. The toolkit was co-designed with community partners in order to level

the playing field and reduce the hindrance of unfamiliarity with scientific jargon, grant finances, and research methodology. It is intended to create a bridge that invites citizen scientists from the community into the biomedical research endeavor to better address persistent health disparities. During needs assessment qualitative interviews, CO staff suggested that learning more about how the research process works and having tools to support them throughout a scientific project could restore balance and provide greater agency for the CO.

This presentation will describe the co-development process and demonstrate how to use the new toolkit, including some of its interactive components. Use-case applications will be described, and collaboration will be invited to evaluate the toolkit's effectiveness.

Conclusion: The Team Science Community Toolkit is designed to empower self-advocacy and increase equity for Community Organizations engaging in research with academic partners. Many of the tools can be downloaded, customized, and deployed to foster productive communication in community-academic partnerships while also utilizing the principles of Team Science.

## [20A] TALK | Project GARDEN [🔗](#)

Mark Sheskin, Candice Mills

**Abstract:** Project GARDEN is a collaboration across many universities to conduct longitudinal research with children ages 3 to 6 years old. Unlike some of the previous big science collaborations in psychology and child development, instead of focusing on many researchers completing one big study or replicating a set of previous studies, we have focused on building and testing out an approach to large-scale data sharing in child development. Each research team is creating their own research modules, and we have been developing approaches to a) encourage family participation across modules over time and 2) allow behind-the-scenes data sharing of de-identified data. In this talk, we discuss challenges and lessons learned, and invite discussion about how to coordinate projects of this type in the future.

## [20B] TALK | Elaborating on CRediT to capture the nuances of individual contributions in team science [🔗](#)

Tanya Brown

**Abstract:** Despite the growth and diversification of research outputs, such as shared data and code, or technological and software tools, the currency of scientists remains to be publications. In large-scale consortiums, papers typically have 20+ authors. When that many people are sequentially listed, it's fair to say that a dilution of contribution occurs. Further, there is often an inequality introduced amongst the group of names when it comes to deciding who comes first, last or positioned (or some may argue, hidden) in the middle. This has consequences for individuals, particularly early career researchers. Moreover, it can initiate unfortunate tension between team members.

How do we achieve clear contribution tracking and sharing for big team science? Based on my recent experience as part of the ARC-COGITATE Consortium <https://arc-cogitate.com>, I am developing a robust and consequential contribution reporting process. In this talk, I will share the challenges we've faced as a large-scale consortium when it comes to CRediT and contribution. Next, I will elaborate on the method we've proposed as an equitable and effective upgrade to traditional ways of acknowledging the work of researchers.

This effort aims to ensure each individual contributor is appropriately recognized for their work, credited accordingly, and remains an active participant in the decision making process of defining the contributions of a collective.

## [21A] TALK | Open science hardware for realizing more equitable research collaborations [🔗](#)

Brianna Johns, Pen-Yuan Hsing

**Abstract:** Physical hardware underpins research in many disciplines. From computing devices, scientific instrumentation, biological reagents, to remote sensing satellites, researchers rely on hardware to explore and understand the world.

However, research equipment is typically based on closed source (i.e. proprietary) hardware, whose designs are legally restricted, preventing others from studying, building, or modifying them. These restrictions cause several problems such as: lack of

reproducibility; duplication of effort; forced obsolescence; and higher costs. Crucially, the inefficiencies of closed source hardware reinforce global inequities. This is because the design and manufacturing of research equipment is often monopolised by producers in the Global North.

Open science hardware (OSch) is an emerging field of practice which studies and applies the principles of open source hardware to research contexts. Open science hardware provides many benefits compared to its proprietary counterparts. This can include cost savings of up to 87% and proportional to how often it is replicated; quicker iteration of designs; and adaptation to local needs in underserved communities.

Since the 2010s, open science hardware has been developed and used in diverse domains, from environmental monitoring, lab automation, microscopy, to big team collaborations such as the European Organization for Nuclear Research (CERN).

In this talk, we will provide an overview of OSch and the problems it solves. We will share successful examples of open science hardware projects that not only do good science but also address global inequities. The talk will also present the Gathering for Open Science Hardware, an international network working towards the adoption of open source hardware across research lifecycle.

**[21B] TALK | How to find collaborators for cross-cultural studies? Insight from leading a project on physical attractiveness with 404 scholars** [!\[\]\(601b98b71de866467fbdeacf1ccbac3e\_img.jpg\)](#)

**Marta Kowal**

**Abstract:** Successful large-scale cross-cultural projects that yield outstanding results have become increasingly prevalent in contemporary science. Widely recognized organizations, such as the Psychological Science Accelerator and Many Labs, have demonstrated the efficacy of well-established administrative structures, extensive research networks, and rigorous protocols. For many researchers, witnessing the emergence of such projects and attending big data conferences, such as the Big Team Science Conference, can be an inspiration to conduct their research in a cross-cultural manner, fostering the collection of data from diverse countries and participants. However, one of the primary challenges in embarking on this ambitious pursuit lies in identifying and engaging active collaborators. In this talk, I aim to share my

experiences gained from assembling a group of 404 scholars from 105 countries, which resulted in collecting data from 118,715 participants spanning 175 countries in an attempt to encourage all researchers to pursue their big data dreams. I will delve into the most (and least) fruitful strategies for approaching potential collaborators. Attendees can expect to gain practical insight into how to establish their research network.

## [22A] TALK | Modernizing authorship criteria: Challenges from exponential authorship inflation and generative artificial intelligence [🔗](#)

Zhicheng Lin

**Abstract:** Authorship serves as the primary means of acknowledging contributions to scientific advancements within the academic system. However, with the rapid growth of authorship inflation and the expanding utilization of generative artificial intelligence in scientific research, the traditional criterion of “substantial contributions” and the inadequate transparency in author contributions have become increasingly problematic—issues that are intricately linked to research replicability and trustworthiness. To address these challenges, a revamped approach to authorship is proposed. This revised approach replaces the rigid requirement of “substantial contributions” with a more flexible criterion of “sufficient contributions,” which more accurately reflects the current state of widespread scientific collaboration. Moreover, the updated approach broadens the scope and granularity of authorship-worthy roles by integrating the Contributor Roles Taxonomy (CRediT) and Method Reporting with Initials for Transparency (MeRIT) systems. Crucially, it moves away from the binary (all-or-none) classification typically employed, by assigning a graduated contribution level to each author in each role, denoted using percentages or an ordinal scale, which can be coarse (e.g., lead, equal, and supporting) or more fine-grained (e.g., minimal, slight, moderate, substantial, extensive, and full). Embracing the redefined authorship criteria to focus on proportional, role-specific credit allocation helps to foster equitable, transparent/open, and replicable/trustworthy science.

## [22B] TALK | Music Ensemble: A multi-lab study on musicians and nonmusicians [🔗](#)

Francesca Talamini, Massimo Grassi

**Abstract:** Musicians are often regarded as a positive example of brain plasticity and associated cognitive benefits. A frequently observed behavioral finding is a short-term memory advantage of expert musicians (e.g., with 10 years of music training) over nonmusicians. Although available meta-analysis reports that the effect size of this advantage is medium ( $d=0.5$ ), results tend to vary substantially from study to study, and no study was adequately powered to estimate reliably an effect of such size. Moreover, most studies use very heterogeneous methodologies, thus making it difficult to have clear comparisons. For this reason, together with several experts in the field, we have designed a multi-lab study to shed light on the topic. Our ultimate goal is to provide a community-driven shared and reliable estimate of the musicians' memory advantage (if any) and set a method and a standard for future studies in neuroscience and psychology comparing expert musicians and nonmusicians. The design of the multi-lab study started in 2019, was first sent as a registered report in 2021 and was accepted in February 2023. Data collection is ongoing. Over 30 research units from 15 different countries will recruit about 700 expert musicians and 700 matched nonmusicians. Short-term memory is measured for different types of materials. We also measure cognitive, personality, and socioeconomic factors that might mediate the difference. This work sets the basis for sound research practices in studies comparing expert musicians and nonmusicians, and contributes to the ongoing debate on the possible cognitive benefits of musical training.

## [23] KEYNOTE | Africa Open Science Platform [🔗](#)

Nokuthula Mchunu

**Abstract:** The growing momentum for open science around the world has provided an opportune moment for a truly equitable access to information and contribution to the global body of scientific knowledge. Open Access has been the drive and the heart of this trend, however, despite this gap in equitable access and contribution to knowledge has widened. This is due to unintended results of the initial push of moving from pay-walls hindering access to information to new-wall of paying to contribute to information. Africa and other continents like it, despite the huge potential for a

knowledge-driven economy, the African academic and research community is missing out. The cost of publishing for most open access journals can go up to thousands of dollars which can be higher than the research grant that was received by an average researcher in the continent. Sustainable strategies to promote scholarly participation and this visibility are required and a need to view knowledge/science as public good. However, recognition of these platforms for this peer communication still needs to be accepted and in addition responsible research assessment and incentive should follow. Africa needs its own platform connected to other global platforms, that will support both publication outputs and open data activities that will promote African scholars. This platform should include offering PDI services to the output deposited in the platform. It is also envisaged that this platform can be used to house output of funded projects in the continent from the various agencies that contribute to research in Africa thus making this information accessible to the scholarly community in the continent.

## [24] FEATURED PANEL | Open Science in developing countries



Hu Chuan-Peng, Alma Jeftic, Leonardo Seda, Samiul Hossain, Zhiqi Xu, Nikita Ghodke

**Abstract:** Open science is gaining momentum as the prevailing paradigm within developed nations and enjoys support from UNESCO. However, open science in the developing world has gained less attention. Recently, researchers from developing countries have started to make their voices heard, calling for a re-design of open science to suit developing countries ([Onie, 2022, Nature](#)), support for grassroots open science networks ([Jin et al., in press, AMPPS](#)), and to avoid potential harm ([Ross-Hellauer, 2022, Nature](#)). In this panel discussion, Six speakers, all collaborators on the collaborative initiative “Practical Guidance for Promoting Open Science in Developing Countries,” will cover multiple aspects of promoting open science in developing countries. Hu Chuan-Peng will give an overview of barriers, opportunities, and pitfalls encountered by researchers in developing countries. Alma Jeftic will share their experience of implementing open and transparent practices. Leonardo Seda and Samiul Hossian will share their experiences conducting replication studies. Nikita Ghodke will bring together how education, training, and communication-building help the growth of open science in developing countries. Concluding the panel, Zhiqi Xu will share their experience in reaching participants in rural areas.

## [25A] SYMPOSIUM | Making best use of Big Team Science: New thoughts about the scientific record [↻](#)

### TALK 1 | Octopus: the perfect publishing platform for Big Team Science

Alexandra Freeman

**Abstract:** Funded by UKRI and launched last year, Octopus.ac is a publishing platform designed to help and reward those wanting to demonstrate best research practice. It has been developed in partnership with the UKRN and built by Jisc.

Instead of publishing 'papers', Octopus supports 8 different types of publication, from Research Problem, through Theoretical Rationale, Method, Results, Analysis, Interpretation to Real World Application and Peer Review. These publications are linked in branching chains. This means that once a Method is published, multiple Results publications can be linked to it; once Results publications are published, many Analysis (or meta-analysis) publications can be linked to it. This supports pre-registration, open peer review, reproducibility and the Many Labs approach, and creates a more collaborative environment. Each researcher gets credit for the work they do, since author groups can be smaller on these smaller-unit publications. Octopus is free and instant to publish in, free to read, and can be treated like a pre-print server or repository alongside a journal paper.

In this talk, Octopus' creator, Dr Alex Freeman, will outline the full thinking behind and capabilities of the platform and how it is designed to support collaborative and Open working practices.

### TALK 2 | The Heliocentric model of open science documentation for Big Team Science

Monica Gonzalez-Marquez

**Abstract:** Much of Open Science's efforts have focused on outcomes rather than processes, neglecting that what gives science its weight is the rigor of the process by which information was produced and justified, and that hence, exhaustive documentation and scrutiny of those processes, in addition to output data, are the

bedrock of a reliable scientific knowledge base. A cursory examination of Open Science infrastructure supports our argument: overwhelming resources go towards archiving output data or supporting Open Access, but very little goes to any of the other facets of Open Science, such as Open Methodology. Pressing as these issues are, they become even more urgent in the context of Big Team Science, given the sheer magnitude of effort involved in doing science. If the reliability and reproducibility of science depends on accurate records of who did what, when, where, why and how, it becomes imperative to use a paradigm that allows us to easily and systematically keep track of all of this information. We align with past advocacies on the need to reform knowledge documentation and communication away from the paper-centric publication system by proposing The Heliocentric Model of Open Science Documentation (Helio), a model that encompasses the entirety of the research process. We understand that there is always a chasm between theory and practice. In this spirit, we use eLabFTW (<https://www.elabftw.net>) to present a concrete example of what holistic Open Science documentation can look like, from research question conceptualization to dissemination of findings.

In this unconference, we will describe the theoretical model and introduce the electronic notebook instantiation. Our goal is to use community input to discuss the strengths and weaknesses of the work we have done so as to create a tool that is useful, easy to learn, easy to use, and that can therefore, become easily integrated into current workflows so as to ultimately make documenting reliable science as painless as possible.

**[25B] HACKATHON** | How can we increase diversity in infant studies?: Extending inclusivity toward developing nations for 'better' and 'bigger' Big Team Science [🔗](#)

Nikita Ghodke, Munna R. Shainy

**Abstract:** Over the past few years, diversity in academia has been a topic of conversation in almost all branches of research in Psychology and allied sciences. However, diversity concerns do not just stop as a representation issue, lack of accessibility and awareness are some deeper concerns. In the past decade, developmental scientists have successfully published multiple papers that have helped us map the human development of the brain and cognitive systems from infancy. Nonetheless, there is a bigger gap that arises when the collected data has been limited

to the western/WEIRD population predominantly (Dotson & Duarte, 2020; Green et al., 2022; Singh et al., 2023). With the limitation in labs in several developing nations, it has been challenging to conduct research as per the current framework of developmental research due to many reasons, including the lack of logistics and training. Although big team science projects are a leap of faith for increasing generalizability in current academic literature, the barriers to participation from developing nations are still a rising concern, and thus, the representation is not “big enough.” While there are active efforts to increase this gap, the concerns with representation are more than just surface level but deeper than one might imagine.

The session leaders propose (1) discussing these concerns and looking at ideas of including those infant researchers that have no space to limited access to resources, especially those from developing nations, (2) how the gaps in training can be bridged through open science initiatives and big team science exclusively for those trainees from developing nations and (3) coming up with an inclusive approach to methodology in infant studies that can be generalized beyond barriers and borders.

There are no prerequisites for this session. We appreciate everyone interested in the above domain joining us; however, if you also have a background and or are interested in infant research, that would be of great interest to this session. Everyone is welcome to join in as long as you are interested in open science, diversity, and inclusivity and can be open to understanding the concerns of those from the developing nation.

This session aims to foster diversity and inclusivity as its prime themes for this hackathon session. Both the session leaders are from a developing nation and from underrepresented groups; one of them identifies as a disabled researcher. We aspire to promote more dialogues of the concerns of those residing and are from developing nations, especially with research in infant-toddler studies. This session's goals are vested in discussing ideas for improving visibility, representation, and inclusivity and we also aim to lay down concerns and highlight the need to look at the diversity and inclusivity concern from the roots than the surface level through collaborative efforts.

## [26A] TALK | Social cognition and psychopathology: Do we need BTS? [↻](#)

Ekaterina Pronizius

**Abstract:** In clinical psychology, as in almost every research field, the significance of collaborative efforts cannot be overestimated. So, the question is not whether we need BTS to reveal the complexity of the social mind but how we shall achieve this, especially when studying vulnerable populations. At the beginning of the session, I will briefly present a study design of an ongoing cross-cultural clinical study investigating self-other distinction in patients with borderline personality disorder. SOD is the mechanism that allows humans to disentangle self- from other-related representations. According to a recent theoretical framework, individuals with borderline personality disorder experience struggles in the social domain due to the lack of flexibility in switching between self and other-related mental representations. For example, they show a limited capacity to inhibit imitative tendencies, separate personal feelings from those shared with others, and accurately see the world through another person's eyes. While the targeted sample size would allow the investigation of key theoretical assumptions with sufficient power, the complexity of this BTS collaboration bears challenges and limitations. In the second part of the session, I would like to discuss with the community potential strategies (e.g., networking, patient access, funding, etc.) for establishing a BTS group in the domain of clinical psychology.

## [27A] PANEL | Rewarding and recognising team infrastructure roles: Successes and failures so far? [↻](#)

Danny Garside, Esther Plomp

**Abstract:** Team Infrastructure Roles (roles that support research through specialized skills) are vital to the modern scientific enterprise, but the reward and recognition system for people in these roles needs development if we are to support people to have sustainable and successful careers. In a recent publication titled "A manifesto for rewarding and recognising Team Infrastructure Roles" (<https://doi.org/10.53962/knm3-bnvx>), we suggested four systems-level changes that we believe are needed if we are to address existing issues with the reward and recognition available to TIRs:

1. Shift the focus of academic research to appropriately value the process of the endeavor, not only the prestige of the outputs.
2. Expand the system for recognizing contributions, going beyond the implementation of CRediT, by acknowledging contributions that are not visible in the form of authorship.
3. Create mechanisms for validating the quality and impact of non-journal outputs akin to peer review.
4. Standardise and professionalize roles and pathways for career development.

In this reverse-panel (a panel where the panelists ask questions of the audience), we invite panelists and attendees to share their practical experiences of examples where the above changes have been tried. What has worked? What has failed? What do we need to support in order to ensure their wider adoption?

Our hope from this session is to share concrete examples of systems which attempt to better reward and recognise TIRs, so that we can all learn from our collective successes and failures to date, with the goal of adding these examples (where appropriate) to the documentation within The Turing Way

(<https://the-turing-way.netlify.app/collaboration/research-infrastructure-roles.html>)

## [27B] HACKATHON | Designing a workflow for big-team, large-scale, collaborative systematic reviews & meta-analyses [🔗](#)

Simon Kucharsky, Ingmar Visser, Mike Frank, Martin Zettersten, Anna Exner, Alex Carstensen, Nicolas Alessandroni, Laurent Prétôt

**Abstract:** Big-team science projects typically involve surveying, mapping, reviewing, and meta-analysing the literature about the phenomenon under study. Conducting literature reviews or meta-analyses within large teams poses unique challenges and intricacies that require careful consideration. For instance, frameworks drawn from the medical literature (e.g., PRISMA) can be helpful but are not tailored specifically to psychology and the behavioral sciences, where the literature is often complex and fragmented, and specific outcomes of interest are far more heterogeneous across studies. In this hackathon we would like to explore the best practices for conducting systematic reviews and meta-analyses within large teams, including the analysis and integration of large bodies of literature. The availability of a collaborative workflow for

such integration can facilitate mapping phenomena of interest and thereby aid theory formation.

Questions that we will address in the hackathon include:

1. What are the key considerations for conducting literature reviews or meta-analyses within BTS projects? (e.g., scope, research question, inclusion criteria, search strategy, data synthesis, reporting standards, variation in design of prior work) Should the approach/workflow vary depending on the goal of the review (e.g. literature review vs. systematic review vs. meta-analysis)?
2. What are common obstacles to conducting literature reviews and meta-analyses within BTS projects? How can teams address them proactively?
3. When is a meta-analysis necessary to back-up the design of a multi-lab study?
4. How do we control/evaluate/obtain inter-coder reliability?
5. What are the requirements for authorship models?
6. How can we make the studies inclusive and accessible for ECRs and (under-)grad students?
7. How can we take a team-based approach to ensuring that systematic reviews reflect the academic literature of all communities participating in big-team science projects?
8. Which tools are available to support collaborative reviewing/meta-analysis? Is there any potential for the use of new artificial intelligence tools to simplify searching, screening, and extracting effect sizes?
9. What analytic strategies are especially important in the context of planning big-team science projects? (e.g., identifying gaps in the literature and publication bias, tracking sources of heterogeneity, power for evaluating moderators, treating nested samples esp. culture)
10. How can we integrate the evidence from meta-analyses and new big-team science data collection efforts (e.g., multi-site replications)? (i.e., “mega-analyses”)
11. What are the best ways to make the data and outcomes from meta-analyses open, reproducible, and reusable? (e.g., MetaLab)

The organizers have a background both in coordinating big-team science projects (through [ManyBabies](#) and [ManyManys](#)) and in leading collaborative, community-driven meta-analyses (e.g., Zaharieva et al, 2021; Bergmann et al., 2018). The goal of the

hackathon will be to create an open document describing best-practices and resources for researchers conducting open, collaborative systematic reviews and meta-analyses. The hackathon will also provide opportunities to tackle broader questions about the challenges to implementing big-team science projects.

## [28A] TALK | Where can Big Team Science go next?

### Foundational tests, unique populations, and strict theory testing



John Protzko

**Abstract:** Big Team Science is characterized by the collaboration of numerous, potentially globally dispersed, independent research laboratories conducting the same study at the same time. The abilities of such collaborations for testing replicability and generalizability are profound and represent a groundbreaking shift in research methodology. Our talk highlights the untapped potential of Big Team Science.

First, Big Team Science has the capacity to harness collective intelligence, enabling the identification and comprehensive testing of studies that form the bedrock of specific theories. This approach could not only fortify the foundations of these theories but also shed light on any gaps or inconsistencies that may exist within them.

Second, we discuss how Big Team Science can capitalize on its far-reaching data collection capabilities to target hard to reach populations. By gaining access to these hard-to-reach groups, this approach opens the door for significant theoretical advancements in psychology. This potentially offers fresh insights and deeper understanding of diverse populations and contexts, enriching the scope and applicability of psychological theories.

Third, we propose the innovative merger of Big Team Science with adversarial collaborations. This union would subject psychological theories to stringent experimental tests, ensuring robustness and reliability. The strict verification and confrontation of theories against empirical evidence could instigate transformative changes in our understanding of psychology.

The evolution of Big Team Science creates exciting new prospects for the progress of theory testing and development. The emergence of this collaborative approach may pave the way for a new era of scientific discovery and knowledge production.

## [29B] WORKSHOP | Thinking systemically: Building big teams on purpose

L. Michelle Bennett, Roger Schwarz

**Abstract:** When we think about building teams, we think about the process systemically and when we work with teams that are experiencing challenges, and want to overcome them, we use a collaborative and systemic approach. Teams exist as systems and can range from simple in form and function to highly integrated and complex with many moving interconnected parts. We are strong advocates for designing teams on purpose and to align with the level of complexity, integration, and interconnections needed to successfully attain their goals, not too little (under designed) and not too much (overdesigned).

To build a team from the ground up or to intervene with a team well underway to help them overcome challenges requires having a strong model of team effectiveness with which you can develop a plan for maximizing team effectiveness. This plan can serve as a guide or an ideal against which you can evaluate what is working well and what can be improved in an existing team. In the work we do, team design and team improvement start with a shared team mindset because how you think is how you design teams, and the design will directly impact the results the team gets. We advocate for the adoption of the Mutual Learning mindset in teams because it is highly collaborative in nature, it promotes transparency and curiosity, and it lays the foundation for very strong working relationships that instill trust and psychological safety.

This session will introduce participants to:

- the Team Effectiveness Model for Science,
- demonstrate how to use it to build teams or improve them when they are facing challenges,
- and provide participants an opportunity to work with their teams (developing or existing) to use the model in real time, and
- debrief as a full group on the experience.

We welcome individuals to attend without team members, because the model can be easily related back to the team. If individuals can attend with some team members, they can have the experience of applying the method together and collaboratively.

## [30A] UNCONFERENCE | Mega-syntheses: A framework for crowdsourcing research evaluation and syntheses [↻](#)

Jay Patel, Joel Chan

**Abstract:** Scholars, laypeople, and practitioners all try to surf the same information tsunami daily. This tsunami includes scientific claims like the supposed invention of room-temperature superconductors, nudges to promote behavior change, and strategies to enhance teaching. Each claim fights for our limited attention, enthusiasm, and approval and under time constraints, even seasoned scholars find it difficult to evaluate mistaken claims and synthesize them into the scholarly literature. Clearly, we do not yet live in an ideal scholarly communication ecosystem. Traditional peer review and research synthesis systems are not sufficient. They remain too lethargic, opaque, and poorly structured for guiding our decision-making. To resolve this information overload, we use crowdsourcing methods. Recently, mega-studies conducted at one site and ManyLabs studies conducted at multiple sites have further matured research practices. We categorize these projects as successful applications of crowdsourcing for primary research (ManyLabs experiments) and secondary research (ManyAnalysts projects). To date, these innovative crowdsourcing approaches to conducting primary and secondary research have not yet been systematically complemented by sophisticated crowdsourcing methods in tertiary research (syntheses/reviews). A few options like collaborative meta-analyses (OpenMeta) and review paper authoring tools (ManuBot) exist and gesture towards faster, more collaborative, and open futures. However, we think that these synthesis systems are too traditional; they are rooted in familiar and imperfect methods like meta-analyses, technologies like R packages to conduct meta-analyses, and community models like epistemically homogenous scholars. We wish to build on a cross-disciplinary and contemporary literature base of philosophy, metascience, psychology, and technology to develop a broader vision of open, collaborative research synthesis that innovates our:

### 1. Methods

- tradition: meta-analyses and qualitative reviews
- proposal: We develop a method that guides synthesizers to learn, reorganize, critically appraise, synthesize (triangulate), and implement research in practice. This occurs at ontological, theoretical, empirical, and implementational levels. We call our method the Intelligent Research Synthesis Method.

### 2. technologies

- tradition: documents with static text and figures
- proposal: We propose designing and developing an interactive visualization program that reveals the research decisions in studies, the impacts of hypotheticals (What ifs?), and connections between ontologies, theories, empirical data, and implementational recommendations. We call this technology the Intelligent Research Synthesis Program.

### 3. communities

- tradition: epistemically homogenous communities
- proposal: We advocate for an epistemically diverse community of research synthesizers involving authors, stakeholders, synthesizers, and apprentices seeking to learn synthesis from the beginning of each project to the end. We call this the Intelligent Research Synthesis Community.

In this unconference, we will describe our framework for developing and testing what we call [[mega-syntheses]]. If successful, mega-syntheses will scaffold peer review and interdisciplinary connections of diverse research. Although our framework can be implemented by any community, we believe that big team science would be most aligned with helping mature and apply it. We can evolve research evaluation and synthesis from disparate, superficial, and unusable to integrated, deep, and usable.

## [31A] TALK | How to ensure high quality, ethically-shareable video data in Big Team Science: Training, quality assurance, and curation [🔗](#)

Kasey C. Soska, Orit Herzberg, Karen E. Adolph, Catherine S. Tamis-LeMonda, Rick O. Gilmore

**Abstract:** For big team behavioral science, videos with identifiable information serve crucial roles beyond research data—to document methods, train experimenters, ensure protocol fidelity, and provide curated, ethically-shared data for broad reuse. We describe best practices for video data (re)use from our Play and Learning Across a Year (PLAY) project—which generates videos of natural home activity, home tours, and questionnaires from 1000 infant-mother dyads. 70+ investigators designed the PLAY protocol. A central team remotely trained 32 data collection sites across the U.S. Videos of entire visits serve as training materials and protocol documentation ([playproject.org](http://playproject.org)).

Every family (N=385, data collection ongoing) gave permission to share raw, identifiable videos on Databrary.org. Videos, demographics, and questionnaires are curated and uploaded by experimenters after each visit. A two-phase quality assurance (QA) process ensures protocol adherence and usable data for behavioral coding. First, in “heavy” QA (6-8 hours per session), central team members provide feedback on all videos from a session. They mark if and why a session fails QA, following specific criteria. Second, after 3 passes on heavy QA per experimenter, they conduct “light” QA (2 hours per session) and pass the session or revert to heavy QA pending major issues. High-quality big team data is possible: 312/385 visits (81%) passed QA. Most failures were pilots or did not meet inclusion criteria. Video recording was not intrusive: Only 9 children were distracted by the experimenter. Videos, questionnaires, and QA notes—even sessions failing QA—will be openly shared with authorized investigators on Databrary.

## [31B] TALK | Using design sprints to move teams forward [↪](#)

Maureen Brudzinski

**Abstract:** Research teams are increasingly tasked with creating not only a body of knowledge but also a way for others to access and/or use this knowledge. Researchers are often reluctant to move away from their knowledge production comfort zone, and this reluctance may be compounded by other problems typical of teams, including having difficulty making decisions or feeling an unwillingness to take intellectual leaps.

Design Sprints use human-centered design principles to allow a group to understand multiple perspectives on a given problem, create viable solution options, and move forward rapidly to a first prototype. They help move teams from “analysis paralysis” to a first iteration of an intervention while simultaneously making space for individual ideas and opinions to be shared.

At the Michigan Institute for Clinical & Health Research (MICHHR), we have used Design Sprints with various research teams in different scenarios, including creating a COVID caregivers' toolkit and designing a medical deterioration alert system. Using examples from some of these sessions, this talk will explain what the Design Sprint process is, when it is best applied, and what results can be expected.

## [32] CLOSING REMARKS

Heidi Baumgartner, Drew Altschul, Julia Espinosa, Nicholas Coles

It's not a goodbye, it's a see you later. Join us for closing remarks from the 2023 Big Team Science Conference organizers!