

## NITheCS Call for Focus Areas: Request for pre-proposals

**Opening date: 1 September 2021**  
**Closing date: 27 September 2021**

### BACKGROUND AND AIMS

NITheP supported the South African Theory School (SATS) and five Research Programmes in 2020:

- Computational studies of optoelectronic properties and materials engineering of photoactive layer in Perovskite solar cells
- Theoretical and computational astrophysics foundations for HIRAX big data
- Theoretical modelling for genomic contact tracing
- Machine learning meets theoretical physics
- Big data science applied to nuclear physics

Each programme was supported with a research grant of R500 000.

This call for pre-proposals is **open to all NITheCS Associates**. It intends to promote collaborations in the network of Associates and advance high impact research that addresses grand societal challenges, such as:

- Climate change and sustainability
- Future-proof education and skills
- Health and wellbeing
- The future of production and employment
- The future of society

In particular, the call wants to motivate NITheCS Associates to engage in a multidisciplinary, inter-disciplinary and transdisciplinary way across the relevant scientific themes, namely:

- Astronomy and Astrophysics
- Data Science
- Earth Systems Modelling and Climate Change Modelling
- Mathematics
- Quantitative Biosciences
- Quantitative Finance
- Statistics
- Theoretical Physics

Applicants are encouraged to embrace the principles of Open Science.

## EXPECTATIONS

Successful applicants will be expected to:

- present the outcomes of the research in NITheCS Colloquia and Webinars,
- organise a Mini-School to introduce a broad audience to the Research,
- publications in high impact journals.

## SUBMISSION PROCEDURE

Applications are welcome from collaborations that include Principal Investigators of at least two different institutions or disciplines. Preference will be given to applications involving a Historically Disadvantaged Institution (HDI).

Pre-proposals in free format, not exceeding 5 pages, should address the following points:

- Description of the research question
- Description of the collaboration
- Description of the potential scientific and societal impact
- A data management plan
- A one-year research plan, describing the role of the different partners
- A research budget not exceeding R1 000 000.

## ACTIVITIES SUPPORTED BY THIS CALL

- Ad hoc research assistants and postdocs
- Buying-out of (partial) teaching time for Principal Investigators
- Fractional appointments
- Running expenses
- Mobility between members of the collaboration
- Publications fees for high-impact open access publications.

Hardware and software costs are not supported by this call.

## DEADLINES

Kindly submit pre-proposals to [info@nithecs.ac.za](mailto:info@nithecs.ac.za) by latest Monday, **27 September 2021**.

The full proposal stage will start on **4 October 2021** and selected applicants will be asked to submit a full proposal by Monday, **25 October 2021**.

## ANY QUESTIONS?

For further information, please contact Prof Francesco Petruccione, Interim Director of NITheCS: [francesco.petruccione@nithecs.ac.za](mailto:francesco.petruccione@nithecs.ac.za).