

CALL FOR PROPOSALS – SCAHT RESEARCH PROGRAMME

The Swiss Centre for Applied Human Toxicology (SCAHT, <http://www.scaht.org/>) was founded in 2009 and registered as a foundation in 2014. Funded by the Swiss Confederation and the Universities of Basel, Geneva, Lausanne and the FHNW School of Life Sciences, its mission is to advise authorities, promote research, and provide education and training in human toxicology.

SCAHT research aims to fill an existing gap in Switzerland between academic scientific research and regulatory requirements. Priority is given to major human health problems of regulatory concern, and projects are conducted within the framework of a coordinated research programme. SCAHT participates as appropriate in national programs involving toxicology issues; for this purpose, it seeks relevant partners.

Objective of the call

SCAHT has built extensive and internationally competitive competences in the domains of hormone alteration & adverse effects on human health, and adverse effects on the central nervous system (for a list of SCAHT-funded, peer-reviewed publications refer to <https://www.scaht.org/en/research/publications/>). The 2021 – 2024 research programme comprises 5 core projects looking at steroid alteration and male fertility, occupational exposure to endocrine disruptors, xenobiotics disrupting the corticosteroid-androgen balance, neurotoxicity of solvents, and bioanalytical & metabolomic readouts for toxicology.

To complement its existing research competences and to broaden its scientific network, the SCAHT is making funds available for specific research contracts which represent a meaningful enhancement of the existing core research areas of the 2021 – 2024 research programme. Thematically, project proposals should fit into one of the following categories:

A. Toxicology and female-specific diseases

Whilst there are extensive efforts to study male infertility and reproductive disorders, investigations into the role of xenobiotics promoting female-specific diseases (except for breast cancer), mainly reproductive disorders, have been neglected. Thus, there is a need for establishing and/or improving testing systems for the identification of potentially hazardous substances as well as for the characterisation of the mechanisms of action of such compounds that contribute to female-specific diseases.

B. Developmental Neurotoxicity (DNT)

There is increasing societal concern over a potential link of the rise in children's neurodevelopmental impairments (e.g. autism, cognitive functions, ADHD, dyslexia, learning disabilities) with chemical exposures and/or other stressors (nutrition, stress, and gene-environment interactions). International regulatory work groups (including participants from SCAHT) agree that current data requirements for *in vivo* developmental neurotoxicity (DNT) testing are not sufficient to screen and mechanistically characterise potentially hazardous compounds, and that there is an urgent need for a generation of reliable and relevant information using new approach methods¹.

C. Mixtures

In daily life, organisms are exposed to a multitude of substances from various sources simultaneously. Adverse effects caused by mixtures of substances – so-called cocktail effects - may differ from effects observed with a single substance due to additive and synergistic effects. Thus, there is a need to better understand human exposure to chemical mixtures and to generate reliable data regarding individual and shared modes of action.

¹ Fritsche E, Grandjean P, Crofton KM, Aschner M, Goldberg A, Heinonen T, Hessel EVS, Hogberg H, Bennekou SH, Lein PJ, Leist M, Mundy WR, Paparella M, Piersma AH, Sachana M, Schmuck G, Solecki R, Terron A, Monnet-Tschudi F, Wilks MF, Witters H, Zurich MG, Bal-Price A (2018). Consensus statement on the need for innovation, transition and implementation of developmental neurotoxicity (DNT) testing for regulatory purposes. *Toxicol Appl Pharmacol*, 354: 3-6.

D. Substances of concern and their replacement

As the demand for safer chemicals grows, the field of alternatives assessment is becoming increasingly important in guiding the transition towards safer, less toxic alternatives. Regrettably, some substances of concern (e.g. Bisphenol A, phthalates, parabens, some benzophenone UV-filters, PFAS) are substituted with chemicals of different or unknown hazards. Data gaps or uncertainty in the existing data can complicate decisions about which alternative is safer, particularly if multiple options have similar hazards. Therefore, it is key to improve knowledge and understanding of hazards and risks of these substances of concern and their replacements.

Research objectives should be distinct from and add value to the already agreed projects. Proposals will be prioritised in accordance with their ranking in the evaluation.

Criteria

- The project is laboratory- or computer-based and should have a clear identity and purpose.
- Application- and impact-oriented in line with the SCAHT vision and its strategic research framework (see separate document).
- Project lead must hold a position in research in a Swiss institution*.
- The duration is 24 months.
- Funding is limited to a maximum amount of CHF 70'000 per annum**.
- Successful projects are expected to be co-funded through in-kind contributions***.

Evaluation and Selection

- The guidelines as stated in the application template should be followed.
- Submission deadline for projects: **08 August 2022**

Evaluation:

- Proposals will be evaluated by external experts, the SCAHT Scientific Advisory Board (SAB) and Management Board, and according to the criteria for research project support (see Annex).
- The evaluation will rank projects according to how well they respond to the call as well as based on their scientific soundness.

Selection process:

- The SCAHT will decide on which projects will receive funding based on (i) the available funding, (ii) the external evaluation and (iii) input from the SCAHT SAB and Management Board. Applicants will be given feedback in first half of November.
- Approved projects will be supported subject to a performance agreement and funding contract with the SCAHT being completed.

* Current SCAHT members and affiliated groups are not eligible to apply for funding.

** Funding cannot be spent for own salary.

*** Research projects are expected to provide sufficient resources of their own to ensure proper conduct and completion of the project in the form of staff, infrastructure, materials and equipment. These resources form part of the beneficiary's in-kind contribution to the SCAHT and will, as a minimum, have to match SCAHT funding. As part of the Annual Report the beneficiary will be asked to list in-kind or other contributions, he/she has received in the accounting year.

ANNEX to Call for Proposals

SCAHT Criteria

for

evaluation and monitoring of investigator-led and regulatory science research projects

**Approved by Management Board
on 24 June 2021**

SCAHT is fully committed to offer fair and equal opportunities. The defined criteria for evaluation and monitoring of research proposals and projects are attainable and applicants receive equal treatment regardless of any personal features.

1. Scientific excellence, rationale and output of the project
 - a. Suitability of methods and feasibility
(clearly defined objectives, milestones and deliverables)
 - b. Contribution to regulatory science
(e.g. adverse outcome pathway development; next generation risk assessment)
 - c. Translational aspects (e.g. validation of biomarkers/test, model validation)
 - d. Scientific track record of the applicant and expertise in view of the proposed project
2. Contribution to the global objectives of SCAHT
 - a. The overall SCAHT research strategy
 - b. Strengthening the SCAHT research network
 - c. Supporting the position of SCAHT as a national research centre for applied human toxicology
3. Provision of additional group resources 'in kind' in support of the SCAHT project, e.g. infrastructure, equipment, consumables and wo*manpower.
4. Contribution to supporting the position of SCAHT as a national infrastructure in applied human toxicology
5. Experience distribution (project leads should be spread among both younger and experienced scientists).