**Terms of Reference (ToR) for CHESS-Hub**

1. **Name:** CHEmical Structural Solutions for metabolites - Hub (CHESS-Hub)

2. **Aim and Objectives**

The CHESS-hub’s mission is to advance the field of chemical structural elucidation for metabolite identification and biomarker discovery through collaboration, knowledge exchange, and training in spectroscopic techniques, including nuclear magnetic resonance (NMR), mass spectrometry (MS), infrared spectroscopy (IR), ultraviolet-visible spectroscopy (UV-Vis). The hub aims to connect researchers across career stages worldwide, promote interdisciplinary approaches, and drive innovation in spectroscopic and computational methods for molecular identification.

2.1 **Aim**

To foster international collaboration, facilitate knowledge sharing, and drive innovation in the structural elucidation of metabolites using advanced spectroscopic and computational techniques.

2.2 **Objectives**

* Promote methodological innovation and best practices in spectroscopic-based metabolite identification, applicable across diverse research fields including but not limited to: metabolomics, nutrition, agriculture, environmental sciences, microbiome, natural products, and biomarkers discovery.
* Organise webinars, seminars, workshops, conferences, collaborative projects, training sessions.
* Facilitate open‑access to training materials, databases, and standard operating procedures (SOPs).
* Serve as a platform for researchers, particularly those at the early career level, to gain visibility, mentorship, and networking opportunities.
* Encourage cross-disciplinary exchange amongst academic, clinical, industrial, and regulatory communities.

3. **Membership and Members**

3.1 **Membership**

Membership is open to researchers, practitioners, students, and industry professionals worldwide.

**Membership categories:**

* **Full Member:** Qualified professionals actively engaged in relevant fields.
* **Student Member:** Individuals currently enrolled in undergraduate or postgraduate programmes.

3.2 **Member Expectations**

Members are expected to actively participate in CHESS-hub activities, contribute data and methodologies where appropriate, and adhere to the Code of Conduct and data-sharing policies.

4. **Governance Structure**

4.1 **Board of Directors**

The board of directors is a sixteen-member panel elected for a two-year staggered term and can be renewed once. The exception applies to the founding directors, including Dr Jia Li, Dr Samuele Sala, Prof. Joanna Godzień) in their first term. The board comprises at least 50% of early career researchers (ECR, within 8 years of PhD completion excluding career breaks).

**Roles:**

* Chair
* Deputy Chair
* Secretary
* Communications and Organisation Director
* Student Member Representatives
* Industry Members Representatives

**Responsibilities:**

* Define technical agenda and strategic plan
* Oversee CHESS-hub initiatives (webinars, workshops, training materials, dissemination of SOPs)
* Manage member recruitment and communications
* Identify funding initiatives
* Build industry connections
* Coordinate with the Senior Advisory Group
* Liaise with professional societies (e.g., SMR, Metabolomics Society, IUPAC) and journals.
* Establish working groups on technical or methodological challenges.

4.2 **Senior Advisory Group**

**Senior Advisory Group** (SAG) comprises of up to 8 senior and highly experienced scientists, globally recognised experts in spectroscopic methods and structural elucidation. The SAG is an eight-member panel selected by the Board of Directors based on reputation, leadership, and diversity of expertise. SAG members serve a three-year term and can be renewed once.

**Responsibilities:**

* Provide technical oversight and mentorship
* Guide strategic decision-making and offer strategic advice
* Ensure scientific rigor across initiatives
* Act as ambassadors, promoting the hub’s mission and visibility

5. **Activities and Outputs**

* **Annual Meetings or Satellite Sessions:** showcase research, present case studies, and discuss emerging techniques.
* **Webinar or Seminar Series and Virtual Workshops:** offer tutorials on spectroscopy tools, software, and protocols.
* **Best‑Practice Protocols & SOPs:** develop and release community‑driven standards.
* **Collaborative Projects & Challenges:** host initiatives, e.g. inter-laboratory spectral interpretation studies, database development for unknow peaks etc.
* **Open Resources:** Provide access to training datasets, annotated spectra, and reference compounds.
* **Newsletter and Bulletin:** share periodic updates, member highlights, and developments in the field.
* **Publications:** Publish consensus guidelines, position papers etc.

6. **Operations and Administration**

* **Meetings:** Board meets quarterly; SAG meets twice per year, typically virtually.
* **Decision-making:** Board decisions are made by majority vote; SAG is consulted on strategic matters.
* **Financial Model:** Initially, there is no membership fee. Modest dues may be introduced for Full Members in the future. Funding will be sought through event fees, sponsorships, small grants, and institutional support.
* **Secretariat Support:** Support will be provided voluntarily in the early stages, hosted by a Board member’s institution until formal funding is secured.

7. **Reporting and Evaluation**

An annual activity report will be submitted by the Board to all members and the SAG.

8. **Diversity, Equity and Inclusion**

* **Commitment to Representation:** Ensure global participation with attention to geographic diversity, gender balance, and inclusion of underrepresented groups.
* **Equitable Access:** Support travel grants and virtual attendance options to enable participation from resource-limited regions.

9. **Charter Amendments and Review**

* **Charter Review:** Every 3 years, led by the Board with input from the SAG and general members.
* **Proposals for Change:** May be submitted by any member and are subject to Board vote, with feedback from the SAG.

10. **Code of Conduct & Ethics**

* Members must uphold professional conduct, scientific integrity, openness, and mutual respect.
* Data sharing guidelines and confidentiality expectations apply, especially in collaborative challenge settings.