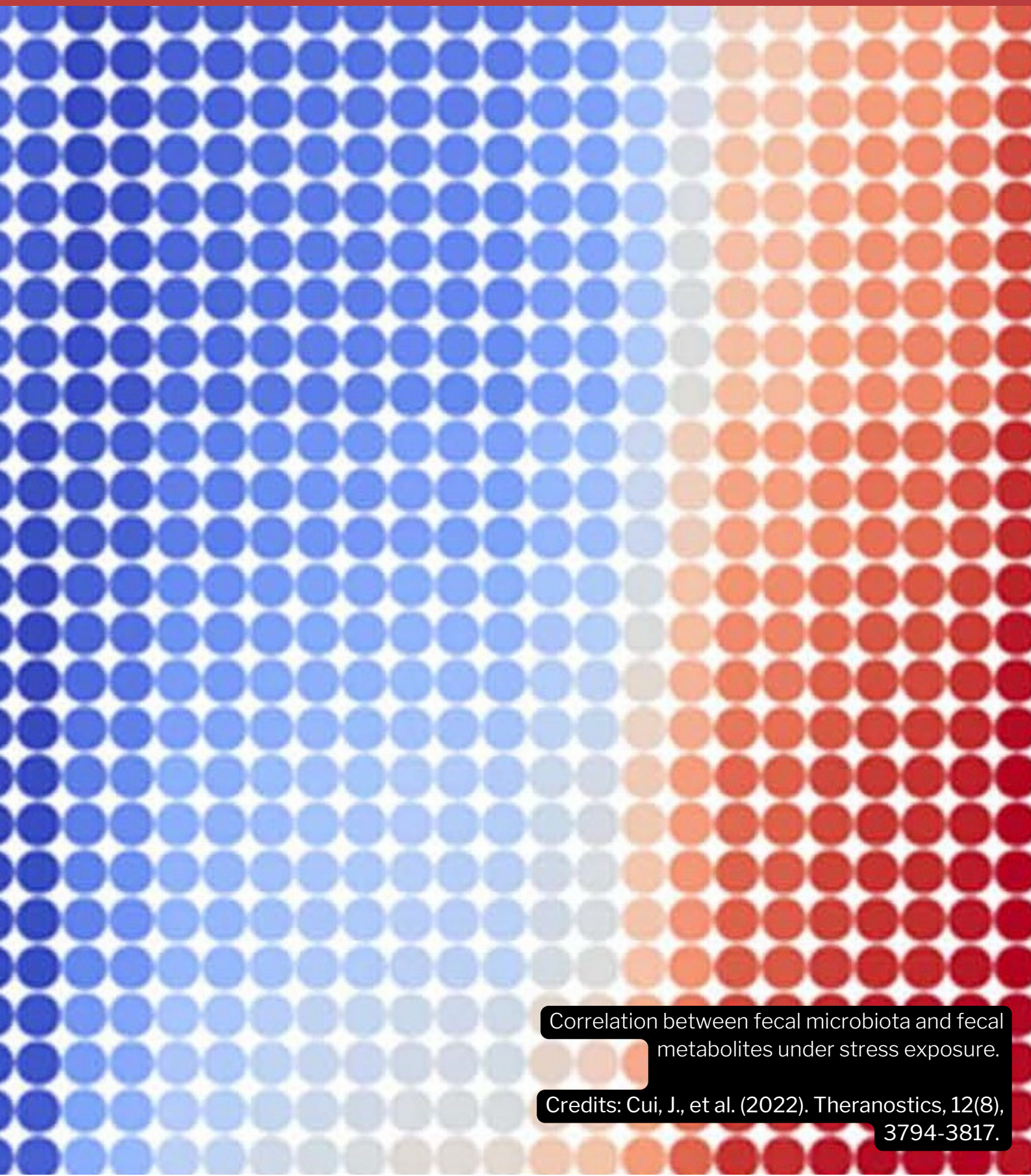
IMMUNOLOGS



Correlation between fecal microbiota and fecal metabolites under stress exposure.

Credits: Cui, J., et al. (2022). Theranostics, 12(8), 3794-3817.

Programme Publications

Ma M, Santosa A, Fong W, Chew LC, Low AHL, Law A, Poh YJ, Yeo SI, Leung YY, Ng VWW, Koh JZE, Tay SH, Mak A, Teng GG, Xu CH, Tang JGX, Kong KO, Angkodjojo S, Goh WR,Chuah TY, Nur Emillia Roslan, Arkachaisri T, Teh KL, Sriranganathan M, Tan TC, Phang KF, Yap QV, Chan YH, Cheung PPM, Lahiri M. Journal of Autoimmunity (November 2022). Post-mRNA vaccine flares in autoimmune inflammatory rheumatic diseases: Results from the COronavirus National Vaccine registry for ImmuNe diseases SINGapore (CONVIN-SING). DOI: 10.1016/j.jaut.2022.102959

Chooi WH, Ng CY, Ow V, Harley J, Ng W, Hor JH, Low KE, Malleret B, Xue K, Ng SY. Advanced Healthcare Materials (Dec 2022). Defined Alginate Hydrogels Support Spinal Cord Organoid Derivation, Maturation, and Modeling of Spinal Cord Diseases. DOI: 10.1002/adhm.202202342

Yeap HW. and Chen KW. Biochemical Society Transactions (Dec 2022). RIPK1 and RIPK3 in antibacterial defence. DOI: 10.1042/BST20211242

Chen KW and Brodsky IE. Current Opinion in Microbiology (Dec 2022). Yersinia interactions with regulated cell death pathways. DOI: 10.1016/j.mib.2022.102256

Kvedaraite E, Milne P, Khalilnezhad A, Chevrier M, Sethi R, Lee HK, Hagey DW, von Bahr Greenwood T, Mouratidou N, Jädersten M, Lee NYS, Minnerup L, Tan YR, Dutertre CA, Benac N, Hwang YY, Lum J, Loh AHP, Jansson J, Teng KWW, Khalilnezhad S, Xu WL, Resteu A, Tey HL, Ng LG, Larbi A, Howland SSW, Arnell H, Andaloussi SEL, Braier J, Rassidakis G, Galluzzo L, Dzionek A, Henter JI, Chen, JM, Collin M, Ginhoux F. Science Immunology (Dec 2022). Notch-dependent cooperativity between myeloid lineages promotes Langerhans cell histiocytosis pathology. DOI: 10.1126/sciimmunol.add3330

Shorey S, Asurlekar AR, Chua JS, Lim LHK. Developmental Psychobiology (Dec 2022). Influence of oxytocin on parenting behaviors and parent–child bonding: A systematic review. DOI: 10.1002/dev.22359

Tan JY , Chia YW, Chan M, Lim SL, Chin C, Yap J, Richards AM, Teo ZW, Amanullah MR, Peck KH, Choo TLJ, Sim HW, Young BE, MacAry PA, Yeo KK. European Heart Journal (January 2023). Pathophysiologic mechanism for MYOcarditis in COVID-19 VAccinations ("MYOVAx" Study). DOI:10.1093/eurheartj/ehac779.075

Wu L, Brzostek J, Previtha Dawn Sakthi Vale, Wei QR, Koh CKT, Ong JXH, Wu LZ, Tan JC, Chua YL, Yap JW, Song Y, Tan VJY, Tan TYY, Lai JY, MacAry PA, Gascoigne NRJ. Cell Reports Medicine (Jan 2023). CD28-CAR-T cell activation through FYN kinase signaling rather than LCK enhances therapeutic performance. DOI:10.1016/j.xcrm.2023.100917

Dorajoo R, Ihsan MO, Liu WT, Lim HY, Angeli V, Park SJ, Chan JMS, Lin XY, Ong MS, Muniasamy U, Lee CH, Gurung R, Ho HH, Foo R, Liu JJ, Kofidis T, Lee CN, Sorokin VA. Atherosclerosis (Jan 2023). Vascular smooth muscle cells in low SYNTAX scores coronary artery disease exhibit proinflammatory transcripts and proteins correlated with IL1B activation. DOI: 10.1016/j.atherosclerosis.2022.12.005

Lee CYP, Carissimo G, Teo TH, Tong SJM, Chang ZW, Rajarethinam R, Chua TK, Chen ZY, Chee RSL, Tay A, Howland SSW, Ang KS, Chen JM, Renia L, Ng LFP. Journal of Investigative Dermatology (Dec 2022). CD8+ T Cells Trigger Auricular Dermatitis and Blepharitis in Mice after Zika Virus Infection in the Absence of CD4+ T Cells. DOI: 10.1016/j.jid.2022.11.020

Gainullina A, Mogilenko DA, Huang LH, Todorov H, Narang V, Kim KW, Lim SY, Kent A, Jia B, Seddu K, Krchma K, Wu J, Crozat K, Tomasello E, Dress R, See P, Scott C, Gibbings S, Bajpai G, Desai JV, Maier B, This S, Wang P, Aguilar SV, Poupel L, Dussaud S, Zhou TA, Angeli V, Blander JM, Choi K, Dalod M, Dzhagalov I, Gautier EL, Jakubzick C, Lavine K, Lionakis MS, Paidassi H, Sieweke MH, Ginhoux F, Guilliams M, Benoist C, Merad M, Randolph GJ, Sergushichev A, Artyomov MN; ImmGen Consortium. Cell Reports (Jan 2023). Network analysis of large-scale ImmGen and Tabula Muris datasets highlights metabolic diversity of tissue mononuclear phagocytes. DOI: 10.1016/j.celrep.2023.112046.

Sieow JL, Penny HL, Gun SY, Tan LQ, Duan K, Yeong JPS, Pang A, Lim D, Toh HC, Lim TKH, Engleman E, Rotzschke O, Ng LG, Chen JM, Tan SM, Wong SC. International Journal of Molecular Sciences (Jan 2023). Conditional Knockout of Hypoxia-Inducible Factor 1-Alpha in Tumor-Infiltrating Neutrophils Protects against Pancreatic Ductal Adenocarcinoma. DOI: 10.3390/ijms24010753

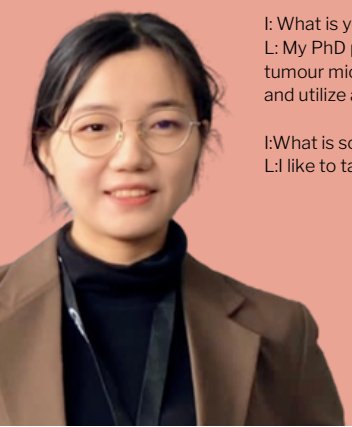
Chua AWC, Guo D, Tan JC, Lim FTW, Ong CT, Masilamani J, Lim TKH, Hwang WYK, Lim IJ, Chen JM, Phan TT, Fan X. International Journal of Molecular Sciences. (Jan 2023). Intraperitoneally Delivered Umbilical Cord Lining Mesenchymal Stromal Cells Improve Survival and Kidney Function in Murine Lupus via Myeloid Pathway Targeting. DOI: 10.3390/ijms24010365

Davis MJ, Scallan JP, Castorena-Gonzalez JA, Kim HJ, Lim HY, Yeo KP, Angeli V. Frontiers in Physiology (Jan 2023) . Multiple aspects of lymphatic dysfunction in an ApoE -/- mouse model of hypercholesterolemia. doi: 10.3389/fphys.2022.1098408.

Getting to know... Wu Liangze (Lizzy)

Lizzy is a final year PhD student, supervised by Prof Nicholas Gascoigne. She presented at Research in Progress in November, we interview her to find out how is it doing a PhD in ITRP.

Editor (I): Share with us the story how your background and why you got interested in CAR-T/T cell biology research?
Lizzy (L): I graduated from the School of Life Science in Xiamen University in China. I got the opportunity to finish my final year project in Prof. Gascoigne's lab in NUS. I started to get interested in immunology and T cells when I was a junior. The course named "Advanced Immunology (MDG5207)" introduced how powerful our immune system was and I first learnt about the CAR-T/T cell therapy in the case study in that course. I found it very interesting to use the live cells as a drug to cure people.



I: What is your PhD project about?
L: My PhD project is about identification of novel genes in T cells regulation. T cells are under negative regulation by the immune-suppressive factors in tumour microenvironment. My research is to identify those potential genes that are upregulated and affect T cell cytotoxicity by tumour environment and utilize appropriate gene editing tools to turn them off so that the T cells can be revitalized.

I:What is something interesting about yourself?
L:I like to take videos to record some interesting things!

I: What is one thing that you like to do outside of work?
L: I like playing billiards even I am not very good at it haha.

I: Any plans after finishing your PhD?
L: I may stay in my lab for the further postdoc study or may want to explore the possibility in pharmaceutical industry.

Thank you Lizzy for sharing and we wish her all the best in her research journey! If you want to contact her more about her PhD journey, you may look for her in the lab or email her at wuliangzhe@u.nus.edu.

Looking For A Job?

1) Research Assistant, Prof Veronique Angeli Lab

The Research Assistant (RA) will be responsible to investigate the homeostatic functions of tissue resident macrophage and their implication in health and diseases using multiple systems and cutting-edge technologies. The RA will be closely supervised by Associate Professor ANGELi Veronique, the Principal Investigator (PI) and study team members to ensure the successful completion of the trial on time.

Main duties and responsibilities
The Research Assistant will

- Oversee the general management of the project;
- Undertake the day to day running of the project at the study site, e.g. peripheral blood processing, cell culture, flow cytometry, RNA sequencing and microscopy.
- Conduct literature searches, using SPSS to enter data, and analyse data and maintain trial database, as well as assist in preparing both progress and final reports of the project
- Maintain the highest standard of professional conduct and record keeping in accordance with policies and procedures;
- Assist with any other duties of a similar nature that are delegated by the PI. E.g procurement

Qualifications
The applicant should:

- Have a first degree in Life Sciences/Biology preferably with some experience in research;
- Be able to work independently and in a team, have an investigative nature, attention to detail; and
- Have knowledge of computer applications, e.g. SPSS, MS office, PowerPoint.

Remuneration will be commensurate with the candidate's qualifications and experience.
Only shortlisted candidates will be notified.

2) Research Assistant, Dr Chen Kaiwen's lab

We are seeking a Research Assistant to join the laboratory of Assistant Professor Kaiwen Chen at the National University of Singapore (NUS). The aim of this project is to investigate uncover novel regulators of innate immune signalling and cell death pathways during microbial infection and inflammatory disorder. The successful candidate will join a young and dynamic lab and will receive high quality training in myeloid cell biology, biochemistry, molecular biology, and infection biology. For more information, please visit https://www.lsi.nus.edu.sg/corp/principal-investigators/asst-prof-chen-kaiwen/

Qualifications
Our ideal candidate

- BSC with Hons in Life Science
- At least 6 months of laboratory experience
- Experience in molecular biology (cloning, PCR) and cell culture

Terms of appointment
This is a full-time 2-year funded project with the possibility of converting into PhD studies after 12 months. Salary package is dependent on experience and qualification.

How to apply
Please email your application including CV and cover letter with contact details of at least 2 referees to Assistant Professor Kaiwen Chen - kaiwen.chen@nus.edu.sg

Looking For A Job?

3) Research Fellow, Dr Chen Kaiwen's Lab

We are seeking a postdoctoral candidate to join the laboratory of Assistant Professor Kaiwen Chen at the National University of Singapore (NUS). This project aims to characterise the mechanisms by which lytic cell death drives host defence against intracellular pathogens (e.g., Shigella and influenza). The successful candidate will characterise a novel CRISPR knock-in mouse and receive high quality training in myeloid cell biology, biochemistry, and infection biology. For more information on our lab, please visit https://www.lsi.nus.edu.sg/corp/principal-investigators/asst-prof-chen-kaiwen/

Qualifications

Our ideal candidate

- PhD in Immunology, virology, or bacteriology
- Published at least 1 first author research article
- Experience in innate immunity, cell death signalling or microbiology
- Experience in microscopy and animal handling will be a plus
- Able to design and conduct experiments independently

Terms of appointment

This is a 2-year funded project. Salary package is dependent on experience and qualification.

How to apply

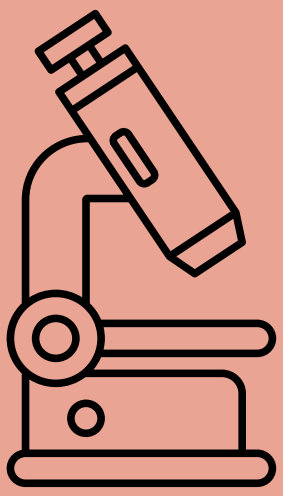
Please email your application including CV and cover letter with contact details of at least 2 referees to Assistant Professor Kaiwen Chen - kaiwen.chen@nus.edu.sg

4) Bioinformatics Analyst, Immunology Translational Research Programme

The Bioinformatics Platform at the Immunology Translational Research Program NUS, utilizes state-of-the-art methods in pipelines and workflow to analyze data to gain biological insights. The platform works with a number of medium to high throughput technologies like microbiome metagenomics, single-cell omics, next generation sequencing (RNA-seq, DNA-seq, etc), Luminex multiplex assays, Microarrays, Nanostring and Flow/Mass cytometry and integrates them together with other heterogenous datasets to derived meaningful understandings. The platform is currently looking for a Research Associate/Research Fellow to analyze above mentioned biological data using computational methods.

Job Scope:

• Work with internal and external collaborators to understand biological problems and translate them to actionable computational analytical tasks.
• Execute computational analytical tasks to generate results for interpretation and report generation.
• Communicate and discuss analysis results with collaborators.
• Survey and evaluation of computational methodologies for incorporation into analysis workflows.
• Maintain and manage servers



Requirements:

• Masters/PhD in Bioinformatics/Computational biology, Statistics, Mathematics, Data science, Computer Science/Engineering or related disciplines.
• Proficient in the Linux operating system
• Proficient in programming languages such as Unix shell scripts, R, Python and Java
• Able to work independently and keen to pick up new skills
• Strong organizational and communication skills.
• Knowledge or willingness to learn biology and statistics

Interested applicants please email to Ms Serene Tan (tserene@nus.edu.sg) with the header: application for RA/RF - Bioinformatics Platform.

FASEB Catalyst CONFERENCES

February 8-9, 2023

https://www.faseb.org/meetings-and-events/catalyst-conference/immune-repertoire-decoding-2023

Immune Repertoire Decoding

Registration is free!

Organizers:

Karsten Sauer, Vice President, Preclinical R&D, Cullinan Oncology, Cambridge, MA
Michael Birnbaum, Associate Professor, MIT, Cambridge, MA

Keynote Lectures:

Stephen J. Elledge, Professor, Harvard Medical School and Brigham & Women's Hospital, Boston, MA
Catherine Bollard, Director, Center for Cancer and Immunology, Children's National Hospital and George Washington University, Washington, DC

Leading experts will introduce the audience to recent advances in decoding the specific T cell or B cell clonotypes mediating or protecting from disease along with their recognized antigen epitopes in the context of human HLA haplotypes. This information promises to enable next generation clonotype or epitope targeted immunotherapies for cancer, autoimmune or infectious diseases that are both more efficacious and safer than current therapies. Recent advances in single cell sequencing technologies and large-scale HLA tetramer or HLA reporter gene-based epitope library screening technologies have made decoding the "immune synapse" possible. Additional speakers will discuss how they are developing powerful immunotherapies based on decoded immune repertoires.

Four abstracts will be selected for **lightning talks** at the conference. If you would like to be considered for a lightning talk, please email your abstract in an MS Word document including title, content, and author information to Michael Birnbaum, PhD at *mbirnb@mit.edu* by February 1.

IUIS 2023 CAPE TOWN

Supported by

sais

FAIS

WHERE IMMUNOLOGISTS MEET

18th International Congress of Immunology

27 November - 2 December 2023 | Cape Town, South Africa

IUIS2023.org