

第24届太平洋科学大会 The 24th Pacific Science Congress

迈向可持续发展未来
Towards a Sustainable Future

专题三：生物多样性与生态系统 Congress Session 3: Biodiversity and Ecosystems



2025年11月20-24日
20-24 November, 2025



中国, 广东, 汕头国际会展中心
Shantou City, Guangdong Province, China
Shantou International Convention & Exhibition Center



第24届太平洋科学大会

迈向可持续发展未来

🕒 2025年11月20-24日 📍 中国, 广东, 汕头国际会展中心

专题:生物多样性与生态系统

初步议程

11月22日

主旨报告

- 09:00-09:35 ● 科学在落实昆明-蒙特利尔全球生物多样性框架中的作用
Richard Field 教授 英国诺丁汉大学
- 09:35-10:10 ● 气候变化背景下高纬度地区生物多样性保护的新挑战
Pavel Krestov 教授 俄罗斯科学院远东分院植物园研究所
- 10:10-10:20 ● Q&A
- 10:20-10:40 ● 休息
- 10:40-11:15 ● 为保护目的进行的俄罗斯生物多样性数字化
Alexey Seregin 博士 俄罗斯莫斯科罗蒙诺索夫国立大学
- 11:15-11:50 ● 中国山地生物多样性及其对全球变化的响应与适应
张健 教授 中山大学
- 11:50-12:00 ● Q&A
- 12:30-14:00 ● 午餐
- 14:00-14:35 ● 城市土壤生物多样性研究进展:对人类健康与可持续城市的启示
孙新 研究员 中国科学院城市环境研究所
- 14:35-14:40 ● Q&A

生物多样性与生态系统功能

- 14:40-15:05 ● 基于遥感获取的生物多样性基本变量绘制生物多样性-生态系统功能关系研究
俞方圆 副教授 广州大学
- 15:05-15:30 ● 多营养级生物多样性与生态系统功能:从生产力到多功能性
李逸 副研究员 中国科学院植物研究所
- 15:30-15:50 ● 休息
- 15:50-16:15 ● 森林群落功能多样性对环境的响应及其对生产力的影响
张岚 教授 东北林业大学
- 16:15-16:40 ● 冠层结构复杂性对树木多样性-森林生产力关系的调控机制
邓湘璐 博士 中国科学院植物研究所
- 16:40-17:05 ● 日本的城市生物多样性、生态系统服务与绿地利用行为:来自亚洲城市的案例
康杰锋 博士 日本上智大学
- 17:05-17:30 ● 将生物多样性保育融入森林恢复:以嘉道理农场暨植物园为例
张金龙 博士 香港嘉道理农场暨植物园
- 17:30-17:40 ● Q&A
- 18:00 ● 晚餐

11月23日

生物多样性大尺度格局与保护战略

- 09:00-09:25 ● “人与生物圈计划”与“昆蒙框架”协同增效潜力
武慧 教授 东北林业大学
- 09:25-09:50 ● 人类活动影响下的生物多样性演变动态
John M. Halley 教授 希腊阿约尼纳大学
- 09:50-10:15 ● 扩大保护范围:从一般保护区升级为严格自然保护区以实现“30x30”目标
Michele Lussu 博士 意大利博洛尼亚大学
- 10:15-10:40 ● 全球树种多样性的形成机制与保护对策
郭文永 研究员 华东师范大学
- 10:40-10:50 ● Q&A
- 10:50-11:10 ● 休息
- 11:10-11:35 ● 种子生态学研究中的全球偏倚
陈思翀 研究员 中国科学院武汉植物园
- 11:35-12:00 ● 保护成效评估:可扩展的全球生物多样性保护框架
Michele Di Musciano 博士 意大利拉奎拉大学
- 12:00-12:25 ● 生存的基因组印记:整合民族植物学与群体基因组学解析新疆阿魏在干旱生态系统的适应策略
Hafiz Muhammad Wariss 博士 中国科学院新疆生态与地理研究所
- 12:25-12:35 ● Q&A
- 12:35-13:30 ● 午餐

生物多样性监测与维持机制

- 13:30-13:55 ● 构建大规模生物多样性监测“生态系统”:中国生物网格(BioGrid)的多元主体参与实践
罗世孝 研究员 中国科学院华南植物园
- 13:55-14:20 ● 森林生物多样性监测和生物多样性维持机制
练琚瑜 研究员 中国科学院华南植物园
- 14:20-14:45 ● 基于泛基因组数据解析柝属物种间杂交对遗传多样性与适应性的贡献
王宝生 研究员 中国科学院华南植物园
- 14:45-15:10 ● 竞争诱导的性状变异干扰了幼苗性状与生长的关系
沈国春 教授 华东师范大学
- 15:10-15:20 ● Q&A
- 15:20-15:30 ● 总结

The 24th Pacific Science Congress

Towards a Sustainable Future

🕒 20-24 November, 2025

📍 Shantou City, Guangdong Province, China
Shantou International Convention & Exhibition Center

Congress Session: Biodiversity and Ecosystems

Draft Agenda

Nov. 22

Keynote speech

- 09:00-09:35 • **The role of science in implementing the Kunming-Montreal Global Biodiversity Framework**
Prof. Richard Field | University of Nottingham, UK
- 09:35-10:10 • **New challenges in biodiversity conservation under climatic changes in high latitude regions**
Prof. Pavel Krestov | Botanical Garden and Institute, Far Eastern Branch of Russian Academy of Sciences
- 10:10-10:20 • **Q&A**
- 10:20-10:40 • **Break**
- 10:40-11:15 • **Digitisation of biodiversity in Russia for conservation purposes**
Dr. Alexey Seregin | Lomonosov Moscow State University, Russia
- 11:15-11:50 • **Mountain biodiversity along elevational gradients in China: shifts and transitions**
Prof. ZHANG Jian | Sun Yat-sen University
- 11:50-12:00 • **Q&A**
- 12:30-14:00 • **Lunch**
- 14:00-14:35 • **Research progress on urban soil biodiversity: implications for human health and sustainable cities**
Prof. SUN Xin | Institute of Urban Environment, Chinese Academy of Sciences
- 14:35-14:40 • **Q&A**

Biodiversity and ecosystem functioning

- 14:40-15:05 • **Mapping biodiversity–ecosystem functioning relationships with remote sensing–derived essential biodiversity variables**
Assoc. Prof. YU Fang-Yuan | Guangzhou University
- 15:05-15:30 • **Multitrophic biodiversity and ecosystem function: from productivity to multifunctionality**
Assoc. Prof. LI Yi | Institute of Botany, Chinese Academy of Sciences
- 15:30-15:50 • **Break**
- 15:50-16:15 • **Response of forest community functional diversity to the environment and its impact on productivity**
Prof. ZHANG Lan | Northeast Forestry University
- 16:15-16:40 • **Canopy structural complexity mediates the biodiversity–productivity relationships**
Dr. DENG Xiang-Lu | Institute of Botany, Chinese Academy of Sciences
- 16:40-17:05 • **Urban biodiversity, ecosystem services, and green space use in Japan: insights from high-density Asian cities**
Dr. KANG Jie-Feng | Sophia University, Japan
- 17:05-17:30 • **Incorporating biodiversity conservation in forest restoration in Hong Kong: an overview of principles and practices**
Dr. ZHANG Jin-Long | Kadoorie Farm and Botanic Garden, Hong Kong
- 17:30-17:40 • **Q&A**
- 18:00 • **Dinner**

Nov. 23

Biodiversity large-scale pattern and conservation strategies

- 09:00-09:25 • **Synergistic potential between the “Man and the Biosphere Programme” and the “Kunming–Montreal Global Biodiversity Framework”**
Prof. WU Hui | Northeast Forestry University
- 09:25-09:50 • **The dynamics of biodiversity in response to human impact**
Prof. John M. Halley | University of Ioannina, Greece
- 09:50-10:15 • **Scaling protection: from protected to strictly protected areas to achieve the 30x30 target**
Dr. Michele Lussu | University of Bologna, Italy
- 10:15-10:40 • **Origins and conservation of global tree diversity**
Prof. GUO Wen-Yong | East China Normal University
- 10:40-10:50 • **Q&A**
- 10:50-11:10 • **Break**
- 11:10-11:35 • **Identifying and addressing global biases in seed ecology research**
Prof. CHEN Si-Chong | Wuhan Botanical Garden, Chinese Academy of Sciences
- 11:35-12:00 • **Measuring protection effectiveness: a scalable framework for global biodiversity conservation**
Dr. Michele Di Musciano | University of L'aquila, Italy
- 12:00-12:25 • **Genomic signatures of survival: integrating ethnobotany and population genomics for *Ferula sinkiangensis* in arid ecosystems**
Dr. Hafiz Muhammad Wariss | Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences
- 12:25-12:35 • **Q&A**
- 12:35-13:30 • **Lunch**

Biodiversity monitoring and maintenance mechanism

- 13:30-13:55 • **Fostering a large-scale biodiversity monitoring ecosystem with universal participation in China: the practice of BioGrid**
Prof. LUO Shi-Xiao | South China Botanical Garden, Chinese Academy of Sciences
- 13:55-14:20 • **Monitoring of forest biodiversity and mechanisms of biodiversity maintenance**
Prof. LIAN Ju-Yu | South China Botanical Garden, Chinese Academy of Sciences
- 14:20-14:45 • **Pan-genome analysis reveals the contribution of interspecific hybridization to genetic variation and local adaptation in *Quercus* (Oak)**
Prof. WANG Bao-Sheng | South China Botanical Garden, Chinese Academy of Sciences
- 14:45-15:10 • **Competition-induced trait variability obscures trait–growth relationships of tree seedlings**
Prof. SHEN Guo-Chun | East China Normal University
- 15:10-15:20 • **Q&A**
- 15:20-16:30 • **Wrap up**

Session day 1 – 22nd November 2025

Keynote speech (主旨报告)



Professor Richard Field

University of Nottingham, UK (英国诺丁汉大学)

Prof. Richard Field is a biogeographer and macroecologist with >25 years of research on biodiversity. This body of research is both theoretical and applied. In terms of theory, it aims to understand the distribution of biodiversity at all scales from local to global, and the reasons for that distribution, including consideration of species richness, functional and phylogenetic diversity, beta diversity and their relationship with environment, including geodiversity, and biogeographic history. On the more applied side, his work addresses adequacy of conservation and protected area networks, and the finance of biodiversity. Richard is Editor-in-Chief of *Global Ecology and Biogeography*, the leading macroecology journal, and served 8 years on the Board of The International Biogeography Society. He is a Trustee of the Wallacea Trust, which promotes biodiversity conservation through business engagement and owns a leading method for measuring biodiversity for finance. He is also Chair of the Biodiversity Futures Initiative, which validates biodiversity measurement methodology and verifies data-based biodiversity claims, and is part of the current IPBES Monitoring Assessment. Richard is a core, Task Force member of the Biodiversity Credit Alliance, working closely with the UNDP (which provides the Secretariat), and co-leading its Theory of Change work, and previously was Technical Co-Lead of the International Advisory Panel on Biodiversity Credits Measurement Working Group, co-leading the writing of its Design Criteria. He is now starting a project with three UN Economic Commissions to produce guidance and toolkits for developing biodiversity credit markets in numerous countries across Africa, West Asia, Latin America and the Caribbean.



Professor Pavel Krestov

Botanical Garden and Institute, Far Eastern Branch of
Russian Academy of Sciences (俄罗斯科学院远东分院植物
园研究所)

Pavel Krestov graduated Far Eastern State University (Vladivostok) in 1991 and is corresponding member of the Russian Academy of Sciences, director of Botanical Garden-Institute of the Far Eastern Branch of the Russian Academy of Sciences and vice-president of the Far Eastern Branch of the Russian Academy of Sciences. He completed a postdoctoral course at the Department of Forest Sciences at the University of British Columbia in Canada and completed an internship at the University of Tokyo's Agricultural University, Japan. His early researches based on an extensive field material obtained in expeditions and organized into the extensive databases on flora, vegetation, tree growth patterns and climate records from the large area of Northeast Asia and the Arctic. The main results of those studies explained general diversity of vegetation and flora in the boreal and temperate zones, climatic and ecological forces that control its pattern at different scales. He was the founder and is currently the editor-in-chief of the journal *Botanica Pacifica*.

Currently he is working in fields of vegetation science, biogeography, bioclimatology, biodiversity, forest ecology. Now he focuses on retrospective and predictive modeling of distribution of terrestrial ecosystems in a changing climate and first results obtained prove our hypotheses about very rapid transformation of biota in temperate regions with seasons driven by heat and moisture oscillation.



Dr. Alexey P. Seregin

Lomonosov Moscow State University, Russia (俄罗斯莫斯科罗蒙诺索夫国立大学)

Dr. Alexey P. Seregin is the head of the Moscow University Herbarium. Graduated from the Faculty of Geography at Lomonosov Moscow State University (MSU) and later completed his postgraduate studies at the Faculty of Biology of MSU. He has been working at the Moscow University Herbarium since 2004. He completed the International Herbarium Training Courses at the Royal Botanic Gardens, Kew (UK), gaining unique expertise in this field.

His research interests include traditional and molecular plant systematics of various groups, floristics and plant geography, as well as scientific principles of herbarium management. During his travels and expeditions, he has collected plant specimens around the globe, including the Canary and Azores Islands, Socotra, New Zealand, numerous countries across Europe and Asia, and dozens of regions in Russia. He developed Moscow Digital Herbarium, the largest biodiversity database in Russia based upon collections. Atlas of the Russian Flora is the latest project of him devoted to mapping of the national plant diversity. Alexey is the author of dozens of books and over 150 papers in journals.



Professor ZHANG Jian (张健)

Sun Yat-sen University (中山大学)

ZHANG Jian is a professor in the Sun Yat-sen University in China. He got his PhD from University of Alberta in Canada in 2013. After that, he did postdoc researches in both University of Alberta and Aarhus University in Denmark. His research interests include long-term forest dynamics, macroecology, mountain biodiversity patterns and dynamics, and conservation biogeography. Currently, he serves as Deputy Editor-in-Chief for the journal *Biodiversity Science*, Associate Editors for *Ecography* and *Remote Sensing in Ecology and Conservation*.

张健，中山大学生命科学学院教授、博士生导师，主要从事生物多样性维持机制、生物多样性保护与宏生态学等方面的研究工作。2013 年于加拿大阿尔伯塔大学获得理学博士学位，2013-2016 年分别在加拿大阿尔伯塔大学和丹麦奥胡斯大学从事博士后研究。已以第一或通讯作者在 *PNAS*、*Ecology Letters*、英国皇家学会会刊 *B*、*Journal of Ecology*、*Global Change Biology* 等发表研究论文 50 余篇，其他合作文章 50 余篇。现任《生物多样性》副主编，任 *Ecography*、中国科学：生命科学、*Remote Sensing in Ecology and Conservation*、《应用生态学报》编委。



Professor SUN Xin (孙新)

Institute of Urban Environment, Chinese Academy of Sciences (中国科学院城市环境研究所)

Dr. SUN Xin is a Professor at the Institute of Urban Environment, Chinese Academy of Sciences, where she leads a research program in Urban Soil Ecology. Her work investigates the impacts of land-use change and human activities on urban soil biodiversity and ecosystem functioning. She earned her PhD in Biology from Nanjing University (2011) and previously held a position at the Northeast Institute of Geography and Agroecology, Chinese Academy of Sciences. As an Alexander von Humboldt Foundation fellow, she conducted four years of research at the University of Göttingen, Germany. Dr. Sun has authored over 130 publications in high-impact journals including *Nature Cities*, *PNAS*, and *Global Change Biology*. She is actively engaged in the international scientific community, serving as the alternate Vice-Chair of Working Group 1 for the FAO's International Network on Soil Biodiversity (NETSOB) and as a Subject Editor for *Pedobiologia*, *European Journal of Soil Biology*, and *Basic and Applied Ecology*.

孙新博士现任中国科学院城市环境研究所研究员，领导城市土壤生态学领域的研究团队。她的研究工作主要聚焦土地利用变化与人类活动对城市土壤生物多样性的影响及其生态系统功能反馈。孙博士于 2011 年获得南京大学生物学博士学位，曾任职于中国科学院东北地理与农业生态研究所。在亚历山大·冯·洪堡基金会资助下，她在德国哥廷根大学进行了为期四年的研究工作。目前已发表 130 余篇学术论文，成果见于 *Nature Cities*、*PNAS* 和 *Global Change Biology* 等高水平期刊。她现任联合国粮农组织土壤生物多样性国际网络（NETSOB）第一工作组候任副主席，同时担任 *Pedobiologia*、*European Journal of Soil Biology*、*Basic and Applied Ecology* 等土壤科学期刊的责任主编。

Biodiversity and ecosystem functioning (生物多样性与生态系统功能)



Associate Professor YU Fang-Yuan (俞方圆)

Guangzhou University (广州大学)

YU Fang-Yuan is an Associate Professor and Master's Supervisor at the School of Geography and Remote Sensing, Guangzhou University. Her research focuses on biogeography, biodiversity conservation, and ecological remote sensing. She obtained her PhD from the International Institute for Geo-Information Science and Earth Observation (ITC), University of Twente, the Netherlands. Dr. Yu has published more than 20 papers in leading academic journals both in China and abroad, including 16 as first or corresponding author in journals such as *Earth's Future* and *Diversity and Distributions*. She has led one project funded by the National Natural Science Foundation of China and one Talent Introduction Research Start-up Project at Guangzhou University, and has participated in several international collaborative and national research projects. Dr. Yu serves on the Youth Editorial Board of *Biological Diversity* and acts as a reviewer for several other scientific journals. She received the Second Prize in the Guangdong Division of the Fourth National College Teachers' Teaching Innovation Competition. Over the years, she has supervised numerous graduate and undergraduate students who have received awards for outstanding theses and innovation or entrepreneurship projects. Through her work, Dr. Yu has accumulated extensive experience in scientific research, field investigations, and university teaching.

俞方圆，广州大学地理科学与遥感学院，副教授，硕士生导师。研究方向为生物地理与生物多样性保护、生态遥感。博士毕业于荷兰特温特大学（University of Twente）国际地理信息科学和地球观测学院（ITC）。现已在国内外权威学术期刊发表论文 20 余篇，其中以第一作者 / 通讯作者在 *Earth's Future*、*Diversity and Distribution* 等期刊发表 16 篇，主持国家自然科学基金 1 项和广州大学引进人才科研启动项目 1 项。参与国际合作或国家级科研项目 3 项及多项纵向项目。担任 *Biological Diversity* 等期刊青年编委和多个期刊审稿人。曾获第四届全国高校教师教学创新大赛广东分赛二等奖。多次指导研究生本科生获得优秀毕业论文、大学生创新创业项目。多年来积累了丰富的科学研究、野外调查和课堂教学经验。



Associate Professor LI Yi (李逸)

Institute of Botany, Chinese Academy of Sciences (中国科学院植物研究所)

LI Yi is an Associate Professor at the Institute of Botany, Chinese Academy of Sciences (IBCAS). Dr. Li's research focuses on the relationships between multitrophic biodiversity and ecosystem functioning, aiming to reveal how multitrophic biodiversity and interactions among trophic levels influence ecosystem functions and services. She has published as the first author in leading ecology journals, including *Nature Ecology & Evolution* (2023, 2024, & 2025), *Journal of Ecology*, and *Journal of Animal Ecology*. Dr. Li currently leads a Young Scientists Project funded by the National Natural Science Foundation of China (NSFC) and serves as a member of the Youth Editorial Board for *Journal of Plant Ecology and Biodiversity Science*.

李逸，中国科学院植物研究所副研究员。聚焦于生物多样性与生态系统功能关系的研究，致力于揭示生态系统中多营养级生物多样性及其相互作用对生态系统功能和服务的影响。相关工作以第一作者身份发表在 *Nature Ecology & Evolution* (2023, 2024, & 2025), *Journal of Ecology*, *Journal of Animal Ecology* 等生态学期刊。主持国家自然科学基金青年项目，任生态学期刊 *Journal of Plant Ecology* 和《生物多样性》期刊青年编委。



Professor ZHANG Lan (张岚)

Northeast Forestry University (东北林业大学)

ZHANG Lan is a tenure-track Professor at the College of Forestry, Northeast Forestry University. She earned her Master's and PhD degrees from Wageningen University & Research—ranked first globally in the QS subject ranking for Agriculture & Forestry—and completed her postdoctoral training at the Institute of Botany, Chinese Academy of Sciences.

Her research focuses on the relationship between functional diversity of forest communities and their environmental responses. She investigates how species diversity in forest ecosystems adapts to environmental changes and explores the dynamics of productivity and ecological function succession under varying environmental conditions. Through years of field surveys and scientific investigation, she has achieved significant findings in forest ecology, particularly in elucidating the mechanisms underlying the interaction between functional diversity and the ecological environment.

张岚，东北林业大学林学院预聘教授。她先后于荷兰瓦格宁根大学（QS 农林学科排名首位）获得硕士与博士学位，之后在中国科学院植物研究所完成博士后研究。张岚教授长期致力于森林群落功能多样性与环境响应关系的研究，重点关注森林物种多样性对环境变化的适应机制，系统揭示不同环境条件下森林群落的生产力动态与生态功能演替规律。通过多年野外调查与科学探索，她在森林生态学领域取得了系列创新成果，尤其在阐明森林群落功能多样性与生态环境的相互作用机制方面，开展了深入的理论与实证研究。



Dr. DENG Xiang-Lu (邓湘璐)

Institute of Botany, Chinese Academy of Sciences (中国科学院植物研究所)

DENG Xiang-Lu is a PhD candidate at the Institute of Botany, Chinese Academy of Sciences. Her research focuses on understanding the relationships between biodiversity and ecosystem functioning using multimodal remote sensing, with an emphasis on UAV-based data. Her first-author paper in PNAS shows that canopy structural complexity mediates the positive effect of tree diversity on forest productivity, highlighting species complementarity and the importance of conserving structurally complex mixed forests to enhance productivity and carbon storage in long-term afforestation projects.

邓湘璐，中国科学院植物研究所博士研究生，主要从事基于多源遥感数据探究生物多样性与生态系统功能关系的研究。利用无人机遥感等前沿技术，揭示树种多样性促进森林生产力的重要机制。相关成果以第一作者发表于国际期刊 PNAS，系统揭示冠层结构复杂性在森林生物多样性促进生产力过程中的关键中介作用，为理解群落物种互补机制驱动生态系统功能提供了新视角，提出营建和保护具有复杂冠层结构的多物种混交林对于未来提高森林生态系统的生产力和碳储量至关重要。



Dr. KANG Jie-Feng (康杰锋)

Sophia University, Japan (日本上智大学)

KANG Jie-Feng is a researcher at the Institute for Studies of the Global Environment, Sophia University, Japan. Trained in energy science, urban ecology, and data science, his current research interests lie in three interconnected domains: (1) urban biodiversity and ecosystem services, (2) ecotourism and mobility science, and (3) studies related to biodiversity conservation.

In the first domain, his research focuses on Japanese cities and applies the pattern–process–function framework to understand spatial patterns of urban biodiversity, their driving processes, and resulting ecosystem functions. His recent work quantifies changes of biodiversity in residential areas over recent decades and examines behavioral drivers behind these transformations, aiming to improve urban habitat quality through behavior-change approaches. He also integrates large-scale datasets - such as mobile phone mobility data and meteorological station observations - to identify the determinants and impacts of urban green-space ecosystem services.

In the second domain, Kang studies ecotourism and nature-based recreation. His previous work assessed the value of national parks through economic supply-demand models and analyzed visitors' spatial behaviors within natural landscapes. His ongoing projects explore how cultural and traditional elements in World Heritage Sites influence human behavior and how these cultural-ecological interactions can inform conservation and sustainable tourism management.

In the third domain, he collaborates as a data analyst with interdisciplinary teams on topics such as wildlife trade monitoring and citizen-science participation.



Dr. ZHANG Jin-Long (张金龙)

Kadoorie Farm and Botanic Garden, Hong Kong (香港嘉道理农场暨植物园)

Dr. ZHANG Jin-Long, originally from Baodi, Tianjin, currently resides in Hong Kong, China. He received PhD degree at the Institute of Botany, Chinese Academy of Sciences in 2012. He is the Senior Ecologist in the Flora Conservation Department at Kadoorie Farm and Botanic Garden (KFBG), and has served as the Curator of the KFBG Herbarium since 2014. His work focuses on plant biodiversity surveys and forest ecology, with a long-standing commitment to biodiversity conservation and forest restoration in Hong Kong and southern China. He has participated in several major forest ecology projects in Hong Kong, including the 20-hectare plot in Tai Po Kau, secondary forest succession on Tai Mo Shan, and the establishment and monitoring of the forest restoration plot at KFBG. Dr. Zhang serves as a reviewer for more than 20 academic journals and has published over 50 research articles, as well as contributed to two books. He also maintains several R packages for biodiversity data analysis, such as spaa, plantlist, and herblabel, and actively promotes the use of R in biodiversity research. He is a member of the IUCN China Species Specialist Group (ChSSG), and a certified assessor for the Global Biodiversity Standard (TGBS).

张金龙，博士，天津宝坻人，现居中国香港。2012 年在中国科学院植物研究所获得博士学位。嘉道理农场暨植物园（KFBG）植物保育部高级生态学主任（senior ecologist），自 2014 年起兼任 KFBG 植物标本馆馆长。他专注于植物多样性调查与森林生态学，长期致力于香港及华南地区的生物多样性保育与森林生态修复。他参与香港多个重要森林生态学有关的研究，包括大埔滘 20 公顷森林动态监测样地、大帽山次生林演替序列样地、原生树种用于森林恢复样地的建立和监测等。目前担任多个国际生态学术期刊的审稿人，发表研究论文逾五十篇，并参与两本专著的出版。此外，他编写和维护多个用于生物多样性数据分析的 R 语言软件包，如 spaa、plantlist、herblabel 等，积极推动 R 语言在生物多样性研究中的应用。他是 IUCN 中国物种专家组（ChSSG）成员，全球生物多样性标准（TGBS）认证评估员。

Session day 2 – 23rd November 2025

Biodiversity large-scale pattern and conservation strategies (生物多样性大尺度格局与保护战略)



Professor WU Hui (武慧)

Northeast Forestry University (东北林业大学)

WU Hui, tenure-track Professor and supervisor of master's students at the College of Forestry, Northeast Forestry University. Her research focuses on species distribution patterns, spatiotemporal dynamics of habitat, impacts of climate change and human activities, multi-factors co-prioritized conservation planning, protected-area networks optimization, and international biodiversity commitments progress. She has published multiple first-authored several SCI papers in journals like *National Science Review*, *Conservation Biology*, and *Biological Conservation*; co-authored over 20 papers; co-published one monograph; and holds six software copyrights. She has served as Principal Investigator for the National Natural Science Foundation of China (Type C) and the China Postdoctoral Science Foundation (General Program), and Co-Principal Investigator in a major project supported by the Ministry of Science and Technology of China. She has also participated in sub-projects under the National Development and Reform Commission's Major S&T Infrastructure program, the Ministry of Science and Technology's Key Special Project for Strategic S&T Innovation Cooperation, and strategic research and consulting projects of the Chinese Academy of Engineering, in addition to several commissioned projects for national parks and national nature reserves.

武慧，东北林业大学林学院预聘教授，硕士研究生导师。从事物种分布格局、生境时空动态变化、气候变化与人类活动影响、多要素协同保护优先区识别、自然保护地网络优化、国际生物多样性履约进展等方面研究。以第一作者在 *National Science Review*、*Conservation Biology*、*Biological Conservation* 等期刊发表 SCI 论文多篇；合作发表论文 20 余篇，出版专著 1 部、获软件著作权 6 项；主持国家自然科学基金青年科学基金（C 类）、中国博士后科学基金面上资助、国家重点研发计划子课题（担任项目联系人）；参与发改委国家重大科技基础设施子课题、科技部战略性科技创新合作重点专项、中国工程院战略研究与咨询项目等多项国家级科研项目，以及多个国家公园和国家级自然保护区委托的横向课题。



Professor John M. Halley

University of Ioannina, Greece (希腊阿约尼纳大学)

Prof. John M. Halley specializes in the application of mathematics, computers and statistics to ecological and other environmental problems, especially to the conservation of biological diversity. His current interests are the development of ecological community models to describe extinction debt. He is also interested in the phenomenon of long-range dependence, including its application to population time series and global temperature changes. He likes to use fractal statistics in this and other areas. He focuses on the dynamics of extinction, $1/f$ -noise and ecology, hyper-exponential growth as an ecological process, the conservation value of sacred forests, and the Ecology of orchids.



Dr. Michele Lussu

University of Bologna, Italy (意大利博洛尼亚大学)

After approaching biology, Dr. Michele Lussu developed a passionate interest in orchids and their ecological mechanisms. After studying the orchids of Sardinia, he continued his studies focusing on pollination mechanisms first at the University of Milan and then on biosystematics at Imperial College London. In 2019, he obtained his European PhD by investigating the reproduction mechanisms of insular orchids. Taking advantage of the charismatic role of these plants, he works at the University of Bologna, Italy as post doctoral researcher and he is focused ecological patterns of orchids and their conservation in the Mediterranean Basin.



Professor GUO Wen-Yong (郭文永)

East China Normal University (华东师范大学)

Dr. GUO Wen-Yong is a researcher at East China Normal University, China. His research primarily focuses on plant invasion ecology, biodiversity conservation, and global climate change. Thus far, Wen-Yong has authored over 60 peer-reviewed papers, published in journals such as *PNAS*, *Nature Plants*, *Nature Communications*, *Ecology Letters*. Wen-Yong has served as an associate editor for *Biological Invasions* since 2021, and an editorial board member of *Landscape Ecology* since 2025.

Wen-Yong obtained his PhD from Aarhus University, Denmark, in March 2015. He then completed a 2.5-year postdoctoral fellowship at the Institute of Botany, Czech Academy of Sciences, followed by a three-year postdoctoral fellowship at Aarhus University. His research during those periods focused on the invasion mechanisms of invasive plant species and tree biodiversity conservation under global change. After joining East China Normal University, Wen-Yong has continued his work on plant invasions and biodiversity conservation while conducting field investigations on invasive plant species in mountain regions across China.

郭文永，华东师范大学生态与环境科学学院青年研究员，博士生导师。从事植物入侵生态学、生物多样性及其保护和宏生态学等相关研究工作。承担国家自然科学基金面上项目两项，入选上海市海外高层次人才引进计划并获上海市浦江人才计划资助。担任国际生物入侵领域专业期刊 *Biological Invasions* 副编辑（Associate Editor）和 *Landscape Ecology* 期刊编委。近五年以第一和 / 或通讯作者于 *PNAS*、*Nature Plants*、*Nature Communications*、*Ecology Letters*、*Journal of Ecology* 等期刊发表论文十余篇。



Professor CHEN Si-Chong (陈思翀)

Wuhan Botanical Garden, Chinese Academy of Sciences
(中国科学院武汉植物园)

Prof. CHEN Si-Chong is the PI and research professor of the Macroecology Group at Wuhan Botanical Garden, Chinese Academy of Sciences. She was selected for the “Distinguished Overseas Young Talents” programme and CAS high-level talent programmes in 2021. She serves as Deputy Director of the State Key Laboratory of Plant Diversity and Specialty Crops, and President-elect of the International Society for Seed Science. She is also Deputy Chair of the Seed Ecology Committee of the Ecological Society of China, Member of the Plant Ecology Committee of the Botanical Society of China, Honorary Research Fellow at the Royal Botanic Gardens, Kew, and Adjunct Associate Professor at the University of New South Wales, Australia. Her research focuses on plant regeneration, biotic interactions, and life strategies at macroecological scales, aiming to advance understanding of ecology and plant diversity by bridging data, intuition, and theory, integrating replicated studies, and scaling insights from local systems to global biomes. She has published over fifty peer-reviewed papers in leading journals, including *Nature*, *Ecology Letters*, and *New Phytologist*. She also serves the scientific community as an editorial board member for *Methods in Ecology and Evolution*, *Seed Science Research*, and *Oikos*, as well as for the several Chinese journals.

陈思翀，研究员，博士生导师，中国科学院武汉植物园宏观生态学学科组组长，植物多样性与特色经济作物全国重点实验室副主任，国家和中国科学院高层次引进人才，国际种子科学学会候任主席，中国生态学会种子生态专业委员会副主任，中国植物学会植物生态专业委员会委员，英国皇家植物园邱园荣誉研究员，澳大利亚新南威尔士大学兼职副教授。主要以种子为对象开展植物繁殖更新和动植物关系的宏观生态学研究，在大尺度上探究植物多样性格局和生命策略，在 *Nature*、*Ecology Letters*、*New Phytologist* 等期刊发表论文五十余篇。目前担任国际期刊 *Methods in Ecology and Evolution*、*Seed Science Research*、*Oikos* 的编委，中文核心期刊《生物多样性》、《植物生态学报》和《植物科学学报》的编委。

Dr. Michele Di Musciano

University of L'aquila, Italy (意大利拉奎拉大学)

Michele Di Musciano is an Assistant Professor at the University of L'Aquila (Italy) and a member of the BIOME Lab at the University of Bologna. His research focuses on vegetation ecology, island and mountain biogeography, and biodiversity conservation under global change. Combining field monitoring, ecological modelling, and large biodiversity databases, he investigates how effectively protected and strictly protected areas represent and safeguard biodiversity. His work contributes to national and international initiatives supporting the implementation of the Kunming–Montreal Global Biodiversity Framework.



Dr Hafiz Muhammad Wariss

Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences (中国科学院新疆生态与地理研究所)

Dr. Hafiz Muhammad Wariss is a plant scientist specializing in plant taxonomy, genomics, and conservation of medicinal plants, with a focus on protecting endangered medicinal species in arid ecosystems. Currently based at the Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences, Dr. Wariss investigates the phylogenomic and population genomic patterns that underlie the survival of medicinal plants in Xinjiang's arid and semi-arid ecosystems.

Dr. Wariss earned his PhD from the Kunming Institute of Botany (CAS), where his doctoral research investigated the molecular phylogenetics and diversification dynamics of the IRLC group within the Fabaceae family. His postdoctoral work at KIB advanced the field of conservation genomics, focusing on *Acer yangbiense*—a critically endangered plant species with an extremely small population (PSESP). Beyond his academic research, Dr. Wariss has led genomics-driven conservation initiatives at Lushan Botanical Garden, integrating molecular insights with practical conservation strategies for threatened medicinal and food plants.

With deep expertise across phylogenomics, conservation genetics, plant systematics, ethnobotany and metabolomics, Dr. Wariss contributes a holistic perspective to understanding plant evolution and the genomic foundations of resilience—particularly within the fragile ecosystems of Central and South Asia. His work demonstrates the power of integrative genomics in informing sustainable conservation and biodiversity management.

Biodiversity monitoring and maintenance mechanism (生物多样性监测与维持机制)



Professor LUO Shi-Xiao (罗世孝)

South China Botanical Garden, Chinese Academy of Sciences (中国科学院华南植物园)

Prof. Dr. LUO Shi-Xiao, is the Curator of the Herbarium and the Deputy Director of Plant Science Center of South China Botanical Garden, Chinese Academy of Sciences. He got his PhD degree in Graduate University of Chinese Academy in 2007, then did post-doctoral research in University of Munich and University of Toronto from 2009 to 2011. His main research interest is the evolutionary ecology of species interactions, especially plant-insect interactions, pollination biology and evolution and ecology of plant breeding systems. Most current projects combine ecological, behavioral, chemical, phylogenetic and genetic tools to deal with the evolution of specificity and adaptation. In the recently years, he made progress in field of plants-pollinator coevolution of early diverging angiosperms (Schisandraceae plants - resin midges) and Leafflower plants- Leafflower moths obligated pollination system. Research findings have been published in journals such as *New Phytologist*, *The American Naturalist*, and *Proceedings of the Royal Society B*. Led the development of the “BioGrid Life Network”, the “Smart Museum Management System”, and the pollen intelligent recognition system “AiPollen”.

罗世孝，中国科学院特聘核心研究员，博士生导师，兼任标本馆馆长、华南植物鉴定中心主任、植物科学中心副主任。2007 年于中国科学院大学获得博士学位，2009-2011 年在德国慕尼黑大学和加拿大多伦多大学从事过博士后研究工作。从事植物与传粉昆虫协同进化和传粉昆虫多样性等研究工作，主要研究兴趣是生物互作的进化生态学，特别是植物 - 传粉昆虫互动、授粉生物学以及植物繁殖系统的进化和生态学。综合生态学、行为学、化学、系统发生学和遗传学工具来研究物种间互动和适应性的演化。在近年来，在早期分化的被子植物（五味子科植物 - 松脂瘿蚊）与叶下珠 - 叶下珠蛾声望生授粉系统的协同演化领域取得了进展。相关研究成果在 *New Phytologist*, *The American Naturalist*, *Proceedings of the Royal Society B* 等期刊发表。牵头开发“生命网格 BioGrid”与“标本馆智慧化管理系统”和花粉智能识别系统“AiPollen”。

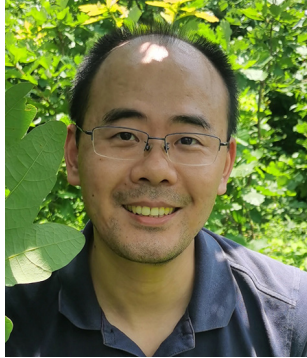


Professor LIAN Ju-Yu (练琚愉)

South China Botanical Garden, Chinese Academy of Sciences (中国科学院华南植物园)

Lian Ju-Yu, PhD, Professor, the researcher and doctoral supervisor at the South China Botanical Garden of the Chinese Academy of Sciences. She earned her bachelor's degree from Sun Yat-sen University in 1999 and her master's degree in 2002, followed by her PhD from the Graduate School of the Chinese Academy of Sciences in 2008. Since 2002, she has been working at the South China Botanical Garden, and in 2022, she was appointed to a specially appointed research position at the Chinese Academy of Sciences. Her research focuses on plant community ecology, particularly on mechanisms for maintaining biodiversity and technologies for enhancing ecological functions. Through interdisciplinary approaches combining community ecology, she explores forest community structure and species coexistence mechanisms from multiple dimensions, including species diversity, phylogenetic relationships, and functional aspects. She also emphasizes preserving the natural attributes of ecosystems during the development of the Guangdong-Hong Kong-Macao Greater Bay Area, developing targeted technical systems to improve coastal zone ecological functions. Lian has led and participated in major national research projects, including the National Key R&D Program, National Natural Science Foundation projects, and the Strategic Priority Research Program of the Chinese Academy of Sciences. She has published over 70 SCI-indexed papers in international academic journals.

练琚愉，女，博士，中国科学院华南植物园研究员，博士生导师。1999 年和 2002 年获中山大学学士和硕士学位，2008 年获中国科学院研究生院博士学位。2002 年至今在中国科学院华南植物园工作，2022 年入选中国科学院特聘研究岗位。从事植物群落生态学的研究工作，特别关注生物多样性维持机制与生态功能定向提升技术研究。通过群落生态学与多学科间的交叉，从物种、谱系和功能的多维度多样性视角探讨森林群落构建与物种共存机制；关注粤港澳大湾区建设过程中生态系统的自然属性维护，研发大湾区海岸带生态功能定向提升技术体系。主持和参加国家重点研发计划项目、国家自然科学基金（联合基金、面上、青年）项目、中国科学院 B 类先导科技专项等。在国际学术期刊上发表 SCI 收录论文 70 余篇。



Professor WANG Bao-Sheng (王宝生)

South China Botanical Garden, Chinese Academy of Sciences (中国科学院华南植物园)

WANG Bao-Sheng is a Professor at the South China Botanical Garden, Chinese Academy of Sciences (CAS). He obtained his PhD in Botany from the Institute of Botany, CAS (Beijing) in 2009, and another PhD in Ecology from Umeå University, Sweden in 2013. From 2013 to 2017, he conducted postdoctoral research at Uppsala University (Sweden) and Duke University (USA). Since 2018, he has been working at the South China Botanical Garden. His research focuses on the fundamental theoretical question of "the genetic basis and driving mechanisms of adaptive evolution". Using interdisciplinary approaches including population genetics, ecology, and genomics, he systematically investigates the roles of ancestral polymorphic loci, chromosomal inversions, interspecific gene introgression, and local adaptation in the origin of species adaptability and long-term evolutionary processes across individual, population, and species levels. He has published over 30 papers in internationally renowned journals in ecological genetics and evolutionary biology, such as *Nature Ecology & Evolution*, *Nature Communications* and *Genome Biology*.

王宝生，中国科学院华南植物园研究员，博士研究生导师。2009年毕业于中国科学院北京植物研究所获得植物学博士学位，2013年毕业于瑞典于默奥大学获得生态学博士学位。2013年至2017年在瑞典乌普萨拉大学和美国杜克大学从事博士后研究。2018年至今，在中国科学院华南植物园工作。主要研究聚焦于“适应性进化的遗传基础与驱动机制”这一重要的基础理论问题，利用群体遗传学、生态学和基因组学等多学科研究手段，从个体、群体和物种多个层面系统解析祖先多态性位点、染色体倒位、种间基因渐渗、局地适应性在物种适应性产生和长期进化过程的重要作用。相关工作在 *Nature Ecology & Evolution*、*Nature Communications*、*Genome Biology* 等国际知名生态遗传及进化生物学期刊发表。



Professor SHEN Guo-Chun (沈国春)
East China Normal University (华东师范大学)

SHEN Guo-Chun, Professor at the School of Ecological and Environmental Sciences, East China Normal University. His research centers on the assembly mechanisms of forest communities, with a specialization in evergreen broad-leaved forests. He employs quantitative modeling and statistical inference to investigate community patterns and processes, particularly the effects of habitat filtering and interspecific competition on species coexistence. He earned his PhD in Ecology from Zhejiang University in 2009, and has strengthened his international research profile through academic appointments at the University of Alberta (Canada), Sun Yat-sen University, the Helmholtz Centre for Environmental Research (UFZ, Germany), and Aalborg University (Denmark). His contributions include spatial point pattern analysis for quantifying ecological processes, estimation of intraspecific trait variation, and distance-based population size modeling. These advances are complemented by extensive experimental work, including seedling manipulation experiments and long-term field monitoring. As Principal Investigator, he has secured and led multiple competitive grants, including four projects from the National Natural Science Foundation of China, two sub-projects under the National Key R&D Program. His research output includes 48 peer-reviewed papers, with 36 publications in internationally recognized journals such as *Nature Communications*, *Ecology Letters*, *Ecology*, *Communication Biology*, and *Methods in Ecology and Evolution*. Under his supervision, 14 graduate students have completed their degrees, with one recipient of the National Outstanding Doctoral Dissertation Award in Ecology.

沈国春，华东师范大学生态与环境科学学院教授，博士生导师。主要从事以常绿阔叶林为代表的群落构建机制研究。研究方向围绕群落格局与过程的定量描述和统计推断、生境过滤和种间竞争对森林植物群落的影响等。2009 年博士毕业于浙江大学，曾在加拿大 Alberta 大学、中山大学、德国 UFZ 环境研究中心、丹麦 Aalborg 大学从事联合培养博士生、博士后和访问学者学习。至今，理论工作主要涉及基于空间点格局的生态过程相对重要性衡量方法、种内性状差异估计方法和基于距离的种群大小估计方法等；同时也已开展多年的幼苗控制实验和野外观测。已主持 4 项国家自然科学基金项目，2 项国家科技部重点研发专题；1 项上海市科委面上项目以及 2 个浙江省科技厅项目；已发表科研论文 48 篇，其中 SCI 论文 38 篇，包括 *Nature Communications*, *Ecology letters*, *Ecology*, *Communication Biology*, *Methods in Ecology and Evolution* 等；现担任中国科技期刊卓越行动计划《植物生态学报》编委。已培养研究生 14 人，其中 1 人获第二届全国生态学优秀博士学位论文。

