

Exploring the Possibilities of Stable Isotope Ecology at HKU

Date 3rd Sep (Fri.)

Time 16:00 (UTC+8)

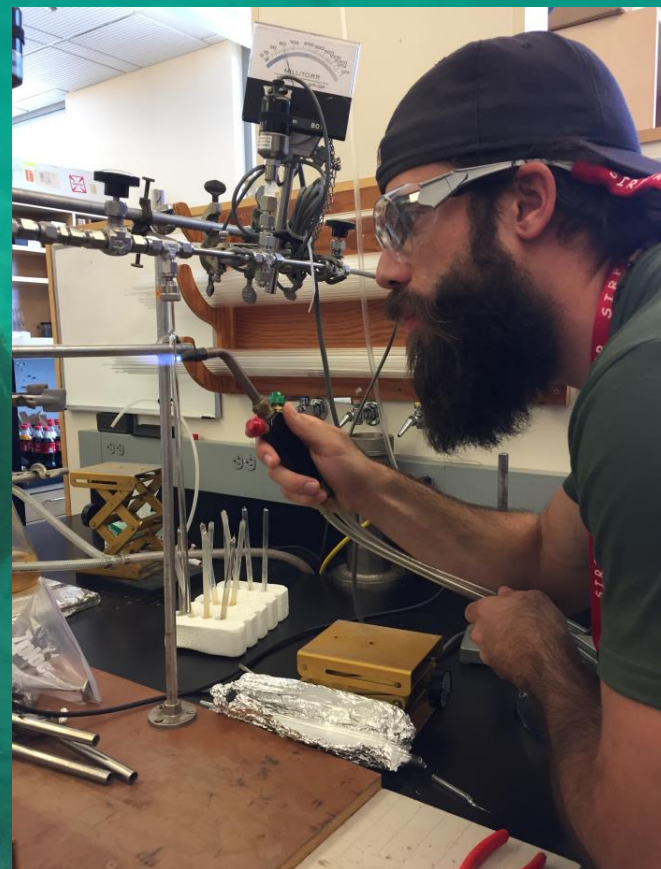
Venue 3N01 & Zoom



You can also email us to require the Zoom link
(check SBS website → NEWS & EVENTS)

Stable isotopes provide ecologists with a comprehensive method for tracing the cycling of elements within organisms and the environment. Directly tracking these flows has furthered our understanding of the dynamics of complex biological systems. Here, I will present an overview of those methods, instruments, techniques, and research opportunities applicable to ecologists that stable-isotope analysis (SIA) can provide. Specifically, I will highlight recent additions to the Stable Isotope Ratio Mass Spectrometry Laboratory (SIRMS) at HKU which have expanded our ability for SIA within the facility.

As an example, using minimal biological material SIA can help to: **1) investigate the trophic dynamics** of organisms and food webs; **2) identify the source of nutrients** and their cycling processes in ecosystem; and **3) track the geographic origin and movements** of biological material. Methodologically, **bulk analysis** of tissue can identify an organisms trophic niche within a larger community and monitor changes through space and time. Employing **isotope tracers** and new instrumentation allows researchers to take this further and trace how those assimilated nutrients are metabolized. Finally, using **compound-specific isotope analysis (CSIA)** of amino acids can confidently identify a species trophic niche and major carbohydrate source, absent of known food web baselines. In this talk, I explore these applications using seminal case-studies and ongoing research within the Division to demonstrate the range of applications of SIA available for ecological research.



About speaker:

Dr. Jonathan Cybulski is a recent Ph.D. from the Division of Ecology & Biodiversity/SWIMS and is now the SIRMS Postdoctoral Fellow partly supported by the Faculty of Science. His Ph.D. research focused on Hong Kong's coral reefs - using historical and isotope ecology to reconstruct their past and present condition - to conserve their future. Jon continues to use a combination of historical research, archaeology, ecology, geology, and biogeochemical methods to understand and communicate the story of ecosystems through time.

All are welcome!