Curriculum vitae

Stephen Chua
Research Assistant Professor
Earth Observatory of Singapore
Nanyang Technological University
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Education

PhD, Interdisciplinary Graduate School, 2019
Earth Observatory of Singapore, Nanyang Technological University
Disciplines: Sedimentology, Geomorphology, Sea level, Palaeoclimate

MSc, National Institute of Education, 2010
Nanyang Technological University
Specialization: Environmental Science (Life science)

BA Hons (2nd Upper), National Institute of Education, 2003
Nanyang Technological University
Disciplines: Sedimentology, Land use change, Mangroves

Diploma in Education (Distinction) 2000
National Institute of Education, Nanyang Technological University

Academic Experience/Activities

Research Assistant Professor, Earth Observatory of Singapore 1 March 2023
Principal Investigator
Project tenure: 2023 – 2026 (PUB)

Research Fellow, Earth Observatory of Singapore 20 June 2019 –
Involved in the following ongoing projects: 28 Feb 2023

- National Sea Level Programme (NSLP) – NEA grant
- SouthEast Asia Sea-Level Program (SEA2) Programme – Tier 3 MOE

Member, Singapore Stratigraphy Committee (BCA) 14 Jan 2014 - present

Visiting Research Associate, *British Geological Survey (BGS)* 1 Feb 2015 - 31 Jan 2017

Professional Experience/Activities

Consultant (Geological and Environmental Monitoring & Assessment) 1 Jan 2021 – 31 Dec 2021

Head of Department (Science), MOE Singapore 1 July 2010 - 28 June 2013

Awards

Outstanding Student Presentation Award (OSPA) 24 Jan 2019
American Geophysical Union (AGU) (AGU 2018)

Endeavour Research Fellow Australia Government Awards	11 Oct 2017 – 12 Mar 2018
Outstanding Teaching Assistant Award (NTU)	July 2016

Professional Training and Qualifications

Management and Leadership in Schools programme (MLS) National Institute of Education	14 Jan 2013 – 5 May 2013

Selected Publications (Papers)

Chua, S., Switzer, A.D., Gouramanis, C., Dixit, Y., Bird, M.I., Horton, B.P., (submitted). Coastal response to Holocene sea-level change: a case study from the Kallang River, Singapore. Marine Geology.

Li, T., Tan, F., **Chua, S.**, Khan, N. S., Shaw, T., Majewski, J., ... & Horton, B. (submitted). Glacial Isostatic Adjustment modelling of the mid-Holocene sea-level highstand of Singapore and Southeast Asia. Quaternary Science Review.

Shaw, T. A., Li, T., Ng, T., Cahill, N., **Chua, S.**, Majewski, J. M., ... & Horton, B. P. (2023). Deglacial perspectives of future sea level for Singapore. Communications Earth & Environment, 4(1), 204.

Dixit, Y., **Chua, S.**, Yan, Y. T., & Switzer, A. (in review). Hydroclimatic impacts of '8.2-ka event' in western Indo-Pacific Warm Pool. Communications Earth & Environment.

Chua, S., Switzer, A.D., Li, T., Chen, H., Christie, M., Shaw, T.A., Khan, N.S., Bird, M.I., Horton, B.P. (2021). A new Holocene sea-level record for Singapore. The Holocene, 09596836211019096.

Yan, Y.T., **Chua, S.,** DeCarlo, T.M., Kempf, P., Morgan, K.M., Switzer, A.D. (2021). Core-CT: A MATLAB application for the quantitative analysis of sediment and coral cores from X-ray computed tomography (CT). Computers & Geosciences 156, 104871.

Chua, S., Switzer, A.D., Kearsey, T.I., Bird, M.I., Rowe, C., Chiam, K., Horton, B.P. (2020). A new Quaternary stratigraphy of the Kallang River Basin, Singapore: Implications for urban development and geotechnical engineering in Singapore. Journal of Asian Earth Sciences 200, 104430.

Chua, S., A. D. Switzer, K. Hartman, N. Bhatia, and J. Koh (2020), Assessing Undergraduate Learning in Earth Science Residential Fieldwork, Asian Journal of the Scholarship of Teaching and Learning Special Issue (Vol. 10, No. 1).

Bird, M. I., **Chua, S**., Fifield, L. K., Teh, T. S., & Lai, J. (2004). Evolution of the Sungei Buloh–Kranji mangrove coast, Singapore. *Applied Geography, 24*(3), 181-198.

Bird, M. I., Fifield, L. K., **Chua, S**., & Goh, B. (2004). Calculating sediment compaction for radiocarbon dating of intertidal sediments. *Radiocarbon, 46*(1), 421-435.

Selected Publications (Book Chapters)

Koh, C. B. & **Chua, S.** (2022). Race and Rise Against the Tide : Sustainable Development for Singapore [Book Chapter]. In Towards a Sustainable Future : Delivering positive economic, environmental and social impact. Editted by Foo, M. D., Koh, C.B., Pua, M. Nanyang Business School, Nanyang Technological University, Singapore.

Leslie, A. G., Dobbs, M. R., Dodd, T. J., Gillespie, M. R., Kearsey T. I., Kendall, R. S., Lewis, M. A., Bide, T. P., Millar, I. L., **Chua, S.**, Switzer, A. D., Chiam, S. L., Goay, K. H., Lau, S. G., Lim, Y. S., Zaw, M. H., Kyaw, K. Z., 2021. Singapore Geology (2021): Memoir of the bedrock, superficial and engineering geology. Building & Construction Authority, Singapore.

Invited Talks/Presentations/Webinars

Invited Speaker

World Climate Research Programme (WCRP) conference — 12 July 2022
'A new Holocene sea-level record for Singapore'

PALSEA/WCRP/IAG Monthly Seminar (April – July 2021) — 13 July 2021
'Constraining magnitudes and rates of Holocene sea-level change : Case study of Singapore'

Keynote Speaker

NTU-BCA Workshop on 3D Geological Modelling — 9 January 2020
'A new Quaternary stratigraphy of the Kallang River Basin, Singapore'

Session Speaker

St John's Island Marine Lab Anniversary — 5 December 2019
'Geology of the Southern Islands and potential for research and outreach'

Selected Presentations/Posters

Chua, S., Switzer, A.D., Gouramanis, C., Dixit, Y., Bird, M.I., Horton, B.P., (2022). Coastal response to Holocene sea-level change: a case study from the Kallang River, Singapore. Presentation at PALeo constraints on SEA level rise (PALSEA) 2022.

Dixit, Y., **Chua, S.,** Yan, Y., Switzer A. (2021). High-resolution sedimentary records of Holocene hydroclimate variability in the Maritime Continent. AGU Fall Meeting 2021

Shaw, T., **Chua, S.,** Majewski, J., Tanghua, L., Samanta, D., Kopp, R., Horton, B. (2021). Past, Present and Future Sea Levels in Singapore, EGU General Assembly Conference Abstracts, pp. EGU21-10615.

Chua, S., Majewski, J., Li, T., Chen, H., Tan, F., Tan, C., Horton, B. (2020).
New Holocene sea-level records from the far-field and comparison with Glacial Isostatic Adjustment model predictions.
Presentation at PALeo constraints on SEA level rise (PALSEA) 2020.

Chua, S., Switzer, A., Shaw, T., Khan, N., Horton, B. (2019).
Singapore relative sea-level history revealed from Holocene mangrove peats
Presentation at Mangrove Macrobenthos and Management meeting (MMM5) 2019.

Chua, S., Switzer, A., Khan, N., Shaw, T., Bird, M., Rowe, C., Horton, B. (2019).
A new Holocene sea level record for Singapore.
Presentation at International Union for Quaternary Research (INQUA) 2019.

Chua, S., Switzer, A., Horton, B., Bird, M. Khan, N., Shaw, T., Roy, K., Rowe, C., Whan, J. (2018).
Sea-Level and Coastal Evolution of the Kallang River Basin, Singapore.
Presentation at American Geophysical Union (AGU) Fall Meeting 2018.

Chua, S., Switzer, A., Chiam, K., Sieh, K., Rubin, C. (2017). Quaternary Stratigraphy of the Kallang River Basin, Singapore.
Presentation at AOGS (Asia-Oceania Geosciences Society) Conference 2017.

Major Research Grants

Principal Investigator (PI) of grant CWR-2102-0005 7 Sept 2022
'Baseline data collection and projections of the impacts of Climate Change on Singapore's offshore water resources'
Project tenure : 2023 – 2026 (Awarded by PUB)

Training / Teaching Experience

Surviving and Thriving Amidst Climate Change Executive Certificate in Corporate and Environmental Sustainability (organised by Nanyang Business School, NTU)	May 2022- Present (Quarterly)
Environment and Society (ES1001)	Sem 1 2014/15
Environmental Earth Systems Science (ES8005)	Sem 1 2015/16
Climate Change (ES8007/ES1007)	Sem 2 2015/16
Sedimentology - Layers and Landforms (ES2004)	Sem 1 2016/17

Skills & Expertise (Training)

Organic carbon stable isotope analysis
(Endeavour Fellowship – Australian Government) Oct 2017
Advanced Analytical Centre, James Cook University, Australia - Mar 2018

XRF (X-Ray Flourescence) core-scanning
NIOZ (Royal Netherlands Institute for Sea Research), Netherlands Jun 2016
Sediment core sampling and analysis
ECORD Summer School, MARUM, Bremen, Germany Mar 2016

Geological Modelling
British Geological Survey (BGS), Edinburgh, Scotland Feb 2015