MARIA ROSABELLE ("ROSS") ONG

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EDUCATION

M. Phil. Earth and Environmental Sciences, *Columbia University*, New York, NY, USA, Feb. 2023

M.A. Earth and Environmental Sciences, *Columbia University*, New York, NY, USA, Jun. 2021

B.S. Biology, *cum laude, University of the Philippines Manila,* Manila, Philippines, Oct. 2007

ACADEMIC APPOINTMENTS

Ph.D. Candidate, *Columbia University, Lamont Doherty Earth Observatory, American Museum of Natural History*, New York, NY, USA, Sep. 2019 – present

Research Assistant, *Asian School of the Environment / Earth Observatory of Singapore, Nanyang Technological University*, Singapore, Dec. 2015 – Aug. 2019

PREVIOUS PROFESSIONAL EXPERIENCE

Water Quality Analyst, *Resorts World Sentosa Pte. Ltd.,* Singapore, 2014-2015
Service Manager / Executive, *CPG Facilities Management Pte. Ltd.*, Singapore, 2011-2014

PUBLICATIONS (IN REFEREED JOURNALS)

Walter, R. M., Sayani, H. R., Felis, T., Cobb, K. M., Abram, N. J., Arzey, A. K., Atwood, A., Brenner, L. D., Dassié, E. P., DeLong, K. L., Ellis, B., Emile-Geay, J., Fischer, M. J., Goodkin, N. F., Hargreaves, J. A., Kilbourne, K. H., Krawcyzk, H. A., McKay, N. P., Moore, A. L., Murty, S. A., **Ong, M. R.,** Ramos, R. D., Reed, E. V., Samanta, D., Sanchez, S. C., Zinke, J., and the PAGES CoralHydro2K Project Members (2023). The CoralHydro2K Database: a global, actively curated compilation of coral $\delta^{18}O$ and Sr/Ca proxy records of tropical ocean hydrology and temperature for the Common Era. *Earth System Science Data, 15*(5), 2081-2116. https://doi.org/10.5194/essd-15-2081-2023

Ong, M. R., Goodkin, N. F., Guppy, R., Hughen, K. A. (2022). *Colpophyllia natans* from Tobago, a novel paleoclimate archive for reconstructing sea surface temperatures in the tropical Atlantic. *Paleoceanography and Paleoclimatology, 37*(12), e2022PA004483. https://doi.org/10.1029/2022PA004483

Kaushal, N., Tanzil, J. T. I., Zhou, Y., **Ong, M. R.,** Goodkin, N. F., Martin, P. (2022). Environmental Calibration of Coral Luminescence as a Proxy for Terrigenous Dissolved Organic Carbon Concentration in Tropical Coastal Oceans. *Geochemistry, Geophysics, Geosystems, 23*(10), e2022GC010529. https://doi.org/10.1029/2022GC010529

Goodkin, N. F., Samanta, D., Bolton, A., **Ong, M. R.**, Phan, K. H., Vo, S. T., Karnauskas, K. B., Hughen, K. A., (2021). Natural and Anthropogenic Forcing of Multi-decadal to Centennial Scale Variability of Sea Surface Temperature in the South China Sea. *Paleoceanography and Paleoclimatology, 36*(10), e2021PA004233. https://doi.org/10.1029/2021PA004233

Goodkin, N. F., Bolton, A., Hughen, K. A., Karnauskas, K. B., Griffin, S., Phan, K. H., Vo, S. T., **Ong, M. R.**, Druffel, E. R. M. (2019). East Asian Monsoon variability since the sixteenth century. *Geophysical Research Letters, 46*(9), 4790-4798. https://doi.org/10.1029/2019GL081939

He, S., Goodkin, N. F., Jackisch, D., **Ong, M. R.**, Samanta, D. (2018). Continuous real-time analysis of the isotopic composition of precipitation during tropical rain events: Insights into tropical convection. *Hydrological Processes*. 32(11), 1531-1545. https://doi.org/10.1002/hyp.11520

DATASET CONTRIBUTIONS

Ong, M. R., Goodkin, N. F., Guppy, R., Hughen, K. A. (2022). NOAA/WDS Paleoclimatology – Tobago coral Sr/Ca, extension and SST data from 1988-2016 CE [Dataset]. NOAA National Center for Environmental Information. https://doi.org/10.25921/9xbw-sk21

AWARDS

Kenneth and Linda Ciriacks Graduate Fellowship in Earth and Environmental Sciences, *Columbia University (GSAS),* 2020-2021
Richard Gilder Graduate School Graduate Fellow, *American Museum of Natural History*, 2019
Lerner-Gray Fund for Marine Research, *American Museum of Natural History*, 2019
Dean's Fellow, *Department of Earth and Environmental Sciences, Columbia University,* 2019

RESEARCH GRANTS

Goodkin, N. F. (Lead PI) and **Ong, M. R.** (Co-PI). Reconstructing Florida Current transport to better understand Atlantic Meridional Overturning Circulation (AMOC) behavior in a warming world. *LDEO – The Climate Center.* $12,000. 01/01/2023-12/31/2024.

FIELD EXPERIENCE

Coral core collection. Fort Lauderdale, Florida, *USA.* Jul. 2023
Coral core collection. Speyside and St. Giles Island, *Trinidad and Tobago.* Oct. 2019
Coral core collection and water sampling. Southern Islands, *Singapore Straits.* 2016-2019

TEACHING EXPERIENCE

Teaching Assistant, Chemistry of Continental Waters, *Columbia University,* Spring 2022
Teaching Assistant, Earth's Oceans and Atmosphere, *Columbia University,* Spring 2021

INVITED PRESENTATIONS AND LECTURES (*Oral Presentation)

***Ong, M. R.,** Untapping a New Climate Archive: *Colpophyllia natans* Climate Reconstructions in the Tropical Atlantic. *University of New Mexico – Center for Stable Isotopes Brown Bag Seminar.* Virtual Presentation. April 03, 2023.

***Ong, M. R.,** Decolonizing Paleontology: A Case Study. *Seminar in Race, Climate Change, Environmental Justice: On Geology's Colonial Legacies (Spring 2023).* Guest Lecture. Feb. 16, 2023.

***Ong, M. R.**, Corals and Climate Change. *Lerner Gray Committee Meeting.* Virtual Presentation. May 05, 2020.

***Ong, M. R.**, Ramos, R. D., Corals as archives of past climate. *National Marine Biology and Museum and Aquarium*, Checheng, Pingtung, Taiwan, R.O.C., Sep. 2017

ACADEMIC SERVICE

Reviewer for American Geophysical Union Journal, *Paleoceanography and Paleoclimatology*. 2022-2023.

Reviewer for Association for the Sciences of Limnology and Oceanography (ASLO), *Limnology and Oceanography: Methods*. 2020.

SCIENTIFIC AND EDUCATIONAL OUTREACH

Billion Oyster Project's 9th Annual Student Symposium. Guest Reviewer/Judge. Billion Oyster Project. New York Harbor School, Governor's Island, New York, NY. June 2, 2023.

Frontiers Lecture: Unlocking Climate Data in Corals. Chat Moderator. AMNH EarthFest Online. Livestream on Zoom. April 22, 2021

Astronomy Online: From Sun to Sea Life. Chat Moderator. AMNH EarthFest Online. Livestream on YouTube. April 22, 2021.

Corals and Climate Change. Speaker. American Museum of Natural History (AMNH) Learn with Me Online Program. Livestream on YouTube. August 14, 2020.

Lamont Summer Mentorship Program Volunteer. Columbia University. Jun 2020-Aug 2020.

Featured in magazine article (for field work done in Trinidad and Tobago funded by Niarchos Expedition), *Rotunda* (April 2020 Issue)

WORKSHOP / CONFERENCE BY APPLICATION

Teaching Development Program Sprint – Foundational Track. Participant. Center for Teaching and Learning (CTL), Columbia University. June 5, 2023 – June 8, 2023.

ISOCAMP 2022. Participant. University of New Mexico – Center for Stable Isotopes. June 20, 2022 – July 01, 2022.

PROFESSIONAL AFFILIATIONS / MEMBERSHIPS

Member, American Geophysical Union, 2018, 2022-present
Member, International Coral Reef Society, 2020-present
Member, The Oceanography Society, 2022-present
Rescue Diver, Professional Association of Diving Instructors (PADI), Mar. 2018-present
Diving First Aid for the Professional Diver Provider, DAN, Sep. 2019-Aug. 2024

CONFERENCE PRESENTATIONS / ABSTRACTS (*Oral Presentation)

Ong, M. R., Goodkin, N. F., Fraser, A. G., Guppy, R., Hughen, K. A. Investigating the Utility of Coral Ba/Ca from Tobago as a Proxy for River Discharge and Regional Hydroclimate Variability in the Tropical Atlantic. *AGU Fall Meeting 2022*. Chicago, IL, USA. Dec. 12-16, 2022.

Goodkin, N. F., Kannad, A., Yambing, J. R., **Ong, M. R.,** Kilbourne, K. H., Hughen, K. A. Examination of the North Atlantic Oscillation and the Ability to Improve Marine Reconstructions Using Spatially Diverse Coral Records. *AGU Fall Meeting 2022*. Chicago, IL, USA. Dec. 12-16, 2022.

***Ong, M. R.,** Goodkin, N. F., Guppy, R., Hughen, K. A. *Colpophyllia natans,* a potential new paleoclimate archive for reconstructing sea surface temperatures in the tropical North Atlantic. *Ocean Sciences Meeting 2022* (Virtual). Feb. 24 – Mar. 4, 2022.

Goodkin, N. F., Samanta, D., Bolton, A., **Ong, M. R.**, Hoang, P. K., Vo, S.T., Karnauskas, K. B., Hughen, K. A. A novel identification of anthropogenic changes in South China Sea seasonal sea surface temperatures over the past 400 years. *Ocean Sciences Meeting 2022* (Virtual). Feb. 24 – Mar. 4, 2022.

***Ong, M. R.,** Tan, A. S. Y., Gan, M. C., Kho, P., Tanzil, J. T. I., Lee, J. N., Goodkin, N. F. Annual coral $\delta^{18}O$ variability from the Singapore-Malay Peninsula reveals impacts from ENSO. *14th International Coral Reef Symposium (ICRS).* Bremen, Germany (Virtual). Jul. 18-23, 2021 *(Abstract accepted and withdrawn)*

*Goodkin, N. F., Samanta, D., Hughen, K. A., **Ong, M. R.,** Bolton, A., Karnauskas, K. Vietnam climate experienced multi-decadal variability over the past 400 years and decoupling of seasonal SST with anthropogenic warming. *14th International Coral Reef Symposium (ICRS).* Bremen, Germany (Virtual). Jul. 18-23, 2021

***Ong, M. R.**, Reconstructing Long-Term Climate Variability using Slow Growing Brain Corals from the Caribbean. *12th Annual RGGS Second Year Student Symposium.* Virtual Presentation. Dec. 10, 2020.

***Ong, M. R.**, Reconstructing Long-Term Climate Variability using Slow Growing Brain Corals from the Caribbean. *LDEO First Year Colloquium.* Virtual Presentation. Apr. 17, 2020.

Ong, M. R., Tanzil, J. T. I., Goodkin, N. F. Coral $\delta^{18}O$ reconstructs sea surface salinity in the Singapore Straits revealing impacts from ENSO. *MSRDP Mid-term Symposium*. Nanyang University of Singapore, Singapore. Feb. 21-22, 2019.

Ong, M. R., Tanzil, J. T. I., Goodkin, N. F. Coral $\delta^{18}O$ reconstructs sea surface salinity in the Singapore Straits revealing impacts from ENSO. *EOS 2019 Scientific Annual Meeting*. Nanyang Technological University, Singapore. Jan. 10-11, 2019

Ong, M. R., Tanzil, J. T. I., Goodkin, N. F. Coral $\delta^{18}O$ reconstructs sea surface salinity in the Singapore Straits revealing impacts from ENSO. *AGU Fall Meeting 2018*. Washington D.C., USA. Dec. 10-14, 2018.

Loke, D, Goodkin, N. F., Bolton, A., **Ong, M. R.** 240-Year record of Sr/Ca and Ba/Ca from a coral off central Vietnam reveals impacts of monsoonal upwelling and La Niña rains. *AGU Fall Meeting 2018*. Washington D.C., USA. Dec. 10-14, 2018.

***Ong, M. R.**, Tanzil, J. T. I., Goodkin, N. F. Using coral Sr/Ca and $\delta^{18}O$ to track environmental changes in the Singapore Straits. *4th Asia Pacific Coral Reef Symposium*. Cebu, Philippines. Jun. 04-08, 2018.

He, S., Goodkin, N.F., Jackisch, D., **Ong, M. R.** Continuous real-time measurements of δ-values of precipitation during rain events: Insights into tropical convection. *AGU Fall Meeting 2017*. New Orleans, LA, USA. Dec. 11-15, 2017.

Jackisch, D., He, S., **Ong, M. R.**, Goodkin, N. F. Continuous and simultaneous measurements of precipitation and vapor isotopes over two monsoon seasons during 2016-2017 in Singapore. *AGU Fall Meeting 2017*. New Orleans, LA, USA. Dec. 11-15, 2017.

Jackisch, D., He, S., **Ong, M. R.**, Goodkin, N. F. Simultaneous measurements of stable isotope composition in precipitation and vapour during NE monsoon in Singapore. *AOGS 14th Annual Meeting*. Singapore. Aug. 06-11, 2017.

He, S., Goodkin, N. F., Jackisch, D., **Ong, M. R.** Continuous real-time analysis of isotopic composition of precipitation during tropical rain events using a diffusion sampler. *Advances in Stable Isotope Techniques and Applications Conference.* Canada. June 2017.

LABORATORY SKILLS

Experienced in chemical analysis using: (1) ThermoFisher iCAP 6000/7400 Inductively Coupled Plasma Optical Emission Spectrometer (ICP-OES), (2) Kiel IV Carbonate Device, (3) Thermo MAT 253 mass spectrometer, (4) Thermo Finnigan Gas Bench II, (5) Delta V Isotope Ratio Mass Spectrometer and (6) Picarro Diffusion Sampler – Cavity Ring-Down Spectrometer.

COMPUTER SKILLS

Knowledge in using Python, MATLAB, Kaleidagraph, QGIS 3, and OceanDataView (ODV). Proficient in Microsoft Office Suite, Adobe Photoshop, QAnalyseries, Datagraph. Well-versed in both MAC OS and Windows OS platforms.