

MELANDRI VLOK PHD

LECTURER IN BIOMEDICAL SCIENCES
NATIONAL GEOGRAPHIC EXPLORER

CONTACT

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Sydney, Australia

SKILLS

Anatomy and Physiology
Osteological Analysis
Archaeological Excavation
Ancient Disease Diagnosis
Media Communication

EDUCATION

PhD (ANATOMY)
THE UNIVERSITY OF OTAGO
2017-2020
Passed without corrections

Thesis Title: *The Impact of Human Interaction on the Health of Past Populations in Asia*

BA/ BSc (Honours)
THE AUSTRALIAN NATIONAL UNIVERSITY
2012-2016
First Class Honours

Major: *Biological Anthropology (Science)*
Major: *Archaeology (Arts)*
Minor: *Biology (Science)*
Minor: *Social Anthropology (Arts)*

LANGUAGES

English ██████████
Afrikaans ██████████
Japanese ██████████
Vietnamese ██████████

PROFILE

My research specialties are palaeoepidemiology and palaeopathology, the study of diseases in the past. My current research seeks to understand how prehistoric people adapted to climate change related changes to tropical diseases in the past as a potential proxy for future uncertainty. The primary aim of this research is to utilise new and pre-existing archaeological data from up to 10,000 years ago in Southeast Asia to understand the lived experience of diseases people in the past and to spatially map geographic hot spots of disease over time. The latter helps assess the conditions within which these pathogens evolved, especially in relation to climate change events.

WORK EXPERIENCE

LECTURER (CONTINUING)
The University of Notre Dame Australia, Sydney, NSW
JAN 2024-PRESENT

- Lecturer (Teaching and Research) in Biomedical Sciences (Level B4). I teach into the undergraduate degrees Bachelor of Biomedical Sciences and Bachelor of Occupational Therapy (Honours). I am the course co-ordinator for the first year anatomy and physiology courses and the second year pathology and reproduction and development courses. I supervise Honours and postgraduate research.

HONORARY RESEARCH AFFILIATE
The University of Sydney
School of Languages and Culture, Faculty of Arts and Social Sciences
JAN 2024-DEC 2024

STANDBY FORENSIC ANTHROPOLOGIST
Kenyon International Emergency Services
JAN 2023-PRESENT

- This standby role involves deployment for disaster recovery, management, human identification, and affected family services following environmental disasters and conflict.

POSTDOCTORAL RESEARCH ASSOCIATE
The University of Sydney
Sydney Southeast Asia Centre
NOV 2021-DEC 2023

- In this position I designed a research project focusing on ancient climate variation and their relationship with patterns of tropical disease

ASSISTANT RESEARCH FELLOW
The University of Otago, New Zealand
School of Biomedical Sciences
OCT 2020-NOV 2021

- This position involved management and recording of over 1000 Māori and Moriori ancestral skeletal remains (kōiwi tangata) that are housed in the department in preparation for their repatriation in the near future. My role responsibilities involved providing human skeletal analyses expertise and preparing casework reports for iwi (tribes), police or museums, and liaising with the New Zealand repatriation research network.

GUEST LECTURER/ LAB DEMONSTRATOR
The University of Otago, New Zealand
School of Biomedical Sciences
AUG 2017-JUL 2020

- Taught anatomy, physiology evolution, genetics, bioarchaeology, osteology and palaeopathology. Created the palaeopathology curriculum for the third year biological anthropology course in 2020.

GUEST LECTURER/ FIELD & LAB DEMONSTRATOR
Australian National University
JAN 2016-JUL 2017

- Field and laboratory biological anthropology and archaeology as volunteer

AWARDED GRANTS**TOTAL: AUD \$185,457, USD \$120,547****2024****Wenner Gren Foundation Post-PhD Grant**

Chief Investigator

American Association of Biological Anthropologists Cobb Professional Development Grant

Chief Investigator

Notre Dame Faculty of Medicine Nursing Midwifery and Health Sciences Scholarship of Teaching and Learning Seed Grant

Associate Investigator

University of Notre Dame Professional Development Fund

Chief Investigator

2023**Faculty of Medicine and Health Showcase Travel Grant**

Chief Investigator

Sydney Southeast Asia Centre Workshop Grant

Chief Investigator

2019**Elizabeth Jean Trotter Postgraduate Research Travelling Scholarship in Biomedical Sciences**

Chief Investigator

Brooker Travel and helloworld Doctoral Travel Scholarship

Chief Investigator

Australasian Society for Human Biology Student Travel Grant

Chief Investigator

2018**National Geographic Society Explorer Early Career Grant**

Chief Investigator

Australasian Society for Human Biology Studentship

Chief Investigator

Royal Society of New Zealand Skinner Fund

Chief Investigator

2017**University of Otago Doctoral Scholarship**

Chief Investigator

Australasian Society for Human Biology Student Travel Grant

Chief Investigator

2016**Student Development Grant- Otago University**

Chief Investigator

Australasian Society for Human Biology Student Travel Grant

Chief Investigator

2015**Student Enrichment Extracurricular Fund Australian National University**

Chief Investigator

PUBLICATIONS**TOTAL: 27 publications, 20 as lead author, 329 citations, H-Index 9, I10 Index 8**

Vlok M, Oxenham M, Domett K, Trinh HH, Minh TT, Nguyen MH, Matsumura H, and Buckley H. **2024**. High prevalence of adult and non-adult scurvy in an early agricultural transition site from Mainland Southeast Asia was associated with decreased survivorship. *American Journal of Biological Anthropology*. 185(2): e25011.

Vlok M, McFadden C, Matsumura H, and Buckley HR. **2024**. Nutritional Disease, Ecological Stress, and Resilience in the Middle to Final Western Jomon. *Antiquity*. 98(399): 709-723.

Buckley, H, **Vlok M**, **2024**. 'A Long Want' An archival exploration of scurvy in the Otago goldfields of New Zealand. *Journal of the Royal Society of New Zealand*. 54(3): 368-389.

Vlok M. **2023**. Technical Note: The use and misuse of threshold criteria in paleopathology. *American Journal of Biological Anthropology*. 181(2): 326-335.

Snoddy AM, **Vlok M**, Ramesh N, Wheeler BJ, Standen VG, Arriaza BT. **2023**. Reply to Mays and Brickley 2023: "Dietary calcium versus vitamin D in rickets: A response to Vlok et al.". *American Journal of Human Biology*. 35(4): e23882. ***as co-lead author**.

Vlok M, Snoddy AM, Ramesh N, Wheeler BJ, Standen VG, Arriaza BT. **2023**. The role of dietary calcium in the etiology of childhood rickets in the past and the present. *American Journal of Human Biology*. 35(2): e23819.

Walker MM, Oxenham MF, **Vlok M**, Matsumura H, Mai Huong NT, Trinh HH, Minh TT, and Miszkiewicz JJ. **2023**. Human Femur Bone Morphology and Histology Variation with Ancestry and Behaviour in an Ancient Sample from Vietnam. *Annals of Anatomy*. 247: 152054

Wang, T Mcfadden C, Buckley H, **Vlok M**, and Oxenham, M. **2023**. Paleoepidemiology of cribra orbitalia: Insights from early seventh millennium BP Con Co Ngua, Vietnam. *American Journal of Biological Anthropology*. 181(2): 250-261.

Vlok M, Oxenham MF, Domett K, Hiep TH, Minh TT, Mai Huong NT, Matsumura H, McFadden C, Huu NT, and Buckley H. **2023**. Scurvy in the Tropics: Evidence for increasing micronutrient deficiency with the transition to agriculture in northern Vietnam. *American Journal of Biological Anthropology*. 180(4): 715-732.

Vlok M, Maloney, TR, Dilkes-Hall I, et al. **2023**. Reply to: Common orthopaedic trauma may explain 31000-year-old remains. *Nature*. 615: E15-E18.

Robbins Schug G, Buikstra JE, DeWitte SN, Baker BJ, **Vlok M**, et al. **2023**. Perspective: Climate Change, Human Health, and Challenges to Resilience in the Holocene. *PNAS* [invited for special issue].

Maloney, TR, Dilkes-Hall I, **Vlok M**, et al. 2022. Surgical amputation of a limb 31,000 years ago in Borneo. *Nature*. 609:547-551. **[As co-lead author.] *This paper has an Altmetric score of over 4000, the 2nd highest of any tracked archaeology paper of all time.**

Vlok M, Myagmar E, Batsuren B, and Buckley HR. **2022**. Pott's disease of the spine in a Liao Dynasty (10th-12th Century AD) adult from Mongolia. *Bioarchaeology International*. 6(3): 149-160.

Vlok M. **2022**. BOOK REVIEW: Bioarchaeology of care through a population level analysis. *Childhood in the Past*. 15(1): 79-80.

Vlok M, and Buckley HR. **2022**. Palaeoepidemiological considerations of mobility and population interaction in the spread of infectious diseases in the prehistoric past. *Bioarchaeology International* 6(1-2): 77-107. **[Invited for special issue]**.

Vlok M, Buckley HR, Domett K, Willis A, Tromp M, Trinh HH, Minh TT, Mai Huong NT, Nguyen LC, Matsumura H, Huu NT, and Oxenham MF. **2022**. Echinococcus granulosis in a forager community from pre-agricultural northern Vietnam. *American Journal of Biological Anthropology*. 117(1): 100-115.

Vlok M. **2022**. BOOK REVIEW: Handbook of East and Southeast Asian Archaeology. *The Journal of the Royal Anthropological Institute*. 28(2): 687-688.

Techataweewan N, Mann, RW, **Vlok M**, Ruengdit S, Panthongviriyakul C, and Buckley HR. **2021**. Thalassemia Major and Anemia in a 49-year-old Thai female: Gross and X-ray Examination of Dry Bone. *International Journal of Osteoarchaeology*. **[as co-lead author]**.

Vlok M, Buckley HR, Miszkiewicz JJ, Walker M, Domett K, Matsumura H, Hiep T, Minh T, Mai Huong NT, Huu NT, and Oxenham M. **2021**. Forager and farmer evolutionary adaptations to malaria evidenced by 7000 years of thalassemia in Southeast Asia. *Scientific Reports*. 11:5667.

AWARDS & HONOURS

2024

Guinness World Book of Records 2024

Discovery of Oldest Amputation in the World

Wiley Top Cited Article

Top cited article in the American Journal of Biological Anthropology (Q1) 2023-2024

Wiley Top Cited Article

Top cited article in the American Journal of Human Biology (Q1) 2023-2024

Wiley Top Downloaded Article

Top cited article in the American Journal of Human Biology (Q1) 2023-2024

2023

Wiley Top Cited Article

Top cited article in the International Journal of Osteoarchaeology (Q1) 2021-2022

2020

Health Sciences Division Exceptional Doctoral Thesis Award. University of Otago

Awarded for top 10% of all theses examined with exceptional quality of research, originality, quality of expression and accuracy of presentation. This award requires unanimous awarding of an outstanding grade by all three examiners and is decided by the Pro-Vice Chancellor of the Health Sciences Division.

Department of Anatomy Best Postgraduate Paper Prize. University of Otago

Awarded for the publication of a paper that has significantly contributed to the literature in the field of palaeopathology.

2017

Chancellor's Outstanding Academic Performance Award. Australian National University

Achieved for a GPA of 7 out of 7 in 2016.

2015

Chancellor's Outstanding Academic Performance Award. Australian National University

Achieved for a GPA above 6.75 out of 7 in 2014.

DISTINGUISHED INVITATIONS AND GUEST TALKS

2023

National Geographic Leaders Workshop Hong Kong, China

'Explorer Storytelling: Melandri Vlok'

World Science Festival Panel Brisbane, Australia

'From Stone Age Surgery to Modern Medicine'

2018

National Museum of Science and Nature Tokyo, Japan

'The Impact of Migration and Trade on Diseases in Ancient Asia'

PUBLICATIONS (CONT...)

Adams A, Halcrow S, King C, Miller MJ, **Vlok M**, Millard M, Gröcke D, Buckley H, Domett K, Trinh HH, Mai Huong NT, Tran TM and Oxenham M. **2021**. We're all in this together: Accessing the maternal-infant relationship in prehistoric Viet Nam. In: E Kendall and R Kendall (eds.). The Family in Past Perspective: An Interdisciplinary Exploration of Familial Relationships Through Time. Oxfordshire UK: Taylor & Francis.

Vlok M, Oxenham M, Domett K, Tran M, Mai Huong N, Matsumura H, Trinh H, Higham T, Higham C, Huu N and Buckley H. **2020**. Two Probable Cases of Infection with *Treponema pallidum* during the Neolithic Period in Northern Vietnam (2000-1500B.C.). *Bioarchaeology International*. 4(1):15-36.

Snoddy AME, Beaumont J, Buckley HR, Colombo A, Halcrow SE, Kinaston RL and **Vlok M**. **2020**. Comment on Charlier et al., 2019: "The Mandible of Saint-Louis (1270 AD): Retrospective Diagnosis and Circumstances of Death". *Journal of Stomatology, Oral and Maxillofacial Surgery*. 121(2): 192-194.

Snoddy AME, Beaumont J, Buckley HR, Colombo A, Halcrow SE, Kinaston RL and **Vlok M**. **2020**. Sensationalism and speaking to the public: Scientific rigour and interdisciplinary collaborations in paleopathology. *International Journal of Paleopathology*. 28:88-91.

Vlok M, Paz V, Crozier R, Oxenham M. **2017**. A New Application of the Bioarchaeology of Care Approach: A Case Study from the Metal Period, Philippines. *International Journal of Osteoarchaeology*. 27 (4): 662-671.

Vlok M. **2017**. So that their graves overlooked the sea: Student experience of the Philippines International Archaeological Field School. *The Human Voyage*. 1: 105-111.

SCIENCE COMMUNICATION

Podcast: The Meaning of Health Podcast (Episode No. 115) The Health System, Climate Change, and Palaeopathology. (2024)

Alongside my collaborator Assoc Prof Aditya Vyas (a public health physician) we were interviewed by Dr Craig Cumming on our ambitious idea of using archaeological data to address modern health issues related to the climate crisis.

Podcast: Explorer Albert (S01E4) Understanding an Ancient Amputation with Dr. Melandri Vlok (2024)

This podcast was a discussion with Albert Lin a National Geographic Explorer, host of Nat Geo Program 'Lost Cities with Albert Lin' and an amputee himself, about what life would have been like for the person with the oldest amputation in the world that I discovered.

Podcast: Nice Genes (S02E05) Germ Spotting! (2022)

An invited expert on a popular commercial science podcast. This season won the Best "Science and Technology Podcast" at the 15th Annual International Shorty Awards, as well as an Audience honour. The Shorty Awards are the 'Emmys' for content and social media.

Article: World's earliest evidence of a successful surgical amputation found in 31,000-year-old grave in Borneo. The Conversation. (2022)

Co-authored with Dr Tim Maloney, Dr India Dilkes-Hall et al. Article has over 18,000 reads.

Live Event: National Geographic 'The Spark' (2022 and 2023)

My work was highlighted in a 1.5-hour event among other selected Nat Geo Asia-Pacific Explorers

Podcast: SSEAC Stories (S01E49) Speaking Bones: Unearthing Ancient Stories of Illness and Disease (2022)

I was interviewed about my research on yaws and malaria in Southeast Asia.

DISCIPLINARY SERVICE

Associate Editor

Frontiers in Nutrition (Q1)
2023-Present

Guest Editor in Chief (Special Issue)

International Journal of Osteoarchaeology (Q1)
2024-Present

Forensic Anthropology Consultant (Volunteer)

NSW National Parks and Wildlife
2022-Present

Session Chair and Organiser

2021 American Association of Biological Anthropologists
(online during COVID-19)

2022 Indo-Pacific Prehistory Association Conference,
Chiang Mai, Thailand

Conference Organiser

2023 Australasian Society of Human Biology Conference,
Sydney, Australia

Executive Board Member

Australasian Society of Human Biology (2017-2020)
Media Liaison

Reviewer

- Lancet Regional Health (Europe) (Q1)
- Nature Communications (Q1)
- Frontiers in Environmental Archaeology (Q1)
- SPAFA Journal of the SEAMEO Regional Centre for Archaeology and Fine Arts (Q2)
- American Journal of Biological Anthropology (Q1)
- Journal of Archaeological Sciences (Q1)
- International Journal of Paleopathology (Q1)
- International Journal of Osteoarchaeology (Q1)

UNIVERSITY SERVICE

2024-2025

University of Notre Dame Scholarship Committee

The committee makes decisions on the numerous equity scholarships provided by the university.

Academic Mentor

I advise the executive of the University of Notre Dame Australia Sydney Student Health Sciences Society

2023

Media Workshop

Hosted a social media and press workshop for members of the Sydney Southeast Asia Centre

Academic Publication Workshop

I hosted a workshop for Honours students at the University of Sydney on how to prepare their research for a journal article

2022 and 2023

SSEAC Writers Retreat

I helped run multiple writer's retreats for the EMCR academics and student members of the Sydney Southeast Asia Centre.

SCIENCE COMMUNICATION (CONT...)

Podcast: The Arch and Anth Podcast (S01E04) Interview With Melandri Vlok (2019)

I was interviewed by Dr Michael Rivera about my research and life as a palaeopathologist.

Documentary: The Portable Artefacts of a Seafaring People (2018)

This is a documentary on the artefacts found in the Metal Period of the Philippines and documents the excavation and thought processes of archaeologists at the excavation of a site. I was one of the archaeologists interviewed for the documentary. Produced by: Robert Rownd

Documentary: Professor Nguyen Lan Cuong. Hanoi TV. (2018)

A documentary about the life's work of Professor Lan Cuong, Vietnam's father of palaeoanthropology. I was interviewed about my collaborative work with him.

SELECTED CONFERENCE PAPERS

TOTAL: 25 papers as lead author

AUGUST 2024: Australian Public Health Conference. Perth, Australia

'Public Health, Climate Change, and Evolutionary Medicine: New lenses for a complex world'.

JULY 2023: Porous Skeletal Lesions: International Meeting. Coimbra, Portugal

'Two decades of searching for malaria in Asia-Pacific: What we've learnt (or rather unlearned) when it comes to porosity'.

OCTOBER 2022: 23rd Indo-Pacific Prehistory Association Congress. Chiang Mai, Thailand

'Yaws and malaria: Current synthesis and future directions on the origins and antiquity in Southeast Asia and the Pacific'

OCTOBER 2021: Society for the Study of Childhood in the Past, Online

'The Children of Yoshiwara: Childhood and disenfranchisement during the Edo Period of Japan'.

APRIL 2021: Society of American Archaeology Conference, Online

'Nutritional and Infectious Diseases in the Bronze and Iron Ages of Mongolia: The Archaeological Significance'.

APRIL 2021: Meeting of the Paleopathology Association, Online

'Bone mineralisation disorders in Bronze and Iron Age skeletal assemblages from Mongolia'. [Poster]

APRIL 2021: Meeting of the American Association of Physical Anthropologists, Online

'The impact of scurvy mortality during the transition of agriculture in northern Vietnam'.

APRIL 2020: Meeting of the American Association of Physical Anthropologists, Los Angeles, USA

'Modelling the Disease Impacts of Migration and Trade in Prehistoric East and Southeast Asia'. [Poster]

DECEMBER 2019: Australasian Society for Human Biology. Canberra, Australia

'Climatic cooling, population displacement and nutritional stress in the prehistoric Jomon hunter-gatherers of Japan'.

MARCH 2019: American Association of Physical Anthropologists, Cleveland, Ohio, USA

'The Antiquity of Treponemal Disease in the Asia Pacific Region: Implications for History'

ACADEMIC ASSOCIATIONS

Healthy Environments and Lives (HEAL) National Network

Sustainability, Climate, and Health Collaboration

Sydney Southeast Asia Centre

Ngākahu Repatriation Research Network, Aotearoa New Zealand

American Association for Biological Anthropologists

Indo-Pacific Prehistory Association

Australasian Society of Human Biology

REFERENCES

RESEARCH SUPERVISION

Nicola Czaplinski (PhD)

Thesis Title: *Lipidomics of Leprosy and Tuberculosis in Asia: A Biomolecular Approach to the Identification of Mycobacteria in the Archaeological Record*
University of Notre Dame Australia
2025-Present

Pratiwi Yuwono (PhD)

Thesis Title: *Mortuary practices, health, and diet of insular Wallacean populations since the Austronesian expansion: The case of North Kolana cemetery site on Alor Island, East Nusa Tenggara, Indonesia*
Southern Cross University, Australia
2023- Present

Tran Thi Minh (PhD)

Thesis Title: *Human skeletal variation of Vietnamese populations through time from foraging to farming: An evolutionary perspective on health and disease*
The University of the Philippines, Diliman
2023- Present

2022

Nicola Czaplinski (Honours)

Thesis Title: *It's Not the Cough that Carries You Off: Health and Disease from Neolithic to Iron Age Britain*
The University of Sydney, NSW, Australia
Outcome: FIRST CLASS

TERTIARY TEACHING TRAINING

2024

Fundamentals of HDR Supervision
The University of Notre Dame Australia

2021

Foundations of Research Supervision
The University of Sydney

2020

Higher Education Development Centre Tutoring and Demonstrating Training
University of Otago

OTHER TEACHING EXPERIENCE

2023

**Techniques in Advanced Bioarchaeology Workshop
Bangkok, Thailand**

I funded, organised, and ran a workshop for 18 professional bioarchaeologists from throughout Southeast Asia to teach advanced techniques and data collection. These professionals are now preparing for submission of first authored journal articles in a Special Issue of the International Journal of Osteoarchaeology (Q1) as part of the workshop.

2022

Health and Sustainability through an Evolutionary Perspective (Guest Workshop)

Presenting anthropological and evolutionary approaches to students in the Masters of Sustainability and Public Health at the University of Sydney for the postgraduate course SUST5004: Sustainability and Population Health.

2021

Diagnosing diseases in the context of Southeast Asia (Guest Lecture)

A seminar for Australian, New Zealand, Thai and Vietnamese bioarchaeologists on recording lesions and diagnosing nutritional and infectious diseases in a tropical context for the Thai Bioarchaeology Forum hosted by Silpakorn University, Bangkok.

