

ASTA J RAND, PhD

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Research Profile

Dr Asta Rand is an osteoarchaeologist who specialises in the isotopic analysis of archaeological human and faunal remains with research interests in subsistence practices and migration processes in past societies. Her research to date has integrated multiple bioarchaeological techniques to interpret subsistence and mobility among the prehispanic Maya of Central America, including pioneering applications of sulfur isotope analysis in this region. She is currently a Per Course Instructor in the Department of Archaeology at Memorial University, Canada, owner of the English editing company Rand NOTES, and has previous archaeological experience in Canada and Poland. Dr Rand's interdisciplinary and collaborative research has been supported by prestigious national competitions, including two Joseph-Armand Bombardier Canadian Graduate Scholarships, and several national and international grants, such as the UK's Ruggles-Gates Fund for Biological Anthropology.

Research Interests

Bioarchaeology; Biological anthropology; Human osteology; isotope analysis; Archaeological science; Palaeopathology & trauma; Diet & subsistence strategies; Human migration & mobility; Health; Mesoamerican archaeology

Professional Experience

17/11/2022 – Present Owner/Editor, Rand NOTES, Canada
04/01/2018 – Present Per Course Instructor, Department of Archaeology, Memorial University, Canada
23/06/2021 – 15/11/2022 Archaeological Field Director, Horizon Archaeology, Canada
11/11/2020 – 22/06/2021 Archaeological Field Technician, Horizon Archaeology, Canada
15/09/2015 – 18/05/2019 Graduate Tutor, Writing Centre, Memorial University, Canada
10/09/2013 – 26/05/2018 Teaching Assistant, Department of Archaeology, Memorial University, Canada
25/06/2015 – 01/08/2017 Osteology Instructor & Laboratory Director, Slavia Field School in Mortuary Archaeology, Poland
18/04/2013 – 23/08/2013 Archaeological Field Director, Archaeological Services Inc., Canada
25/01/2015 – 04/04/2012 Archaeological Laboratory Assistant, Archaeological Services Inc., Canada
09/01/2012 – 04/04/2012 Archaeological Field Technician, Archaeological Services Inc., Canada
08/09/2009 – 26/04/2011 Teaching Assistant, Department of Anthropology, Trent University, Canada

Education

22/10/2021 Doctor of Philosophy, Archaeology, Memorial University, Canada
17/01/2012 Master of Arts, Anthropology, Trent University, Canada
13/05/2008 Bachelor of Science in the Honours Program, Anthropology, Emphasis in Archaeology, Trent University, Canada

Publications

Peer-Reviewed Journal Articles

- 2021 Ebert C, **Rand A**, Green-Mink K, Hoggarth J, Freiwald C, Awe J, Trask W, Yaeger J, Brown MK, Helmke C, Guerra R, Danforth M, Kennett D. Sulfur isotopes as a proxy for human diet and mobility from the preclassic through colonial periods in the Eastern Maya lowlands. *PLoS ONE* 16(8):e0254992. doi:10.1371/journal.pone.0254992
- 2021 **Rand AJ**, Freiwald C, Grimes V. A multi-isotopic ($\delta^{13}\text{C}$, $\delta^{15}\text{N}$, and $\delta^{34}\text{S}$) faunal baseline for Maya subsistence and migration studies. *Journal of Archaeological Science Reports* 37:102977. doi: 10.1016/j.jasrep.2021.102977
- 2020 **Rand AJ**, Matute V, Grimes V, Freiwald C, Żrałka J, Koszkul W. Prehispanic Maya diet and migration at Nakum, Guatemala: A multi-isotopic approach. *Journal of Archaeological Science: Reports* 32:102374. doi: 10.1016/j.jasrep.2020.102374
- 2020 Freiwald C, Miller Wolf KA, Pugh T, **Rand A**, Fullagar P. Early colonialism and population movement at the Mission of San Bernabé, Guatemala. *Ancient Mesoamerica* 31(3):543–553. doi: 10.1017/S0956536120000218
- 2015 **Rand A**, Bower M, Munkittrick J, Harris A, Burchell M, Grimes V. Comparison of three bone collagen extraction procedures: The effect of preservation on $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ values. *North Atlantic Archaeology* 4:93–113.
- 2015 **Rand AJ**, Healy PF, Awe JJ. Stable Isotopic Evidence of Ancient Maya Diet at Caledonia, Cayo District, Belize. *The International Journal of Osteoarchaeology* 25:401–413. doi: 10.1002/oa.2308

Chapters in Edited Volumes

- 2022 Freiwald C, Belanich J, **Rand A**. Methods in Bioarchaeology: What's new in profiling an individual inside and out. In Tiesler V (ed), *The Routledge Handbook of Mesoamerican Bioarchaeology* (pp. 577–600). London: Routledge. doi: 10.4324/9780429341618-38
- 2017 **Rand AJ**. Ancient Maya mobility at Caledonia, Cayo District, Belize: Evidence from stable oxygen isotopes. In Patton M & Manion J (eds), *Trading Spaces: The Archaeology of Interaction, Migration and Exchange*. Proceedings of the 46th Annual Chacmool Conference (pp. 32–43). Calgary, AB: Chacmool Archaeology Association, the University of Calgary.

Encyclopaedia Entries

- 2018 **Rand AJ**, Nehlich O. Diet and sulfur isotopes. In: López-Varela S, editor. *The Encyclopedia of Archaeological Sciences*. Wiley-Blackwell. doi: 10.1002/9781119188230.saseas0186.

Conference Abstracts

- 2017 **Rand A**, Grimes V. The environmental sulfur isotope composition of the Maya Region: A working model and preliminary results. *American Journal of Biological Anthropology* 162(S64):327. doi: 10.1002/ajpa.23210

Manuscripts Accepted or in Review

- Accepted **Rand A**. Multi-isotopic evidence for prehispanic Maya use of multiple subsistence catchments at Caledonia, Cayo District, Belize. Manuscript submitted

- for publication in Beasley M & Somerville A (eds), *Exploring Human Behavior through Isotope Analysis*. New York: Springer.
- In Review Freiwald C, **Rand A**, Skaggs S, Powis T. Understanding ‘local’: Mobility and diet at Pacbitun using strontium, carbon, oxygen, and sulfur isotope values. Manuscript submitted for publication in the *International Journal of Osteoarchaeology*.
- In Review **Rand AJ**, Freiwald C. Reconstructing the isotopic life histories of the Nakum Maya. Manuscript submitted for publication in Żrałka J (ed), *The Nakum Archaeological Project Monograph Series*. Cracow: Jagiellonian University Press.

Dissertations and Theses

- 2021 **Rand AJ**. *Prehispanic and Colonial Maya Subsistence and Migration: Contributions from Stable Sulfur Isotope Analysis*. Unpublished PhD Dissertation, Department of Archaeology, Memorial University, St. John’s, NL, Canada. Defence Date: 03/03/2021.
- 2012 **Rand AJ**. *Ancient Maya Diet at Caledonia, Cayo District, Belize: The Isotopic Evidence*. Unpublished MA Thesis, Department of Anthropology, Trent University, Peterborough, ON, Canada. Defence Date: 13/10/2012.

Presentations

Conference Papers

- 25/03/2021 **Rand AJ**, Freiwald C, Yaeger J, Brown MK, Grimes V. *Interpreting Maya migration from birth to death: A multi-isotopic case study from Xunantunich and San Lorenzo, Belize*. Presented synchronically at the Bioarchaeology Early Career Conference, Online.
- 05/11/2020 **Rand A**, Freiwald C, Grimes V. *Ancient Maya catchment use: Stable sulphur isotopic evidence from Caledonia, Cayo District, Belize*. Presented synchronically at the 48th Annual Meeting of the Canadian Association for Biological Anthropology, Online.
- 28/06/2018 Freiwald C, Green K, **Rand A**, Trask W, Novotny A. *Maya mobility: Isotopes, molecules and migration in Belize*. Presented at the 16th Annual Belize Archaeology Symposium, San Ignacio, Belize.
- 30/04/2015 Bower M, **Rand A**. *Contemplating the relationship between mobility theory and bioarchaeology: Past and present behaviours*. Presented at the 47th Annual Meeting of the Canadian Archaeological Association, Memorial University of Newfoundland, St. John’s, NL.
- 08/11/2013 **Rand A**. *Characterizing human mobility at Caledonia, Cayo District, Belize: Evidence from stable oxygen isotope analysis*. Presented at the 46th Annual Chacmool Archaeology Conference, University of Calgary, Calgary, AB.
- 29/10/2011 **Rand A**. *Isotopic investigations of diet at Caledonia, Cayo District, Belize*. Presented at the 39th annual meeting of the Canadian Association for Biological Anthropology, Montreal, QC.

Presented Posters

- 20/04/2017 **Rand A**, Grimes V. *The environmental sulfur isotope composition of the Maya region: A working model and preliminary results*. Presented at the 86th annual

meeting of the American Association of Biological Anthropologists, New Orleans, LA, April 20.

- 07/11/2014 **Rand A**, Munkittrick J, Harris A, Bower M, Burchell M, Grimes V. *Comparing three collagen extraction procedures for stable carbon and nitrogen isotope analysis of archaeological and modern bone*. Presented at the 42nd annual meeting of the Canadian Association for Biological Anthropology, Fredericton, NB.

Invited Presentations

- 13/01/2023 **Rand AJ**. Isotopes and archaeology: Changing perspectives of ancient Maya diet and migration. Invited by Dr hab. Jarosław Żrałka to present the *Institute of Archaeology*, Jagiellonian University in Kraków, Poland.
- 28/02/2022 **Rand AJ**. Multi-isotopic insights into Maya subsistence practices and migration. Presented synchronically to the *Center for Stable Isotopes Brown Bag Lecture Series*, University of New Mexico, USA, Online.
- 31/03/2021 **Rand A**. *Isotope Analysis of Past Foodways*. Presented to ANT-277: Ancient Food and Foodways, Instructor: Dr Maxime Lamoureux-St-Hilaire, Department of Anthropology, Davison College, USA, Online.

Public Lectures & Seminars

- 10/11/2021 **Rand AJ**. *Isotopic Insights into Archaeological Diet and Migration*. Presented synchronically to the Ontario Archaeological Society: London Chapter, Online.
- 10/04/2012 **Rand AJ**, *Archaeology in Ontario* Presented to Grade 1 Class at Huntsville Public School, Huntsville, ON, Canada.

Departmental Presentations

- 29/01/2019 **Rand A**. *Learning One's Culture*. Presented to ANTH 1031: Introduction to Anthropology, Instructor: John Campbell, Department of Anthropology, Memorial University, St. John's, NL, Canada.
- 25/10/2017 **Rand A**. *Isotope Analysis in Forensic Anthropology*. Presented to ARCH 2492: Forensic Anthropology, Instructor: Vaughan Grimes, Department of Archaeology, Memorial University, St. John's, NL, Canada.
- 30/03/2017 **Rand A**. *The Skeletons from Drawsko, Poland*. Presented to ARCH 3040: The Human Skeleton, Instructor: Megan Bower, Department of Archaeology, Memorial University, St. John's, NL, Canada.
- 23/11/2016 **Rand A**. *Bioarchaeology: From Human Skeletons to Cultural Processes*. Presented to ARCH 1030: Introduction to Archaeology and Bioarchaeology, Instructor: Megan Bower, Department of Archaeology, Memorial University, St. John's, NL, Canada.
- 06/10/2014 **Rand A**. *Archaeological Field Techniques and Concerns*. Presented to ARCH 2492: Forensic Archaeology, Instructor: Megan Bower, Department of Archaeology, Memorial University, St. John's, NL, Canada.

Funding and Awards

Scholarships, Fellowships, and Bursaries

- 2018 **Scholarship in the Arts Doctoral Completion Award**, Faculty of Humanities and Social Sciences, Memorial University (\$10,000 CAD)
- 2014 – 2017 **Joseph-Armand Bombardier Canadian Graduate Scholarship – Doctoral Award (#767-2014-2712)**, Social Sciences and Humanities Research Council,

- Ancient Maya Residential mobility on the Vaca Plateau: Evidence from Multiple Isotopes* (\$105,000 CAD).
- 2010 – 2011 **Joseph-Armand Bombardier Canadian Graduate Scholarship – Masters Award** (#766-2010-0718), Social Sciences and Humanities Research Council, *Diet, Status and Health: Stable Isotope Analysis of Human Skeletal Remains from the Caledonia Site, Cayo District, Belize* (\$17,500 CAD)
- 2014 – 2015 **F. A. Aldrich Fellowship**, School of Graduate Studies, Memorial University (\$3,000 CAD)
- 2014 **Professor Peter Hart Memorial Scholarship**, School of Graduate Studies, Memorial University (\$1,450 CAD)
- 2013 – 2014 **F. A. Aldrich Fellowship**, School of Graduate Studies, Memorial University (\$20,000 CAD)
- 2009 **Graduate Research Fellowship**, Trent University (\$2,000 CAD)

Research Grants

- 2016 **Ruggles-Gates Fund for Biological Anthropology**, Royal Anthropological Institute, *Diet, Health, and Movement in Early Modern Poland: Evidence from the Drawsko I Cemetery (17th-18th C.)* Royal Archaeological Institute (£500 [\$825 CAD])
- 2016 **Scotiabank Bursary for International Study**, Memorial University (\$2,000 CAD)
- 2015 **Shelley R. Saunder's Thesis Research Grant**, Canadian Association for Biological Anthropology (\$800 CAD)

Honours, Prizes, and Awards

- 2022 **Seal of Excellence**, European Commission Horizon Europe
- 2021 **Fellow of the School of Graduate Studies**, School of Graduate Studies, Memorial University
- 2020 **The Ochinsky-McKern Award**, Canadian Association for Biological Anthropology (\$500 CAD)
- 2017 **Pollitzer Student Travel Award**, American Association of Biological Anthropologists (\$500 US)
- 2017 **Recognition of Excellence**, School of Graduate Studies, Memorial University
- 2015 **Recognition of Excellence**, School of Graduate Studies, Memorial University
- 2014 **Recognition of Excellence**, School of Graduate Studies, Memorial University
- 2010 **Petersen Burfield Family Graduate Award**, Trent University (\$750 CAD)
- 2008 **Dean's Honour Roll**, Trent University
- 2008 **Bagnani Undergraduate Award**, Trent University (\$900 CAD)

Research Collaborations

- 2022 **Multi-isotopic Evidence of Maya Diet and Migration at Pacbitun**, Belize. PI: Carolyn Friewald; Collaborators: Asta Rand, Terry Powis and Sheldon Skaggs
- 2021 **Colonial Impacts on Maya Migration Patterns at Mission San Bernabé, Guatemala**. PI: Carolyn Friewald; Collaborators: Asta Rand, Katherine Miller Wolf, Timothy Pugh, and Paul Fullagar
- 2020 – 2021 **Sulfur Isotopic Evidence of Maya Diet and Migration in the Eastern Lowlands**, PI: Claire Ebert; Collaborators: Asta Rand, Kirsten Green-Mink, Julie Hoggarth, Carolyn Friewald, Jaime Awe, Willa Trask, Jason Yaeger, Kathryn Brown, Christophe Helmke, Rafael Guerra, Marie Danforth, and Douglas Kennett

- 2017 – 2021 **Nakum Archaeological Project/Proyecto Arqueológico Nakum**, PI: Jarosław Żrałka; Collaborators: Asta Rand, Varinia Matute, Vaughan Grimes, Carolyn Freiwald, and Wiesław Koszkul
- 2015 – 2021 **Establishing Sulfur Isotope Analysis in Maya Archaeology**, PI: Asta Rand; Collaborators: Carolyn Freiwald, Vaughan Grimes, Paul Healy, Marilyn Masson, Jason Yaeger, Kathryn Brown, Jeffrey Glover, Allan Ortega Muñoz, Vera Tiesler, Timothy Pugh, and Jarosław Żrałka
- 2014 – 2015 **MAAS Laboratory Group Comparison of Three Collagen Extraction Procedures**, PI: Asta Rand; Collaborators: Vaughan Grimes, Megan Bower, Jessica Munkittrick, Alison Harris, and Meghan Burchell

Professional Qualifications & Training

- 2021 – Present **Applied Research Licence (R1304)**, Ontario Ministry of Culture, Tourism, Sport and Heritage Industries
- 2002 – 2018 **WHMIS (Workplace Hazardous Materials Information System) Training**
- 2013 – 2018 **Safety 1000 Training**, Memorial University
- 2013 – 2015 **Standard First Aid with CPR Level A and AED**, St. John Ambulance
- 2012 – 2014 **Applied Research Licence (R447)**, Ontario Ministry of Tourism, Culture, & Sport
- 2009 **Teaching Assistant & Sexual Harassment Training**, Trent University

Analytical and Information Technology Proficiencies

Human Osteology	Highly proficient:	Element identification Minimum number of individuals (MNI) Age estimation Sex estimation
	Proficient:	Palaeopathology & trauma identification Population affiliation
Isotope Analysis	Highly proficient:	Bulk sample preparation (bone collagen, bone & enamel apatite, hair) for carbon, nitrogen, sulfur, & oxygen isotope analysis Interpretation of isotopic results (carbon, nitrogen, sulfur, & oxygen)
	Preliminary training:	Stable isotope analytical techniques Sample preparation for strontium isotope analysis Sample preparation for compound specific isotope analysis
Zooarchaeology	Preliminary training:	Species identification Age estimation
Software	Highly proficient:	Microsoft Office (Word, Excel, & PowerPoint) Adobe Acrobat Pro IBM SPSS
	Proficient:	Endnote

Professional Service

- 2022 – Present **Review Editor**, *Frontiers in Environmental Archaeology*

- 2013 – Present **Reviewer**, *Advances in Archaeological Practice*, *Ancient Mesoamerica*, *The Federation of American Societies for Experimental Biology (FASEB) Journal*, *Journal of Archaeological Science*, *Journal of Archaeological Science: Reports*, and *PLOS ONE*.
- 2014 – 2018 **Website Editor**, Canadian Association for Biological Anthropology
- 2015 **Ethics Subcommittee Member**, Canadian Association for Biological Anthropology
- 2013 **Journal Referee**, *vis-à-vis: Explorations in Anthropology*, University of Toronto

Mentoring Activities

- 21/03/2018 – 18/05/2018 **Undergraduate Mentor and Trainor**, Memorial Applied Archaeological Sciences (MAAS) Laboratory, Department of Archaeology, Memorial University, St. John's, Canada.
- 29/02/2016 – 03/10/2016 **Undergraduate Mentor and Trainor**, Memorial Applied Archaeological Sciences (MAAS) Laboratory, Department of Archaeology, Memorial University, St. John's, Canada.

Volunteer Activities

- 09/02/2020 – 27/02/2020 **Abstract Reviewer**, Aldrich Conference, Memorial University, St. John's, Canada
- 23/03/2019 **Session Judge**, Aldrich Conference, Memorial University, St. John's, Canada
- 25/02/2019 – 03/03/2019 **Abstract Reviewer**, Aldrich Conference, Memorial University, St. John's, Canada
- 25/04/2018 – 26/04/2018 **Team Facilitator**, Let's Talk Science Canada 2067, St. John's, Canada
- 01/05/2015 Conference Volunteer, 47th Annual Meeting of the Canadian Archaeological Association, Memorial University, St. John's, Canada
- 12/03/2014 – 24/07/2014 **Co-Author**, Laboratory Safety Manual for Queen's College Laboratories, Memorial University, St. John's, Canada
- 17/08/2010 **Instructor**, Trent University Forensic Science Camp, Peterborough, Canada

Membership in Professional Organisations

American Association of Biological Anthropologists (AABA)
 Association for Environmental Archaeology (AEA)
 Canadian Association for Biological Anthropology (CABA)
 Society for Archaeological Sciences (SAS)
 The Canadian Latin American Archaeology Society (CLAAS)

Language Proficiency

English	First language
Spanish	Intermediate reading, beginner written and spoken
Polish	Beginner reading, written, and spoken