

Dr. Guaciara M. dos Santos (Winston)

Research Project Scientist
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EDUCATION

- 1999 to 2001 **Postdoctoral in Apply Nuclear physics**, Australia National University, Australia
Advisors: Keith Fifield and Michael I. Bird
- 1999 **Ph.D in Apply Nuclear Physics**, Federal Fluminense University, Brazil
Advisor: Paulo Roberto Silveira Gomes
- 1995 **M.Sc. in Laser & Spectroscopy**, Federal Fluminense University, Brazil
Advisor: Carlos Eduardo Fellows
- 1995 **Teaching Certification in General Physics**, Federal Fluminense University, Brazil
- 1992 **B.Sc. in General physics**, Federal Fluminense University,

PROFESSIONAL APPOINTMENTS

- 2016-present Research Project Scientist IV, KCCAMS/UCI Facility
- 2014-2016 Research Project Scientist IV, KCCAMS/UCI Facility
- 2011-2014 Research Project Scientist III, KCCAMS/UCI Facility
- 2008-2011 Research Project Scientist II, KCCAMS/UCI Facility
- 2006-2008 Specialist I, KCCAMS/UCI Facility
- 2004-2006 Associate Specialist III, KCCAMS/UCI Facility
- 2002-2004 Associate Specialist I, KCCAMS/UCI Facility
- 2002-present Manager of the sample preparation laboratory, KCCAMS/UCI Facility
- 1999-2001 Post-doctoral Fellow on Accelerator Mass Spectrometry technique at the Nuclear Physics Department, Australia National University

FELLOWSHIPS, HONORS AND GRANTS

- 2013-2015 **Awarded LABEX OT-Med 2013** (EU\$20,000.00), as Senior Advisor - Title: "Revealing the source of carbon occluded in phytoliths (phytC): potential implication concerning the role of plant Si cycling on carbon cycling" submitted by Dr. A. Alexandre (PI) (<http://www.cerege.fr/spip.php?article295>)
- 2012-2016 **Awarded NSF #EAR-1144888 2011** (US\$ 431,439), as Principal Investigator - Project title: "Is carbon biosequestration by plants feasible? Revealing the source of carbon embedded in phytoliths by using isotope analyses ($\delta^{13}\text{C}$ and ^{14}C measurements) and nanoparticles" with Prof. Katherine Tresseder (Co-PI).
- 2001 **ANU Bridging Post-doctoral Fellow, Canberra, Australia** - *1 semester* - granted by the Institute of Advanced Studies, Research School of Physical Sciences and Engineering, ANU, Australia - to continue working at the Physics Department under Dr. Keith Field supervision.
- 1999-2001 **Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), Brazil Postdoctoral Research Fellowship** - International grant to outstanding young scientists to pursue research overseas.

SPECIAL INVITATIONS

- 2016 **Speaker (keynote) to the 10th International Meeting on Phytolith Research**, the CEREGE - Centre Européen de Recherche et d'Enseignement en Géosciences de l'Environnement - Aix en Provence, France - September 12 to 14, 2016.
- 2015 **Speaker (lecture) at the Department of Geography/Pos-Graduation Program of Geography**, at the Geosciences Institute, Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, Brazil.

- 2014 **Speaker (workshop series – 2 lectures) of the XVIII EVJAS-FNE (XVIII Escola de Verão Jorge André Swieca de Física Nuclear Experimental)**, Institute of Physics of the Fluminense Federal University, Niteroi, State of Rio de Janeiro, Brazil - January 27 to February 07, 2014
- 2013 **Speaker (plenary session) of the RTFNB2013 (Reunião de Trabalho sobre Física Nuclear no Brasil)**, September 20013, Sao Sebastiao, Brazil – declined due to conflict of schedule.
- 2012 **Speaker (lecture) at the Department of CEREGE, Aix en Provence, France**, on July 06, 2012, titled "Direct 14C-AMS dating of biosilica of higher plants: tracking the origin of phytolith C of extracted phytoliths from contemporary living grasses".
- 2011 **Speaker (keynote) of the International Workshop on Small Scale Radiocarbon Analysis**, September 2011 at the Laboratory of Ion Beam Physics, ETH Zürich, Switzerland. The good and the bad of small-scale 14C-AMS sample preparation and analysis by GM Santos
- 2011 **Speaker (plenary session) of the IX Latin American Symposium on Nuclear Physics and Applications**, Quito, Ecuador, July 18-22, 2011. Titled "Beyond archaeology: 14C-AMS and the global carbon cycle".
- 2011 **Speaker of the 6th International Symposium "Radiocarbon and Archaeology"**, Paphos, Cyprus, April 10-15, 2011. Solving the 14C Phytolith Puzzle: Can carbon in phytoliths from living grasses be thousands of years old? By GM. Santos, R Corbineau, MD. Whiteside, KK. Treseder, JR. Southon, A Alexandre and PE. Reyerson.
- 2010 **Member of the discussion panel of the NOSAMS Compound Specific Radiocarbon Analyses (CSRA) Workshop**, Woods Hole Oceanographic Institution, Sample Preparation, Ion Sources, Modern Accelerators - The Current State of the Art, June 29 and 30, 2010
- 2009 **Speaker for the discussion panel of the Graphitization Workshop organized by J. Turnbull & C. Prior, 20th International Radiocarbon Conference**, Hawaii, May 03 to June 05, 2009.
- 2006 **Invited speaker (lecture session) of the International Symposium of the Peopling of the Americas**, December 16 to 22, 2006 at the Capivara National Park, Piaui, Brazil. 14C-AMS as a tool for archaeological investigation: Implications for Human Settlement in South America by G.M. Santos

PROFESSIONAL SERVICES

- 2017 **Member of the Scientific Advisory Panel (SAP) and chairperson of the 14th Accelerator Mass Spectrometry Conference**, Ottawa, Canada, August 14-18, 2017 - Upcoming event.
- 2017 **Member of the Scientific Committee of the 2nd International Radiocarbon in the Environment Conference (REII-2017)** to take place between 3-7 July, 2017, in the Hungarian Academy of. Sciences, Debrecen, Hungary - Upcoming event.
- 2016 **Convener of the Accelerator-Based Analysis sections (Developments and Applications of AMS I and II) and chairperson of the CAARI 2016 conference**, Oct. 30 - Nov. 4 in Ft. Worth, Texas.
- 2015 **Convener of the Chemical pretreatment approaches session (Session 01 CHEM) and chairperson of the 22nd International Radiocarbon Conference**, Dakar, November 16 to 20, 2015.
- 2011 **Member of the Scientific Advisory Panel (SAP) and chairperson of the 12th Accelerator Mass Spectrometry Conference**, Wellington, New Zealand, March 20 to 25, 2011.
- 2011 **Convener of the Special Archaeological materials and techniques for dating session (Session 8) and chairperson of the 6th International Symposium "Radiocarbon and Archaeology"**, Paphos, Cyprus, April 10 to 15, 2011.
- 2006-present **Reviewer for Radiocarbon Journal, Quaternary Geochronology, Nuclear Instruments And Methods, Rapid Communications In Mass Spectrometry, Science of the Total Environment (STOTEN) and NSF (proposals).**

- 2004-2011 **Designer of** procedural protocols for in-house and outside users (listed at KCCAMS facility webpage)
- 2004-present **Associate in Instruction for the UCI Summer Course** - "The use of Radiocarbon in Ecology and Earth System Science". Assisted in instruction for 14C - AMS sample preparation procedures of carbonaceous raw materials and, AMS system operation and analyses of data.
- 2004-present **Guide tour** at the KCCAMS/UCI to the following programs: Santa Ana High School Students, Society for Advancement of Chicanos and Native Americans in Science (SACNAS), FOCUS Summer Teacher Training Institute, American Indian Summer Institute and the California State Summer School for Mathematics and Science (COSMOS) and Pacific High School (2004-present)
- 2003-present **Community consultant for** 14C-AMS sample preparation procedures, laboratory setup and instrumentation.

PROFESSIONAL AFFILIATIONS

American Chemical Society (ACS)
 Phytolith society
 Tree ring society
 American Geophysical Union (AGU)
 Physical Society of Brazil (Sociedade Brasileira de Física)

POSTDOCTORAL SPONSOR, GRAD/ UNDERGRAD STUDENTS, AND TRAINEES

* = *indicates direct mentoring*

- Co-advisor of Fabiana Oliveira, PhD candidate, UFF, Brazil (sandwich program 2014 - present). Projects: "Advances in the graphitization protocol at the LAC-UFF/Brazil" (completed) and "Distribution maps of $\Delta^{14}\text{C}$ from across Rio de Janeiro state and city during 2014 and 2015"
- Adviser of Cassie Grainger* (March 2014 – January 2015), Undergraduate student – ESS199 class. Project: Validating cross-dated *Araucaria araucana* trees in the northwestern Patagonian foothills in the province of Neuquén, Argentina
- Adviser of Dr. Kimberley Gallagher*, Postdoctoral Scholar (2014 - 2015), NSF grant
- Adviser of Dr. Paul Reyerson*, Specialist (2012 – 2014), NSF grant
- Adviser of Araks Harutyunyan* (October 2012- June 2014), Undergraduate student – ESS Honor's program. Project: Below ground sources of phytoliths of higher plants. (Honor's Thesis Defense - June 09, 2014)
- Adviser of Hector Martinez de La Torres* (May 2011 – June 2014), Assistant Specialist. Projects: 1) Year-of-death determinations and dietary analyses using Isotope measurements; and 2) Testing the removal of exogenously bound carbon from modern human hair by cross-flow nanofiltrated amino acids procedure. Presently Mr. Martinez is completing his Masters in Stable Isotope Geochemistry at University of Alberta, Canada.
- Co-advisor of Dr. Simon Fahrni, Postdoctoral (2011 - 2013), KCCAMS
- Co-advisor of Shari Bush* (May 2011 – 2013), Assistant Specialist. Project: 14C-AMS carbonate samples screening method. In 2014 Mrs. Bush joined the Peace Corps in Zambia.
- Co-advisor of Dr. Ben Fuller, Researcher (September 2012 – February 2013), NSF grant
- Co-advisor of Dr. Julie Ferguson, Postdoctoral (2011-2012), KCCAMS
- Adviser of Kaelyn M. Ormsby* (January 2010 – June 2011), Assistant Specialist Project: Testing Behavioral variability in ABA chemical pretreatment, and 14C and Stable Isotope Dietary Inferences in Modern Humans. In December 2013 she received a Master's in Environmental Science and Engineering from Johns Hopkins University, and today she is an Environmental Health Specialist for the County of San Diego in their Hazardous Materials Division.
- Co-advisor of Robert Kiyoy Beverly (2006-2011), Associate Specialist Project: on AMS Laboratory developments. Today Mr. Beverly is a winemaker/vineyard Manager and study at the UC Irvine Paul Merage School of Business.
- Co-advisor of Karla Acaylar (2009). Undergrad Senior Thesis: Time-Series Isotope Measurements ($\delta^{13}\text{C}$ and 14C) of Southern California Surface Seawater Dissolved Inorganic Carbon (DIC).

Advisor of Elise N. Hinger* (2007-2009), Undergrad Project: Carbon Isotope Measurements of Surface Seawater from a Time-Series Site off Southern California. With this project Ms. Hinger received the Undergraduate Award in Research for 2008, and today she is at the Oregon Health & Science University.

Advisor of Rachel Moore* (Finch), Sami Rifai* and Maya Mazon* (2004-2007), Undergrad Project: Evaluation of iron and cobalt powder brands as suitable catalysts for 14C-AMS target preparation. Today Mrs. Rachel is a circuit board designer at NAWCWD and Dr. Rifai completed his PhD degree from USF. In 2013 Mrs. Mazon became an Environmental Consultant at the San Diego County, California.

Advisor of Kevin C. Druffel-Rodriguez* and Maya Mazon* (2002-2004), Undergrad Project: Magnesium perchlorate as an alternative water trap in AMS graphite sample preparation. Kevin completed his Chemistry major at the USCB, and later joined the Marines.

Co-mentor of REU student John Kearney and a PhD candidate Gergana Mouteva during the summer of 2012 (with Prof. Dr. Claudia Czimczik at the ESS/UCI). Their findings were presented at the American Geophysical Union Fall Meeting of 2012.

Co-mentor of REU student Jessica Sanchez (CSUF undergrad) during the summer of 2014 (with Prof. Dr. Eric Potman and Alba Garcia at the Department of Chemistry/UCI, and Dr. Gallagher). Her findings have been presented in several meetings, including the SACNAS conference in Washington D.C., in which Ms. Jessica Sanchez received an Award for outstanding poster presentation in Biochemistry.

Offered training to over 30 individuals on sample preparation procedures (e.g. laboratory student helpers and specialists, students conducting research and/or visiting at the KCCAMS Facility).

PUBLICATIONS

Present scholar h-index=27, citations= 2429 on January 2017

** = supervised student, postdoc or research specialist*

Manuscripts submitted or under review

Mouteva GO, Randerson JT, Fahrni SM, Bush SB, Ehleringer JR, Xu X, **Santos GM**, Kuprov R., Schichtel B, Czimczik CI. 2017. Using radiocarbon to constrain black and organic carbon aerosol sources in Salt Lake City, *submitted to the Journal of Geophysical Research-Atmospheres*

Fahrni SM, Southon JR, **Santos GM**, Xu X. Reassessment of the 13C/12C and 14C/12C isotopic fractionation ratio and its impact on high precision radiocarbon dating, *Geochimica et Cosmochimica Acta*, *under review*.

Masion, A., Alexandre, A., Ziarelli, F., Viel, S., **Santos, GM**. 2016. Dynamic Nuclear Polarization NMR as a new tool to investigate the nature of organic compounds occluded in plant silica particles, *Scientific Reports*, *under review*.

Peer-reviewed Journal Articles

Herrera-Ramirez D., Andreu-Hayles L., Ignacio del Valle J., **Santos GM**, Gonzalez PLM. 2016. Non-annual tree rings in a climate-sensitive *Prioria copaifera* chronology in the Atrato River, Colombia, *Ecology and Evolution*, *accepted*.

Santos GM, and Alexandre A. 2016. Sources, concentrations and distribution of carbon in phytolith occlusions: Fact or fiction? A comment to "Occurrence, turnover and carbon sequestration potential of phytoliths in terrestrial ecosystems by Song et al. doi: 10.1016/j.earscirev.2016.04.007", *Earth Science Reviews*, <http://dx.doi.org/10.1016/j.earscirev.2016.11.005>

Alvim, D.S., Gatti, L.V., Corrêa, S.M., Chiquetto, J.B., Rossatt, C.S., Prettdod, A., Santos, M.H., Yamazakid, A., Orlando, J.P., **Santos, G.M.** 2016. Air Qual Atmos Health. doi:10.1007/s11869-016-0429-9

Mouteva, GO, Czimczik, CI, Fahrni, SM, Wiggins, EB, Rogers, BM, Veraverbeke, S, Xu, X, **Santos, GM**, Henderson, J, Miller, CE, Randerson, JT. 2016 CARVE: Fire-Related Aerosol and Soil Elemental and Isotopic Composition, Alaska, 2013. ORNL DAAC, Oak Ridge, Tennessee, USA

Santos, G.M. and Xu, X. 2016. Bag of tricks: a set of techniques, and other resources to help on 14C lab setup, sample processing and beyond, *Radiocarbon Journal*, doi:10.1017/RDC.2016.43

- Alexandre, A., J. Balesdent, P. Cazevielle, C. Chevassus-Rosset, P. Signoret, J-C Mazur, *A. Harutyunyan, E. Doelsch, I. Basile-Doelsch, H. Miche, and **G. M. Santos**. 2016 Direct uptake of organic carbon by grass roots and allocation in leaves and phytoliths: ^{13}C labeling evidence, *Biogeosciences*, 13, 1693-1703, 2016, doi:10.5194/bg-13-1693-2016
- *Reyerson, P.E., A. Alexandre, *A. Harutyunyan, R. Corbineau, *H.A.M. De La Torre, F. Badeck, L. Cattivelli, and **G.M. Santos**. 2016. Unambiguous evidence of old soil carbon in grass biosilica particles, *Biogeosciences*, 13, 1269-1286, doi:10.5194/bg-13-1269-2016
- Grothe, P.R., K. M. Cobb, *S.L. Bush, H. Cheng, **G.M. Santos**, J.R. Southon, R. Lawrence Edwards, D. M. Deocampo, H. R. Sayani. 2016. A comparison of U/Th and rapid-screen ^{14}C dates from Line Island fossil corals: implications for paleoclimate reconstruction, *Geochemistry, Geophysics, Geosystems (Gcubed)*
- Santos, G.M.**, Alexandre, A., Prior, C.A. From radiocarbon analysis to interpretation: A comment on "Phytolith Radiocarbon Dating in Archaeological and Paleocological Research: A Case Study of Phytoliths from Modern Neotropical Plants and a Review of the Previous Dating Evidence", *Journal of Archaeological Science* (2016), doi: 10.1016/j.jas.2015.06.002." by Dolores R. Piperno, *Journal of Archaeological Science* 66:36-43, DOI: 10.1016/j.jas.2015.11.012 (open access).
- Mouteva, G.O., C. I. Czimczik, S. M. Fahrni, E. B. Wiggins, B. M. Rogers, S. Veraverbeke, X. Xu, **G. M. Santos**, J. Henderson, C.E. Miller, J. T. Randerson. 2015. Black carbon aerosol dynamics and isotopic composition in Alaska linked with boreal fire emissions and depth of burn in organic soils, *Global Biogeochemical Cycles*, doi:10.1002/2015GB005247
- *Gallagher KL, Alfonso-Garcia A, *Sanchez J, Potma EO and **Santos GM**. 2015. Plant growth conditions alter phytolith carbon. *Front. Plant Sci.* 6:753. doi: 10.3389/fpls.2015.00753
- Mouteva, G.O., S.M. Fahrni, **G.M. Santos**, J.T. Randerson, Y.L. Zhang, S. Szidat, and C.I. Czimczik. 2015. Accuracy and precision of ^{14}C -based source apportionment of organic and elemental carbon in aerosols using the Swiss_4S protocol, *Atmos. Meas. Tech.*, 8, 3729-3743; www.atmos-meas-tech.net/8/3729/2015/ doi:10.5194/amt-8-3729-2015
- Santos, G.M.**, *H.A. Martinez De La Torre, M. Boudi, M. Bonafini, S. Saverwyns 2015 Improved radiocarbon analyses of modern human hair to determine the year-of-death by cross-flow nanofiltrated amino acids: common contaminants, implications for isotopic analysis, and recommendations, *Rapid Commun. Mass Spectrom.* 2015, 29, 1765–1773, DOI: 10.1002/rcm.7273.
- Hadad, M.A., **G.M. Santos**, F.A. Roig Juñent, *C.S.G. Grainger 2015. Annual nature of the growth rings of *Araucaria araucana* confirmed by radiocarbon analysis, *Quaternary Geochronology* 30: 42–47, doi:10.1016/j.quageo.2015.05.002
- Mouteva, G.O., S. M. Fahrni, **G. M. Santos**, J. T. Randerson, Y. L. Zhang, S. Szidat, and C. I. Czimczik 2015 Accuracy and precision of ^{14}C -based source pportionment of organic and elemental carbon in aerosols using the Swiss_4S protocol, *Atmos. Meas. Tech. Discuss.*, 8, 3933-3965, doi:10.5194/amtd-8-3933-2015, 2015
- Linares, R., K.D Macario, **G.M. Santos**, P.R.S. Gomes, C. Carvalho, H.C. dos Santos, M.D. Castro, *F. M. Oliveira, E.Q. Alves 2015. Radiocarbon measurements at LAC-UFF: recent performance, *Nuclear Instruments and Methods in Physics Research B*, doi:10.1016/j.nimb.2015.05.025.
- Macario, KD, *FM Oliveira, C Carvalho, **GM Santos**, X Xu, IS Chanca, EQ Alves, RM Jou, MI Oliveira, BB Pereira; VN Oliveira, M Muniz, R Linares, PRS Gomes, RM Anjos, MD Castro, L Anjos, AN Marques, LF Rodrigues 2015. Report on sample preparation at the Radiocarbon Laboratory of the Universidade Federal Fluminense (LAC-UFF) in Brazil, *Nuclear Instruments and Methods in Physics Research B*, <http://dx.doi.org/10.1016/j.nimb.2015.03.081>
- Alexandre A., Basile-Doelsch I., Delhaye T., Borshneck D., Mazur J.C., *Reyerson P., and **Santos G.M.** 2015 New highlights of phytolith structure and occluded carbon location: 3-X-ray microscopy and NanoSIMS results. *Biogeosciences*, 12, 863-873, 2015, doi: 10.5194/bg-12-863-2015
- Andreu-Hayles L, **Santos GM**, Herrera-Ramírez DA, Martín-Fernández J, Boza-Espinoza TE, Fuentes-Claros AF, Jørgensen PM 2015 Perfect matching between the Southern Hemisphere ^{14}C curve and dendrochronological dates from a Bolivian tropical tree species, *Radiocarbon* 57(1), 1-13, doi: 10.2458/azu_rc.57.18192.
- Fernandez, A., **Santos, G.**, Williams, E., Pendergraft, M., Vetter, L., Rosenheim, B. 2015 Blank corrections for ramped pyrolysis radiocarbon dating of sedimentary and soil organic carbon. *Analytical Chemistry*, doi: 10.1021/ac502874j.

- Alexandre A, Basile-Doelsch I, Delhaye T, Borshneck D, Mazur JC, *Reyerson P and **Santos GM**. 2014 New highlights on phytolith structure and occluded carbon location: 3-D X-ray microscopy and NanoSIMS results, *Biogeosciences Discuss.*, 11, 14699-14727, doi:10.5194/bgd-11-14699-2014
- Santos GM**, Linares R, Lisi CS and Tomazello Filho M. 2014) Annual growth rings in a sample of Paraná pine (*Araucaria angustifolia*): Toward improving the 14C calibration curve for the Southern Hemisphere, *Quaternary Geochronology* 25:96-103, doi: 10.1016/j.quageo.2014.10.004.
- Gao P., Xu X., Zhou L., Pack M., Griffin S., **Santos G.**, Southon J., and Liu K. 2014 Rapid sample preparation of dissolved inorganic carbon in natural waters using a headspace-extraction approach for radiocarbon analysis by accelerator mass spectrometry, *Limnology and Oceanography: Methods* 12:174-190, doi: 10.4319/lom.2014.12.174
- Coe HG, Macario KD, Gomes J, Chueng KF, Oliveira FM, Gomes PRS, Carvalho C, Linares R, Alves EQ, **Santos GM**. 2014 Understanding the variations in the vegetation of Sao Joao River basin, Southeastern coast of Brazil, during the Quaternary, using phytoliths and isotopic analyses, *Palaeogeography, Palaeoclimatology, Palaeoecology*, doi: 10.1016/j.palaeo.2014.01.009
- *De La Torre HAM, *Ormsby KM, Fuller BT and **Santos GM** 2014 14C measurements elucidate isotopic differences between nails and hair in modern humans, *Radiocarbon* 56(1): 53–65, doi:10.2458/56.17503.
- Martin, E.E., A. E. Ingalls, J.E. Richey, R.G. Keil, L.T. Truxal, **G.M. Santos**, S. R. Alin, and E.R.M. Druffel 2013 Radiocarbon age of lignin in a tropical river unravels the terrestrial carbon cycle, *Geophysical Research Letters* 40, 1-5, doi:10.1002/2013 GL057450
- *Corbinau R., *Reyerson, P., Alexandre, A. and **Santos, G.M.** 2013 Towards producing pure phytoliths that are suitable for carbon isotopic analysis, *Review of Palaeobotany and Palynology* 197: 179–185, doi: 10.1016/j.revpalbo.2013.06.001
- Santos, G.M.** and *Ormsby, K. 2013 Behavioral variability in ABA chemical pretreatment close to the 14C age limit. *Radiocarbon* 55:534-544.
- *Bush, S., **Santos, G.M.**, Xu, X., Southon, J., Thiagarajan, N., Hines, S. and Adkins, J.A. 2013 Simple, rapid, and cost effective: A screening method for 14C analysis of small carbonate samples. *Radiocarbon* 55:631-640.
- Szidat, S., Benichou, G., Bernardoni, V., Calzolari, G., Czimczik, C.I., Derendorf, L., Dusek, U., Elder, K., Fedi, M.E., Genberg, J., Gustafsson, Ö., Kirillova, E., Kondo, M., McNichol, A.P., Perron, N., **Santos, G.M.**, Stenström, K., Swietlicki, E., Uchida, M., Vecchi, R., Wacker, L., Zhang, Y.L., Prévôt, A.S.H. 2013 Intercomparison of 14C analysis of carbonaceous aerosols: Exercise 2009. *Radiocarbon* 55:1496-1509.
- *Ferguson, J.E., Johnson, K.R., **Santos, G.M.**, Meyer, L, and Tripathi, A. (2013) Investigating $\delta^{13}\text{C}$ and $\Delta^{14}\text{C}$ within *Mytilus californianus* shells as proxies of upwelling intensity, *Geochemistry, Geophysics, Geosystems (Gcubed)*, doi: 10.1002/ggge.20090.
- Danišík, M., Shane, P., Schmitt, A.K., Hogg, A., **Santos, G.M.**, Storm, S., Evans, N.J., Fifield, K., Lindsay, J. 2012 Re-anchoring the late Pleistocene tephrochronology of North Island (New Zealand) based on concordant radiocarbon ages and combined 238U/230Th disequilibrium and (U-Th)/He zircon ages, *Earth and Planetary Science Letters* 349-350: 240-2450.
- Santos, G.M.**, Alexandre, A., Southon, J.R., Treseder, K.K., Corbinau R. and *Reyerson, P. 2012 Possible source of ancient carbon in phytolith concentrates from harvested grasses, *Biogeosciences*, 9, 1873-1884, doi:10.5194/bg-9-1873-2012
- Coe, H.G., Alexandre, A., Carvalho, C.N., **Santos, G.M.**, Silva, A.S., Sousa, L.F., Lepsch, J.F. 2012 Changes in Holocene tree cover density in Cabo Frio (Rio de Janeiro, Brazil)? Tracks from soil phytolith assemblages, *Quaternary International* (available on line); doi: 10.1016/j.quaint.2012.02.044.
- Santos, G.M.** 2012 Beyond archaeology: 14C-AMS and the global carbon cycle. The IX Latin American Symposium on Nuclear Physics and Applications, American Institute of Physics-AIP Conf. Proc. 1423: 311-318; doi: 10.1063/1.3688819 (invited paper).
- Vivone, R.J., Godoy, M.L.D.P., Godoy, J.M., Kowsmann, R. and **Santos, G.M.** 2012 Method development for 234U and 230Th determination and the application to fossil coral and hydrocarbon seep dating from the region of the Campos Basin – Brazil, *Journal of Brazilian Chemical Society* 23(3):538-545, ISSN 013-5053.

- Santos, G.M.**, *Ferguson, J., *Acaylar, K., Johnson, K.R., Druffel, E. and Griffin, S. 2011 $\Delta^{14}\text{C}$ and $\delta^{13}\text{C}$ of seawater DIC as tracers of coastal upwelling: A 5-year time-series from Southern California, *Radiocarbon* 53(4): 669-677.
- Suárez R. and **Santos G.M.** 2011 Cazadores-Recolectores Tempranos Y Supervivencia De Fauna Del Pleistoceno (Equus Sp. Y Glyptodon Sp.) Durante El Holoceno Temprano En La Frontera Uruguay-Brasil, SAB – Sociedade de Arqueologia Brasileira, volume 23, numero 2, pagina 22; *in Spanish*
- Santos, G.M.**, Alexandre A., Coe H.G., Reyerson P.E., Southon J.R., De Carvalho C.N. (2010) The Phytolith C puzzle: a tale of background determinations and accuracy tests, *Radiocarbon* 52(1):113-128.
- Santos, G.M.**, Southon J.R., Drenzek N.J., Ziolkowski L.A., Druffel E., Xu X., Zhang D., Trumbore S., Eglinton T.I. and Hughen K.A. (2010) Blank assessment for ultra-small samples: chemical extraction and separation vs. AMS, *Radiocarbon* 52(3): 1322-1335
- Beverly R.K., Beaumont W., *Taus D., *Ormsby K.M., von Reden K.F., **Santos G.M.** and Southon J.R. 2010. The Keck Carbon Cycle AMS Laboratory, University of California Irvine: Status report, *Radiocarbon* 52(2): 301-309.
- Ingalls AE, Ellis E, **Santos GM**, McDuffee K, Truxal L, Keil RG, Druffel ERM (2010) HPLC Purification of Higher Plant-Derived Lignin Phenols for Radiocarbon Dating, *Analytical Chemistry*, 82: 8931–8938
- *Hinger, E.N., Santos, G.M., Druffel, E.R.M. and Griffin, S. 2010. Carbon Isotope Measurements of Surface Seawater from a Time-Series Site off Southern California, *Radiocarbon* 52(1):69-89.
- Mangini, A., J.M. Godoy J.M, Godoy M.L., Kowsmann R., **Santos G.M.**, Ruckelshausen M., Schroeder-Ritzrau A., Wacker L. (2010) Deep sea corals off Brazil verify a poorly ventilated Southern Pacific Ocean during H2, H1 and the Younger Dryas, *Earth and Planetetary Science Letters* 293: 269-27
- Kramer C, Trumbore S, Fröberg M, Dozal LMC, Zhang D, Xu X, **Santos GM** and Hanson P, (2010) Recent (<4 year old) Leaf Litter is Not a Major Source of Microbial Carbon in a Temperate Forest Mineral Soil, *Soil Biology & Biochemistry*, 42:1028-1037.
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Editorial reviewed articles, reports, book chapters and thesis

- Santos, G.M.**, J. R. Southon, A. Alexandre, R. Corbinau and *P. E. Reyerson 2012 Interactive comment to reply the "Comment on: "Possible source of ancient carbon in phytolith concentrates from harvested grasses" by G. M. Santos et al. 2012 by L. A. Sullivan and J. F. Parr." *Biogeosciences Discuss.*, 9, C6114–C6124
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Santos, GM. 1995. A Na₂ X1Σ⁺g and (1)1Πg Eletronic States Long Range Analysis (O Estado Eletrônico Fundamental X1Σ⁺g and (1)1Πg da Molécula de Na₂ – *in Portuguese*) Dissertation - to fulfill the requirements for the Master degree in Physical Sciences, specializing in specializing in Laser Spectroscopy. Universidade Federal Fluminense, Niterói, Brazil.

CONTRIBUTED PRESENTATIONS

Presenter is italicized

* = supervised student, postdoc or research specialist

Meetings and workshops

ACS 2017 - 253rd American Chemical Society, San Francisco, CA, April 2-6, 2017. APRIL 2-6, 2017. Streamlining analyses of atmospheric carbonaceous aerosols: Determining the sources of fires in Indonesia. Elizabeth Wiggins, Guaciara dos Santos and Claudia Czimczik. Paper ID: 2650760, Monday, April, 03, 2017, Moscone Center (POSTER)

AGU Fall Meeting 2016, San Francisco, USA, December 12-16, 2016

- a) Advances in the determination of the speciation of the carbon associated with biogenic silica produced by plants. *Armand Masion*, Anne Alexandre, Fabio Ziarelli, Stéphane Viel, **Guaciara M. Santos**. B53F-0565, Friday, 16 December 2016 13:40 - 18:00 Moscone South (POSTER).
- b) Robust evidence for forced changes in ENSO: from the mid-Holocene to the 21st century. *Pamela R. Grothe*, Kim M. Cobb, Giovanni Liguori, Emanuele Di Lorenzo, Antonietta Capotondi, Yanbin Lu, Hai Cheng, R. Lawrence Edwards, John R. Southon, **Guaciara M. Santos**, Daniel M. Deocampo, Jean Lynch-Stieglitz, Tianran Chen, Hussein R. Sayani, Kayla Townsend, Melat Hagos, Gemma O'Connor, Diane M. Thompson, Lauren T. Toth. A42E-03, Thursday, 15 December 2016 10:50 - 11:05 Moscone West – 3006 (ORAL)

CBO 2016 - “Oceanografia e Mudanças Climáticas: desafios profissionais”, Salvador, Brazil, November 5 to 9, 2016. A revisited discussion of AIW ages derived from cold water corals off Brazil. *Mangini, A.*, Godoy, J.M., Ruckelshausen, M., **Santos, G.M.**, Kowsmann, R., Schroeder-Ritzrau, A., Frank., N. (206-1; ORAL)

8th International Symposium – 14C & archaeology, Edinburgh, 27 June–1 July, 2016. The local marine reservoir effect at Kalba between neolithic and iron age. *Susanne Lindauer*, Mathias Hinderer, **Guaciara M. dos Santos**, Axel Steinhof, Eisa Yousif, Sabah A. Jasim, Carl Phillips, Has-Peter Uerpmann

The Third American Dendrochronology Conference, Mendoza, Argentina, March 28 to April 1, 2016

- a) Southern Hemisphere atmospheric radiocarbon during the past 60 years: filling up existing gaps and validating long-lasting tree species for further analysis. **Guaciara M. Santos**, Martín A. Hadad, Fidel Alejandro Roig Juárez, Laia Andreu-Hayles (ORAL)
- b) Dating tree rings from tropical tree species by combining radiocarbon measurements and dendrochronological techniques. **Guaciara M. Santos**, Laia Andreu-Hayles, Javier Martín-Fernández, David Herrera-Ramirez, Jorge Arango (POSTER)

AGU Ocean Sciences Session meeting 2016, New Orleans, Louisiana, February 21 to 26, 2016.

- a) Central tropical Pacific corals constrain anthropogenic influence on recent ENSO extremes (PC33A-04) *Pamela R. Grothe*, Kim M. Cobb, R. Lawrence Edwards, Hai Cheng, Daniel M. Deocampo, John R. Southon, **Guaciara M. Santos**, Yanbin Lu, Giovanni Liguori.

The 22nd Radiocarbon Conference, Dakar, Senegal, November 16-20, 2015

- a) Bag of tricks: a set of techniques, and other resources to help on 14C lab setup, sample processing and beyond. **Guaciara M. Santos** and Xaiomei Xu
- b) Distribution maps of Δ14C from across Rio de Janeiro state and city during 2014 and 2015. *Fabiana M. Oliveira, **Guaciara M. Santos**, *Cassandra S.G. Grainger, Junghun Park and Kita Macario

- c) Reconstructing the history of Indian Black Earth at an archaeological site of Santarém, Brazil by isotopic and anthracological analysis. Alisson Rangel, **Guaciara M. Santos**, Mario Tomazello Filho, Rita Scheel-Ybert, Denise Pahl Schaan

AGU Fall Meeting 2015, San Francisco, USA, December 14-18, 2015

- a) Phytolith-Occluded Carbon Pools and Fluxes: New Estimates. *Paul Reyerson, Anne Alexandre, **Guaciara M. Santos**. B13F-0697, Monday, 14 December 2015 13:40 - 18:00 Moscone South.
- b) Assessing the Age of Particulate Organic Matter Exported from a Temperate Rainforest Catchment of the North American Pacific Coast. Erin Martin, Anitra Ingalls, **Guaciara Santos**, Richard Keil, Leif Wefferling, Aaron Jones, Ellen Druffel, B13J-03, Monday, 14 December 2015 14:10 - 14:25 Moscone West - 2006
- c) Spatial and Temporal Variations of EC and OC Aerosol Combustion Sources in a Polluted Metropolitan Area. Gergana Mouteva, James Randerson, Simon Fahrni, **Guaciara Santos**, Susan Bush, James Ehleringer, Claudia Czimczik, A21A-0096, Tuesday, 15 December 2015 08:00 - 12:20
- d) Carbon and nitrogen isotopic composition of PM_{2.5} at a periurban Mt. Taehwa near Seoul and over the Yellow Sea. Saehee LIM, Taekyu Joo, Meehye Lee, Claudia Czimczik, Sandra Holden, Gergana Mouteva, **Guaciara Santos**, Xiaomei Xu, Saewung Kim, Gangnam Cho, Jungmin Park, Beomcheol Shin, Sang-boom Ryoo, A11G-0151, Monday, 14 December 2015 08:00 - 12:20 Moscone South - Poster Hall
- e) Central Tropical Pacific Corals Reveal Reduced ENSO Variability 3-5kyBP. Pamela Grothe, Kim Cobb, R. Lawrence Edwards, Hai Cheng, Daniel Deocampo, John Southon, **Guaciara Santos**, PP31A-2215, Wednesday, 16 December 2015 08:00 - 12:20

CEG2015 - VII Congresso Nacional de Geomorfologia, Lisboa, Portugal, 8 a 10 de Outubro, 2015. Evolução geomorfológica de veredas no quaternário a partir de inferências da paleovegetação e de paleoambientes, norte de Minas Gerais, Brasil. Cristina HR Augustin, Ubiranan P. de Lucena, **Guaciara M. dos Santos**, Heloisa H.G. Coe (POSTER).

Goldschmidt 2015 Conference, Prague, Czech Republic, 16-21 August 2015. Aerosol Carbon Isotopes at Alert, Canada: Understanding Emission Sources of Black Carbon Transported to the Arctic. Huang L, Zhang W, Sharma S, Brook J, Leitch R, Czimczik C, **Santos GM**, He K, Duan F & Yang F

ATBC15 – The 52nd Annual meeting of the Association for Tropical Biology and Conservation, Honolulu, Hawaii, 12-16 July, 2015. Matching dendrochronological dates with the Southern Hemisphere 14C bomb curve to confirm annual tree rings in the tropics. Laia Andreu-Hayles, **Guaciara M. Santos**, David A. Herrera-Ramírez, Jorge Ignacio del Valle, Javier Martin-Fernández, Tatiana E. Boza-Espinoza, Alfredo F. Fuentes, Paula LM. González, Daniel Ruiz-Carrascal, Peter M. Jørgensen, Oral #89 (invited).

2015 EGU - European Geosciences Union General Assembly, Vienna, Austria, 12 – 17 April, 2015. Soil organic carbon can be up-taken by plant roots and stored in plant biosilica: NanoSIMS and isotopic labeling evidences. Anne Alexandre, **Guaciara M. Santos**, Jérôme balesdent, Isabelle Basile-Doelsch, Daniel Borschneck, Patrick Cazevielle, Claire Chevassus-Rosset, Emmanuel Doelsch, *Araks Harutyunyan, Laurent Lemee, Jean-Charles Mazur, Paul Reyerson, and Patrick Signoret, EGU2015-8824 (ORAL)

The 2015 Emerging Researchers National (ERN) Conference in STEM, Washington, DC, February 19-21, 2015. Chemical Characterization of Phytoliths with Raman Spectroscopy: What is inside? Jessica R. Sanchez, Alba Alfonso Garcia, *Kimberley Gallagher, Eric Potma, *Araks Harutyunyan, **Guaciara M. Santos**. (<http://www.emerging-researchers.org>) (POSTER)

AGU Fall Meeting 2014, San Francisco, USA, December 15-19, 2014

- a) The next chapter of direct phytolith 14C dating: debunking the myth of occluded photosynthetic carbon exclusivity. **Guaciara Santos**, *Araks Harutyunyan, Anne Alexandre, *Paul Reyerson, *Kimberley Gallagher, Isabelle Basile-Doelsch
- b) Characterizing the Nature and Distribution of Phytolith Organic Matter Using Raman Spectroscopy. *Kimberley GL, Alfonso-Garcia A, Sanchez J, Harutyunyan A, Potma E, **Santos GM**. B51A-0012

- c) A comparison of rapid-screen ^{14}C dates and U/Th dates from fossil corals: implications for paleoclimate reconstruction. *Grothe PR*, Cobb KM, *Bush SL, Cheng H, **Santos GM**, Southon JR, Edwards RL. PP41D-1428
- d) Preliminary carbon isotope measurements of fossil fuel and biogenic emissions from the Brazilian Southeastern region. *Oliveira FM, **Santos GM**, Grainger C, Park J, Macario K, Muniz M, Queiroz E. A53L-3376
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- a) The next chapter of direct phytolith ^{14}C dating: debunking the myth of occluded photosynthetic carbon exclusivity. **Guaciara Santos**, *Araks Harutyunyan, Anne Alexandre, *Paul Reyerson, *Kimberley Gallagher, Isabelle Basile-Doelsch (POSTER)
- b) Testing the removal of exogenous bounded carbon from modern human hair by cross-flow nanofiltrated amino acids procedure. **Guaciara Santos**, *Hector Martinez De La Torre, Mathieu Boudin, Marco Bonafini (POSTER)
- c) Annual growth rings in a sample of Paraná pine (*Araucaria Angustifolia*): towards improving the ^{14}C calibration curve for the Southern Hemisphere. **Guaciara Santos**, Roberto Linares, Claudio Lisi, Mario Tomazello Filho (POSTER)
- d) Dating tree rings from tropical tree species by combining radiocarbon measurements and dendrochronological techniques. **Guaciara Santos**, Laia Andreu-Hayles, Javier Martin-Fernández, David Herrera-Ramírez, Jorge Arango (POSTER)
- e) Radiocarbon measurements at LAC-UFF: recent performance. *Roberto Linares*, Hellen C. Santos, Flavia Tostes, Kita CD Macario, *Fabiana Oliveira, Paulo R.S. Gomes, Maikel D. Castro Maikel, **Guaciara Santos**, Mario Tomazzello-Filho, Claudio Lisi (ORAL)
- f) Equipment upgrades at the UC Irvine Keck AMS laboratory. *John Southon*, **Guaciara Santos**, Cyril McCormick, Chris Pederson, Mark Roberts (ORAL).
- g) Report on the sample preparation methods performed at the Radiocarbon Laboratory of the Fluminense Federal University (LAC-UFF) in Brazil. *Kita Macario*, Fabiana Oliveira, **Guaciara**

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- a) Origin of Phytolith Carbon Revealed by Isotopic Measurements of Extracted Phytoliths from FACE Grasses. **Paul E. Reyerson*; **Guaciara Santos**; Anne E. Alexandre; Araks Harutyunyan; Franz Badeck; Luigi Cattivelli – B11I-01 – (ORAL)
- b) Radiocarbon source apportionment of urban and wildfire black and organic carbon aerosol. *Gergana Mouteva*; Simon M. Fahrni; **Guaciara Santos**; James T. Randerson; Claudia I. Czimczik - A34A-04 – (ORAL)

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- a) Re-investigating the isotopic fractionation corrections in radiocarbon measurements. *Simon Fahrni*; **Guaciara M. Santos**; Xiaomei Xu; John R. Southon; V11F-08 (ORAL).
- b) U-He zircon dating of the Rotoiti eruption, New Zealand: a new approach to a classic tephrochronology problem AU: *Shane, P A*, Danisik, M, Schmitt, A K, Hogg, A, **Santos, G M**, Storm, S, Evans, N, Fifield, K, Lindsay, J, V31F-07 (ORAL INVITED)
- c) Simple, rapid, and cost effective: A screening method for ¹⁴C analysis of small carbonate samples. **Shari Bush*; **Guaciara M. Santos**; Xiaomei Xu; John R. Southon; PP13B-2078. (POSTER)
- d) Understanding the variations in the vegetation of Cabo Frio, Southeastern coast of Brazil, during the Quaternary. *Kita Macario*; *Heloisa H. Coe*; Jenifer Gomes; Fabiana Oliveira; Paulo Roberto Gomes; Carla Carvalho; Roberto Linares; Eduardo Alves; **Guaciara M. Santos**; PP41B-2002.

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- a) Biosilica of higher Plants: Exclusive photosynthetic origin of phytC debunked by ^{14}C & ^{13}C measurements of extracted phytoliths from contemporary living grasses. **Guaciara M. Santos**, Rémi Corbineau, *Paul E. Reyerson, Anne Alexandre, John R. Southon (S03-O-05) (ORAL)
- b) Behavioral variability in the ABA chemical pretreatment close to the ^{14}C age limit. **Guaciara M. Santos** and *Keylan Ormsby (S03-P-062) (POSTER)
- c) Isotopic differences between hair and nails in modern humans: pre-treatment inadequacy or not? **Martinez De La Torre H.*, *Ormsby K., **Santos G.**, Fuller B. (S19-P-356) (POSTER).
- d) Sources of Extraneous Carbon Contamination in Samples Collected by Preparative Capillary Gas Chromatography. *Zhang D.*, Druffel E., Xu X., Southon J., **Santos G.** (S03-P-038) (POSTER)
- e) Rapid sample preparation of Dissolved Inorganic Carbon (DIC) in natural waters using a headspace – extraction approach for radiocarbon analysis on AMS. Gao P., *Xu X.*, Zhou L., Pack M.A., Griffin S., **Santos G.M.**, Southon J.R., Ferguson J. (S03-P-072) (POSTER)
- f) Carbon blank investigation on quartz filters: A potentially critical aspect for high precision measurements of ^{14}C in particulate organic carbon (POC) *Stills A.*, Xu X., Zeng F., **Santos G.M.**, Southon J.R., Adam Z.C., Griffin S., Ruacho M. (S03-P-086) (POSTER)
- g) Re-investigating the isotopic fractionation corrections in radiocarbon measurements. *Fahrni S.M.*, **Santos G.M.**, Southon J., Xu X. (S01-P-150) (POSTER)
- h) Seasonal variability in radiocarbon reservoir age due to upwelling recorded in *Mytilus californianus* shells. *Ferguson J.*, Johnson K., **Santos G.**, Meyer L., Tripathi A. (S06-P-185) (POSTER)
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- b) Partitioning of fire and combustion contributions to black carbon aerosols across the U.S. using radiocarbon measurements and modeling. *Claudia Czimczik*, **Guaciara dos Santos**, James T. Randerson, Yang Chen (POSTER)
- c) Using archaeological shells to investigate Paleoclimate. *Julie Ferguson*, Kathleen Johnson, **Guaciara Santos** (POSTER)
- d) The Keck Carbon Cycle AMS Lab – a major ESS Facility. *John Southon*, Ellen Druffel, Sue Trumbore, Claudia Czimczik, Xiaomei Xu, **Guaciara Santos**, Sheila Griffin, Dachun Zhang, Chandra Bertrand, Alexandra Magana, Alysha Coppola, Julie Ferguson, Massimo Lupascu, Shari Bush, Hector Martinez, Dina Saleh, Mariela Ruacho, Aubrey Stills, Danielle Glynn, Francesca Hopkins, Mary Pack, Pan Gao (POSTER)

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- a) 14C and $\delta^{13}\text{C}$ in *Mytilus californianus* shells as a proxy of upwelling intensity. *JE Ferguson, KR Johnson, GM Santos, L Meyer, K Acaylar, AK Tripathi*
- b) Temporal Insights on Biomarker-Based Climate Records. *N Drenzek, RH Stanley, GM Santos, JR Southon, ER Druffel, D Montlucon, KA Hughen, TI Eglington*

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- a) Blank assessment for ultra-small samples: chemical extraction and separation vs. AMS. *GM Santos and John R Southon*
- b) The Keck Carbon Cycle Ams Laboratory, University Of California Irvine: Status Report. *Robert K Beverly, Denis Tauz, Will Beaumont, Shenil Patel, Kaelyn M Ormsby, GM Santos, John R Southon*
- c) Compound-Specific Radiocarbon Analyses of Phospholipid Fatty Acids And Alkanes In Oceanic Sediments Using Preparative Capillary Gas Chromatographic and AMS Techniques. *Ellen R M Druffel, Dachun Zhang, Xiaomei Xu, Lori A Ziolkowski, John R Southon, G dos Santos, Susan E Trumbore*

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- a) The Phytolith C puzzle: a tale of background determinations and accuracy tests" *G.M. Santos et al.*; p.93 (P1_107).
- b) 14C based source apportionment of small (<100micro-gC) samples of total organic carbon (TOC) and black carbon (BC) in ice from Naimona'nyi, Tibet" C. Czimczik et al. p.94 (p1_108).
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- b) Temporal Dynamics of Terrestrial Organic Matter Transfer to the Ocean. *Drenzek, N.*; Eglinton, T.; Hughen, K.; Montlucon, D.; Druffel, E.; Southon, J.; **Dos Santos, G.**; Poussart, P.; Schefuss, E.; Dickens, A.

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- a) Quantifying Archaeal Community Autotrophy in the Mesopelagic Ocean Using Natural Radiocarbon. *SR Shah*, AE Ingalls, RL Hansman, LI Aluwihare, **GM Santos**, E Druffel, A Pearson
- b) Temporal constraints on the transfer of particulate organic carbon from the continents to the oceans. *TI Eglinton*, NJ Drenzek, AF Dickens, P Poussart, E Schefuss, D Montlucon, ER Druffel, J Southon, **G Dos Santos**, K Hughen
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- a) Ultra small-mass ¹⁴C-AMS sample preparation and analysis at the KCCAMS Facility. **G.M. Santos**, J.R. Southon, S. Griffin, S.R. Beupre and E.R.M. Druffel; p.81 (P-II D19).
- b) Evaluation of iron and cobalt powder brands as suitable catalysts for ¹⁴C-AMS target preparation. **G.M. Santos**, M. Mazon, S. Rifai, J.R. Southon and R. Moore; p.83 (P-II D25).
- c) 38th Annual Meeting of SNEAP 2004, McMaster University, Hamilton, Ontario. SNEAP 2004 Laboratory Report: KCCAMS Facility, UC Irvine. **Guaciara M. Santos** and John R. Southon
- d) 18th International Radiocarbon Conference, September 2003, Wellington, New Zealand. Magnesium perchlorate as an alternative water trap in AMS graphite sample preparation: a report on sample preparation at the KCCAMS Facility at the University of California, Irvine, **G.M. Santos** et al; p.32(P-1-45).
- e) Exploring the minimum sample size limit for CSRA: Lessons from Water column" Ann Pearson, *Anitra E Ingalls*, Sunita R Shah, Roberta L Hansman, Lihini I Aluwihare, **Guaciara M Santos**, Sheila Griffin, Ellen RM Druffel.; p.46 (CMPD 3).
- f) Life with MC-SNICS Part II: recent ion source development at the Keck Carbon Cycle AMS Facility" *J.R. Southon* and **G.M. Santos**; p.3 (IONS 6)

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- b) The Keck Carbon Cycle AMS Laboratory, University of California, Irvine: two installations, initial operation, and a background surprise", *J. Southon*, **G.M. Santos** et al; p.23(11-C-1).
- c) Radiocarbon measurements in monthly coral bands during the 1760s from the Eastern equatorial Pacific Ocean: Ventilation changes in the upper ocean annual and longer timescales, *Druffel, E.R.M.*, S. Griffin, J. Hwang, T. Komada, S.R. Beupre, K.C. Druffel-Rodriguez, **G.M. Santos**, and J. Southon; p. 24(12-C-3).
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- c) ¹⁴C AMS as a Tool for the Investigation of Mercury Deposition at Remote Amazon Region, *J.A. Barbosa*, RC Cordeiro, EV Silva, b Turcq, **GM Santos**, PRS Gomes, A Sifedinne, ALS Albuquerque, LD Lacerda, PA Hausladen, S.G. Tims, LK Fifield and V. Levchenko; p115

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- b) Chronologies from Accelerator Mass Spectrometry, L.K. Fifield et al; p. 34

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- b) Radiocarbon Dating of Rotoehu Tephra, New Zealand", **G.M. Santos** et al; p. 210
- c) Radiocarbon Dating of Ancient Sites in Australia Revisited", *L.K. Fifield*, M I Bird, CSM Turney, PA Hausladen, **GM Santos**, M L di Tada; p. 133
- d) Radiocarbon Dating of Ancient Sites in Australia Revisited", *L.K. Fifield*, M I Bird, CSM Turney, PA Hausladen, **GM Santos**, M L di Tada; p. 133

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- a) Status and Plans for the Brazilian AMS Program, R. Liguori Neto et al; p.47
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