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Dr. Victor E. A. Caldas

CONTACT INFORMATION

Researcher
Vrije University Amsterdam
Faculty of Earth and Life Sciences
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CURRENT ACADEMIC APPOINTMENT

Researcher, Vrije Universiteit Amsterdam — February 2016 to present
Faculty of Earth and Life Sciences
Department of Ecological Science

Guest Researcher, FOM Institute AMOLF — February 2016 to present
Physics of Cellular Behaviour

EDUCATION

University of Groningen, Groningen, The Netherlands

Ph.D., Zernike Institute for Advanced Materials, — May 2016

- Thesis Topic: *Activation and regulation of E. coli DNA Polymerase V studied at the single-molecule level*
- Adviser: Professor Antoine M. van Oijen

University of São Paulo, São Carlos, Brazil

M.Sc., Physics Institute at São Carlos, — August 2011

- Program: Applied Physics – Biomolecular Physics
- Thesis Topic: *Adenine phosphoribosyltransferase from Schistosoma mansoni: insights into the catalytic mechanism via molecular dynamics*
- Adviser: Professor Otavio H. Thiemann

B.Sc., Physics and Biomolecular Sciences, — December 2009

REFEREED JOURNAL PUBLICATIONS

[1] Ghodke, H., **Caldas, V. E. A.,** Punter, C. M., van Oijen, A. M., and Robinson, A. Single-molecule specific mislocalization of red fluorescent proteins in live *Escherichia coli*. In: *Biohpysical Journal*. 2016. doi:DOI: 10.1016/j.bpj.2016.05.047

[2] **Caldas, V. E. A.**, Punter, C. M., Ghodke, H., Robinson, A., and van Oijen, A. M. iSBatch: a batch-processing platform for data analysis and exploration of live-cell single-molecule microscopy images and other hierarchical datasets. In: *Molecular BioSystems*, 11(10):2699–708 2015 doi:10.1039/c5mb00321k

[3] Robinson, A., McDonald, J. P., **Caldas, V. E. A.**, Patel, M., Wood, E. A., Punter, C. M., Ghodke, H., Cox, M. M., Woodgate, R., Goodman, M. F., and van Oijen, A. M. Regulation of Mutagenic DNA Polymerase V Activation in Space and Time. In: *PLoS genetics*, 11(8):e1005482. 2015 doi:10.1371/journal.pgen.1005482

[4] Pozzi, E., Megda, C. R., **Caldas, V. E.**, Damianovic, M., and Pires, E. C. Microbial population in an aerated thermophilic reactor that treats recycled cardboard plant wastewater. In: *Journal of Water Process Engineering*, 4:74–81. 2014. doi:10.1016/j.jwpe.2014.08.011

[5] da Silva, M. T. A., **Caldas, V. E. A.**, Costa, F. C., Silvestre, D. A. M. M., and Thiemann, O. H. Selenocysteine biosynthesis and insertion machinery in Naegleria gruberi. **Cover** In: *Molecular and biochemical parasitology*, 188(2):87âĂŞ90. 2013
doi:10.1016/j.molbiopara.2013.04.002

[6] Del Nery, V., Damianovic, M., Pozzi, E., de Nardi, I., **Caldas, V.**, and Pires, E. (2013). Long-term performance and operational strategies of a poultry slaughterhouse waste stabilization pond system in a tropical climate. In: *Resources, Conservation and Recycling*, 71:7–14. 2013.
doi:10.1016/j.resconrec.2012.11.006

[7] Serrão, V. H. B., Alessandro, F., **Caldas, V. E. A.**, Marçal, R. L., Pereira, H. D., Thiemann, O. H., and Garratt, R. C. Promiscuous interactions of human septins: the GTP binding domain of SEPT7 forms filaments within the crystal. In: *FEBS letters*, 585(24):3868–73. 2011
doi:10.1016/j.febslet.2011.10.043

SUBMITTED PUBLICATIONS

[1] **Victor E.A. Caldas**, Elizabeth A. Wood, Michael M. Cox, Roger Woodgate, Myron F. Goodman, Antoine M. van Oijen, Andrew Robinson
DNA polymerase V does not compete with DNA polymerases II and IV for binding sites on DNA in UV-irradiated *Escherichia coli* cells *Submitted to Nuceic Acids Research*

CONFERENCE POSTERS

[1] Single Molecule measurements of DNA polymerase competition in live *E. coli* cells. In: *EMBL Symposia – Seeing is believing*, Heidelberg - Germany. 2015. Poster abstract. Selected for flash talk.

[2] Single Molecule measurements of DNA polymerase competition in live *E. coli* cells. In: *ZING Conference on Genomic Integrity*, Cairns - Australia. 2015. Poster abstract.

[3] Single Molecule imaging of the SOS response: tracking the DNA polymerases in live *E. coli* cells. In: *Gordon Research Conference – Single Molecule Approaches to Biology*. Vermont - USA. 2012. Poster abstract.

[4] Activation and regulation of *E. coli* DNA Polymerase V studied at the single-molecule level In: *Dutch Biophysisical Society Meeting*. Veldhoven - The Nethelrands. Yearly presentation from 2012 to 2015. Poster abstract.

[5] Activation and regulation of *E. coli* DNA Polymerase V studied at the single-molecule level *Zernike Institute for Advanced Materials Vlieland Conference*, Vlieland - The Netherlands. 2013 and 2015. Poster abstract.

[6] Selenocysteine Incorporation Machinery in *Naegleria gruberi*. In: *XXVI Annual Meeting of Brazilian Society for Protozoology* , Lindóia - Brazil. 2010. Poster abstract.

[7] Study of Microbial Diversity of Brazilian Savanna Conserved Regions and a Eucalyptus Culture. In: *XXXVII SBBq Annual Meeting e XI PABMB Meeting*. Foz do Iguaçu - Brazil. 2008.

SCHOLARSHIPS, HONORS AND PRIZES

[1] 2010-2011 – Research Scholarship – CAPES – University of São Paulo.

[2] 2010 – Prize M. Issao – Best undergraduate work – Brazilian Society for Odontology Research (SBPqO) – Shared with R. A. Caldas.

[3] 2009 – First place on Admission Exam – Master in Applied Physics – IFSC – University of São Paulo.

[4] 2008 – Travel and Internship Grant – (U of Illinois at Urbana-Champaign/HHMI).

[5] 2007-2010 – Undergraduate Research Scholarship – FAPESP – São Paulo. Ref. 07/53413-0.

Invited Talks

[1] Caldas, V.E.A,. Regulation of DNA Polymerase V access to DNA in live *E. coli* cells. In: *NVBMB Symposium - Controlling Biology with Light*, Groningen, The Netherlands, November, 2014.

Research and Work Experience

University of Gronigen, Groningen, The Netherlands

Research Assistant – Ph.D. candidate **September 2011 – December 2015**

- Zernike Institute for Advanced Materials
- Single-Molecule Biophysics

GMO Safety Officer - (VM) **October 2014 – December 2015**

- Zernike Institute for Advanced Materials
- Single-Molecule Biophysics

University of Wollongong, Wollongong, NSW, Australia

Visiting Scholar **August 2015**

- Supervisor: Antoine M. van Oijen

University of Wisconsin-Madison, Madison, WI, USA.

Visiting Scholar **March 2013**

- Application of Lambda-RED recombination to *E. coli cells*
- Supervisor: Michael M. Cox

University Illinois at Urbana-Champaign, Urbana, IL. USA.

Visiting Scholar **December 2008 to March 2009**

- Single-molecule microscopy on the study of SNARE-induced vesicle fusion
- Supervisor: Taekjip Ha.

University of São Paulo, São Carlos, SP, Brazil
Physics Institute of São Carlos

Research Assistant - M.Sc. Student **Jan 2010 to Aug 2011**

- Supervisor: Otavio H. Thiemann

Undergraduate Research Associate **Jun 2006 to Dec 2009**

- Supervisor: Otavio H. Thiemann

Teaching Experience

University of Groningen, Groningen, The Netherlands

Teaching Assistant – Instructor **From 2012 to 2015**

- Molecular Biophysics
  - Undergraduate course in physical biology of cells.
  - Main instructor: Prof. Thorben Cordes

University of São Paulo, São Carlos, SP, Brazil.

Teaching Assistant – Instructor **2010 to 2011**

- Modern Physics
  - Undergraduate course

Teaching Assistant – Instructor **2010**

- General Physics
  - Undergraduate course

Other Meeting Attendance

Participant

- 2015 – Who wants to become an Entrepreneur | University of Groningen, The Netherlands
- 2014 – Dresden Summer School in Systems Biology. Center for Systems Biology Dresden, CSBD | MPI, Germany.
- 2009 – Workshop in Biophysical Chemistry. IFSC | Universidade de Sao Paulo
- 2007 – Genomics, Proteomics and Stem-cells. IFSC | Universidade de São Paulo
- 2007 – Genomics, Proteomics and Stem-cells. IFSC | Universidade de São Paulo
- 2007 – I Winter Course in Bioinformatics. FMRP | Universidade de Sao Paulo
- 2006 – Workshop in Physics Research applied to Human physiology. IFSC | Universidade de Sao Paulo
- 2006 – School on Computational Physics. IFSC | Universidade de Sao Paulo

Professional Memberships

- Netherlands Society for Biochemistry and Molecular Biology (2014–present)
- Biophysical Society (2016–present)

Computer Skills

- Java, Git – Intermediate
- R, Python, SQL, Latex - basic

Languages

- Brazilian Portuguese - Native
- English - Fluent (TOEFL iBT 110/120)
- Dutch - Basic understanding (A2)
- Spanish - Basic understanding

Service

DIY Bio Groningen,

- August 2013 - Present – Development of open-source PCR machine and 3D printers. Participation in fairs to promote citizen science.

De Jonge Onderzoekers,

- August 2013 - December 2015 – Workshops and tutorials for the community.

References Available to Contact

Dr. Toby Kiers (e-mail: toby.kiers@vu.nl; phone: Phone:+31 20 598 70 85)

- Full Professor, Faculty of Earth and Life Sciences, Vrije Universiteit Amsterdam
  - ⋆ *Dr. Kiers is my current supervisor*

Dr. Tom Shimizu (e-mail: t.shimizu@amolf.nl; phone: Phone:+31 20 754 72 42)

- Associate Professor, Physics of Cellular Behaviour, FOM Institute AMOLF
  - ⋆ *Dr. Shimizu is my current supervisor*

Dr. Antoine M. van Oijen (e-mail: vanoijen@uow.edu.au; phone: Phone:+61 2 4221 4780)

- Full Professor, School of Chemistry, University of Wollongong Australia
  - ⋆ *Dr. van Oijen is my former Ph.D thesis supervisor*

Dr. Andrew Robinson (e-mail: andrewr@uow.edu.au; phone: +61 2 4221 4735)

- Associate Researcher, School of Chemistry, University of Wollongong Australia
  - ⋆ *Dr. Robinson is my former Ph.D co-supervisor*

Dr. Otavio H. Thiemann (e-mail: thiemann@ifsc.usp.br; phone: +55 16 3373 8089)

- Associate Professor, Protein Crystallography Group, Physics Institute at São Carlos
  - ⋆ *Dr. Thiemann is my former M.Sc. and B.Sc. supervisor.*