Stanford

Alexandre Cassago

Life Science Research Professional 2, SLAC National Accelerator Laboratory

Curriculum Vitae available Online

Bio

BIO

Dr. Alexandre Cassago has been a cryo-electron microscopy specialist at the Stanford-SLAC CryoEM Center since 2023. His main activities include training and overseeing user and researcher projects, organizing workshops and short-term courses on sample preparation and microscope operation, and assisting in maintenance of microscopes and other support equipment. Before joining the S2C2 team, he assisted in the implementation of the cryo-EM technique in Brazil at the first CryoEM Facility in South America, located at the Brazilian Nanotechnology National Laboratory in Campinas - Brazil, where he worked for over 10 years. His background includes molecular biology, protein purification, and extensive experience in sample preparation for electron microscopy. Dr. Cassago is keenly interested in developing more efficient strategies for data collection and in the processing of data from both SPA and Tomography. He recently had the opportunity to attend training in the microED technique and was delighted to learn more about it.

CURRENT ROLE AT STANFORD

CryoEM Specialist, Stanford-SLAC CryoEM Center

HONORS AND AWARDS

- Winner of the 18 Annual Users Meeting from the National Synchrotron Light Laboratory Poster Session, LNLS - Brazil (2008)
- Winner of the 2 National Congress of Scientific Initiation Competition, CONIC - Brazil (2002)

EDUCATION AND CERTIFICATIONS

- Post-PhD, Brazilian Nanotechnology National Laboratory (LNNano) - Brazil , Cryo-EM Protein Complexes (2013)
- Post-PhD, Brazilian Biosciences National Laboratory (LNBio) - Brazil , Protein Interaction (2012)
- PhD, University of São Paulo (USP) - Brazil , Biomolecular Physics (2010)
- MSc, Federal University of São Carlos (UFSCar) - Brazil , Genetics and Evolution (2005)
- BSc, Federal University of São Carlos (UFSCar) - Brazil , Biological Sciences (2003)

LINKS

- LinkedIn: https://www.linkedin.com/in/alexandre-cassago-9793435b/
- ORCID ID: https://orcid.org/0000-0003-1032-4749

Professional

WORK EXPERIENCE

- CryoEM Specialist - Stanford SLAC Cryo-EM Center (S2C2) (January 30, 2023 - present)

- CryoEM Specialist - Brazilian Nanotechnology National Laboratory (LNNano) at Brazilian Center for Research in Energy and Materials (CNPEM) (September 2, 2013 - January 13, 2023)

Publications

PUBLICATIONS

- **Molecular mechanism of glutaminase activation through filamentation and the role of filaments in mitophagy protection.** *Nature structural & molecular biology*
  Adamoski, D., Dias, M. M., Quesñay, J. E., Yang, Z., Zagoriy, I., Steyer, A. M., Rodrigues, C. T., da Silva Bastos, A. C., da Silva, B. N., Costa, R. K., de Abreu, F. M., Islam, Z., Cassago, et al
  2023; 30 (12): 1902-1912

- **Structural dynamics of SARS-CoV-2 nucleocapsid protein induced by RNA binding.** *PLoS computational biology*
  Ribeiro-Filho, H. V., Jara, G. E., Batista, F. A., Schleder, G. R., Costa Tonoli, C. C., Soprano, A. S., Guimarães, S. L., Borges, A. C., Cassago, A., Bajgelman, M. C., Marques, R. E., Trivella, D. B., Franchini, et al
  2022; 18 (5): e1010121

- **Cryo-EM structure of the mature and infective Mayaro virus at 4.4 Å resolution reveals features of arthritogenic alphaviruses.** *Nature communications*
  Ribeiro-Filho, H. V., Coimbra, L. D., Cassago, A., Rocha, R. P., Guerra, J. o., de Felicio, R., Carnieli, C. M., Leme, L., Padilha, A. C., Paes Leme, A. F., Trivella, D. B., Portugal, R. V., Lopes-de-Oliveira, et al
  2021; 12 (1): 3038

- **Specimen preparation optimization for size and morphology characterization of nanocellulose by TEM** *CELLULOSE*
  da Silva, L. C. E., Cassago, A., Battirola, L. C., Goncalves, M., Portugal, R.
  2020; 27 (9): 5435-5444

- **Myriapod haemocyanin: the first three-dimensional reconstruction of Scolopendra subspinipes and preliminary structural analysis of S. viridicornis.** *Open biology*
  Riciluca, K. C., Borges, A. C., Mello, J. F., de Oliveira, U. C., Serdan, D. C., Florez-Ariza, A., Chaparro, E., Nishiyama, M. Y., Cassago, A., Junqueira-de-Azevedo, I. L., van Heel, M., Silva, P. I., Portugal, et al
  2020; 10 (4): 190258

- **Characterization of phospholipid vesicles containing lauric acid: physicochemical basis for process and product development.** *Heliyon*
  Farkuh, L., Hennies, P. T., Nunes, C., Reis, S., Barreiros, L., Segundo, M. A., Oseliero Filho, P. L., Oliveira, C. L., Cassago, A., Portugal, R. V., Muramoto, R. A., Carretero, G. P., Schreier, et al
  2019; 5 (10): e02648

- **A revised order of subunits in mammalian septin complexes.** *Cytoskeleton (Hoboken, N.J.)*
  Mendonça, D. C., Macedo, J. N., Guimarães, S. L., Barroso da Silva, F. L., Cassago, A., Garratt, R. C., Portugal, R. V., Araujo, A. P.
  2019; 76 (9-10): 457-466

- **Cryo-EM structure of the bacteria-killing type IV secretion system core complex from Xanthomonas citri.** *Nature microbiology*
  Sgro, G. G., Costa, T. R., Cenens, W., Souza, D. P., Cassago, A., Coutinho de Oliveira, L., Salinas, R. K., Portugal, R. V., Farah, C. S., Waksman, G.
  2018; 3 (12): 1429-1440

- **Evaluation of siRNA and cationic liposomes complexes as a model for in vitro siRNA delivery to cancer cells** *COLLOIDS AND SURFACES A-PHYSICOCHEMICAL AND ENGINEERING ASPECTS*
  Es, I., Ok, M., Puentes-Martinez, X. E., Szymanski de Toledo, M., de Pinho Favaro, M., Cavalcanti, L., Cassago, A., Portugal, R., Azzoni, A., de la Torre, L.
  2018; 555: 280-289

- **Structure and kinetics assays of recombinant Schistosoma mansoni dihydrofolate reductase.** *Acta tropica*
  Serrão, V. H., Romanello, L., Cassago, A., de Souza, J. R., Cheleski, J., DeMarco, R., Brandão-Neto, J., Pereira, H. D.
  2017; 170: 190-196

- **Schistosoma mansoni displays an adenine phosphoribosyltransferase preferentially expressed in mature female gonads and vitelaria.** *Molecular and biochemical parasitology*
  Zeraik, A. E., Balasco Serrão, V. H., Romanello, L., Torini, J. R., Cassago, A., DeMarco, R., Pereira, H. D.
  2017; 214: 82-86

- **Analysis of two Schistosoma mansoni uridine phosphorylases isoforms suggests the emergence of a protein with a non-canonical function.** *Biochimie*
  da Silva Neto, A. M., Torini de Souza, J. R., Romanello, L., Cassago, A., Serrão, V. H., DeMarco, R., Brandão-Neto, J., Garratt, R. C., Pereira, H. D.
  2016; 125: 12-22

- **Structure and Mechanism of Dimer-Monomer Transition of a Plant Poly(A)-Binding Protein upon RNA Interaction: Insights into Its Poly(A) Tail Assembly.** *Journal of molecular biology*
  Domingues, M. N., Sforça, M. L., Soprano, A. S., Lee, J., de Souza, T. d., Cassago, A., Portugal, R. V., de Mattos Zeri, A. C., Murakami, M. T., Sadanandom, A., de Oliveira, P. S., Benedetti, C. E.
  2015; 427 (15): 2491-2506

- **Association between cationic liposomes and low molecular weight hyaluronic acid.** *Langmuir : the ACS journal of surfaces and colloids*
  Gasperini, A. A., Puentes-Martinez, X. E., Balbino, T. A., Rigoletto, T. d., Corrêa, G. d., Cassago, A., Portugal, R. V., de La Torre, L. G., Cavalcanti, L. P.
  2015; 31 (11): 3308-17

- **Functional diversification of cerato-platanins in Moniliophthora perniciosa as seen by differential expression and protein function specialization.** *Molecular plant-microbe interactions : MPMI*
  de O Barsottini, M. R., de Oliveira, J. F., Adamoski, D., Teixeira, P. J., do Prado, P. F., Tiezzi, H. O., Sforça, M. L., Cassago, A., Portugal, R. V., de Oliveira, P. S., de M Zeri, A. C., Dias, S. M., Pereira, et al
  2013; 26 (11): 1281-93

- **Active glutaminase C self-assembles into a supratetrameric oligomer that can be disrupted by an allosteric inhibitor.** *The Journal of biological chemistry*
  Ferreira, A. P., Cassago, A., Gonçalves, K. d., Dias, M. M., Adamoski, D., Ascenção, C. F., Honorato, R. V., de Oliveira, J. F., Ferreira, I. M., Fornezari, C., Bettini, J., Oliveira, P. S., Paes Leme, et al
  2013; 288 (39): 28009-20

- **An efficient protocol for the production of tRNA-free recombinant Selenocysteine Synthase (SELA) from Escherichia coli and its biophysical characterization.** *Protein expression and purification*
  Manzine, L. R., Cassago, A., da Silva, M. T., Thiemann, O. H.
  2013; 88 (1): 80-4

- **Adenosine kinase from Schistosoma mansoni: structural basis for the differential incorporation of nucleoside analogues.** *Acta crystallographica. Section D, Biological crystallography*
  Romanello, L., Bachega, J. F., Cassago, A., Brandão-Neto, J., DeMarco, R., Garratt, R. C., Pereira, H. D.
  2013; 69 (Pt 1): 126-36

- **Mitochondrial localization and structure-based phosphate activation mechanism of Glutaminase C with implications for cancer metabolism.** *Proceedings of the National Academy of Sciences of the United States of America*
  Cassago, A., Ferreira, A. P., Ferreira, I. M., Fornezari, C., Gomes, E. R., Greene, K. S., Pereira, H. M., Garratt, R. C., Dias, S. M., Ambrosio, A. L.
  2012; 109 (4): 1092-7

- **Identification of Leishmania selenoproteins and SECIS element.** *Molecular and biochemical parasitology*
  Cassago, A., Rodrigues, E. M., Prieto, E. L., Gaston, K. W., Alfonzo, J. D., Iribar, M. P., Berry, M. J., Cruz, A. K., Thiemann, O. H.
  2006; 149 (2): 128-34

- **Gene expression profile of human Down syndrome leukocytes** *CROATIAN MEDICAL JOURNAL*
  Malago, W., Sommer, C. A., Andrade, C. D., Soares-Costa, A., Possik, P. A., Cassago, A., Silveira, H. C., Henrique-Silva, F.
  2005; 46 (4): 647-656

- **Cellophane based mini-prep method for DNA extraction from the filamentous fungus Trichoderma reesei.** *BMC microbiology*
  Cassago, A., Panepucci, R., Baião, A., Henrique-Silva, F.
  2002; 2: 14