

Debora Verniz
Curriculum Vitae | Fall 2021

GENERAL INFORMATION

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Professional address: 141, Stanley Hall, Columbia MO. 65201.

EDUCATION

2020. Ph.D.

Architecture (cluster: Design and Computing)

2015-2017. Lisbon School of Architecture (transferred).

2017-2020. The Pennsylvania State University.

Dissertation committee: José Pinto Duarte (advisor), Loukas Kalisperis, Mallika Bose, Esther Obonyo, Luis Mateus (University of Lisbon, Portugal), and Maria Angela Dias (Federal University of Rio de Janeiro, Brazil).

2012. Master of Science

Architecture, Urbanism, and Technology

University of São Paulo (Brazil).

Advisor: Marcio Minto Fabrício.

2009. Bachelor

Architecture and Urbanism

University of São Paulo (Brazil).

PUBLICATIONS

Theses

Verniz, Debora. **2020.** *Understanding the genesis of form in Brazilian informal settlements: towards a grammar-based approach for planning favela-like settlements in steep terrains in Rio de Janeiro.* (Ph.D. dissertation). Pennsylvania State University.

Verniz, Debora. **2012.** *Building industrialization: A case study in hospitals.* (M.S. thesis). University of São Paulo. Verniz, Debora. 2009. *Communitarian center – Jardim Pacaembu.* (Bachelor thesis). University of São Paulo.

Journal Papers

Verniz, Debora; Lima, Fernando T.; Duarte, José P. (**in press**). Decoding and recoding informal settlements in a design studio: an overview of the World Studio Project. *Gestão & Tecnologia de Projetos* (Design Management and Technology). São Carlos, v17, n1, 2022.
<https://doi.org/10.11606/gtp.v17i1.184152>

Oprean, Daniele; Verniz, Debora; Duarte, Jose; Zhao, Jiayang; Wallgrün, Jan Oliver; Baird, Tim and Klippel, Alexander. **2021**. Conceptualizing the remote site visit: Unveiling the Santa Marta informal settlement in Rio through immersive technology. *Landscape Journal*. January 1, 2021 vol. 39 no. 2 31-49. <https://doi.org/10.3368/wplj.39.2>.

Verniz, Debora & Duarte, José P. **2020**. Santa Marta urban grammar: unraveling the spontaneous occupation of Brazilian informal settlements. *Environmental and Planning B: Urban Analytics and City Science*. 0 (0) 1-18 (online first version). DOI: <https://doi.org/10.1177/2399808319897625>

Papers in International Peer Review Conferences

Verniz, Debora; Duarte José P. (**in press**). Assessing Santa Marta: using evaluation tools to inform parametric urban design. *SiGraDI 2021*(conference).

Verniz, Debora; Duarte, José P. **2020**. From analysis to design: a framework to develop synthetic shape grammars. In: Werner, L and Koering, D (eds.), *Anthropologic: Architecture and Fabrication in the cognitive age - Proceedings of the 38th eCAADe Conference - Volume 2*, TU Berlin, Berlin, Germany, 16-18 September 2020, pp. 535-544 http://papers.cumincad.org/cgi-bin/works/Show?ecaade2020_534

Castro e Costa, Eduardo; Verniz, Debora; Varashteh, Siavash; Miller, Marc; Duarte, Jose. **2019**. Implementing the Santa Marta Urban Grammar. A pedagogical tool for design computing in architecture. In: Sousa, JP, Xavier, JP and Castro Henriques, G (eds.), *Architecture in the Age of the 4th Industrial Revolution - Proceedings of the 37th eCAADe and 23rd SIGraDi Conference - Volume 2*, University of Porto, Porto, Portugal, 11-13 September 2019, pp. 349-358 http://papers.cumincad.org/cgi-bin/works/Show?ecaadesigradi2019_146

Verniz, Debora; Oprean, Daniele; Duarte, Jose. **2018**. Understanding the Genesis of Form in Brazilian Informal Settlements: Modelling the Environment as a Preliminary Approach to Design. In: SIGraDi 2018 [*Proceedings of the 22nd Conference of the Iberoamerican Society of Digital Graphics - ISSN: 2318-6968*] Brazil, São Carlos 7 - 9 November 2018, pp. 552-559 http://papers.cumincad.org/cgi-bin/works/Show?sigradi2018_1475

Oprean, Danielle; Verniz, Debora; Zhao, Jiayang; Wallgrün, Jan Oliver; Duarte, José P. and Klippel, Alexander. **2018**. Remote Studio Site Experiences: Investigating the Potential to Develop the Immersive Site Visit. In: T. Fukuda, W. Huang, P. Janssen, K. Crolla, S. Alhadidi (eds.), *Learning, Adapting and Prototyping - Proceedings of the 23rd CAADRIA Conference - Volume 1*, Tsinghua University, Beijing, China, May, 17-19, 2018, pp. 421- 430

Oprean D., Wallgrün J.O., Pinto Duarte J.M., Verniz D., Zhao J., Klippel A. **2018**. Developing and Evaluating VR Field Trips. In: Fogliaroni P., Ballatore A., Clementini E. (eds) *Proceedings of Workshops and Posters at the 13th International Conference on Spatial Information Theory (COSIT 2017)*. COSIT 2017. Lecture Notes in Geoinformation and Cartography. Springer, Cham.

Verniz, Debora; Duarte, Jose. **2017**. Santa Marta Urban Grammar - Towards an understanding of the genesis of form. In: Fioravanti, A, Cursi, S, Elahmar, S, Gargaro, S, Loffreda, G, Novembri, G, Trento, A (eds.), *ShoCK! - Sharing Computational Knowledge! - Proceedings of the 35th*

eCAADe Conference - Volume 2, Sapienza University of Rome, Rome, Italy, September, 20-22, 2017, pp. 477-484 http://papers.cumincad.org/cgi-bin/works/Show?ecaade2017_264

Verniz, Debora; Mateus, Luis; Duarte, Jose; Ferreira, Victor. **2016**. 3D Reconstruction Survey of Complex Informal Settlements. In: Hernejoja, Aulikki; Toni Österlund and Piia Markkanen (eds.), *Complexity & Simplicity - Proceedings of the 34th eCAADe Conference - Volume 2*, University of Oulu, Oulu, Finland, August, 22-26, 2016, pp. 365-370 http://papers.cumincad.org/cgi-bin/works/Show?ecaade2016_110

Verniz Pereira, Debora; Fabricio, Marcio. **2014**. Applying pre-casting and mass customization in the Hospital Escola Municipal de São Carlos. In: *Zero Energy Mass Custom Homes - ZEMCH*, June, 4-6, 2014, Londrina - PR. Proceedings of Zero Energy Mass Custom Homes - ZEMCH.

Verniz Pereira, Debora; Fabricio, Marcio. **2011**. Industrialização das construções: análise de obra hospitalar (Building industrialization: analysis of a hospital construction) In: *Simpósio Brasileiro de Gestão e Economia da Construção - SIBRAGEC*, 2011, Belém-PA. *Simpósio Brasileiro de Gestão e Economia da Construção - SIBRAGEC - Anais*.

Abstracts in International Peer Review Conferences

Verniz, Debora; Dias, Antonio Alves. **2009**. Modelos de estruturas de madeira em casca para coberturas (Wooden shell structure models). In: *XVII Simpósio Internacional de Iniciação Científica - SIICUSP*, 2009, São Carlos.

Verniz, Debora. **2008**. Estudo de estruturas de madeira em casca para coberturas (Studying Wooden shell roofing structures) In: *16^o Simpósio Internacional de Iniciação Científica - SIICUSP*, 2008, São Paulo.

Papers in submission

Santos, Deborah; Verniz, Debora; Pontes, Thiago. 3D printed mask chain: an alternative strategy for respiratory pandemics' prevention. *CAADRIA 2022* (extended abstract submitted on **September, 26th, 2021**)

Verniz, Debora; Duarte José P. Expanded Favela Urban Grammar: a computational framework to plan housing settlements. *IMG Journal – issue05 – Imaging peripheries* (Manuscript accepted, final version submitted on **September 15th, 2021**).

AWARDS AND HONORS

2020

Alumni Association Dissertation Award

This award is considered to be among the most prestigious available to Penn State graduate students and recognizes outstanding achievement in scholarship and professional accomplishment.

2017

J. Henry and Minnie Hitz Memorial Endowment in Architecture

Presented by J. Henry Hitz ('28 B.S. Arch. Engineering) and his wife, Minnie Hitz, to provide program support for the architecture study abroad program and for school projects emphasizing creative design solutions.

GRANTS AND FELLOWSHIPS

2018-2019

Graduate Assistantship. College of Arts and Architecture. Pennsylvania State University.

2015-2018

PhD Grant. National Counsel of Technological and Scientific Development – CNPq, Brazil. Program: Science Without Borders.

2010-2011

Master's Grant. São Paulo Research Foundation (FAPESP).

2010

Master's Grant. Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES).

2008-2009

Scholarship for Undergraduate Researcher. São Paulo Research Foundation (FAPESP).

INVITED TALKS

2020

Verniz, Debora. A framework for urban planning and intervention in Brazilian favelas. *Digital Futures talk Brazil.* September 2021,

2016

Verniz, Debora. Understanding the urban structures of informal settlements: combining techniques of 3D reconstruction and shape grammar. *Institute for Development of New Technologies (UNINOVA), Caparica, Portugal.* April, 21, 2016.

CONFERENCE ACTIVITY AND PARTICIPATION

Conferences/Symposia Organized

Pena, Elena Vazquez; Diarte, Julio; Hadighi, Mahyar; Verniz, Debora; Tebyanian, Nastaran. GRID Symposium. March 20-21, 2019. Stuckeman School, Pennsylvania State University, United States of America.

Castral, Paulo; Vizioli, Simone; Verniz, Debora. Colóquio Internacional: Desenho + Projeto, (Internacional Colloquium: Design+Project) March 20 - 21, 2013. São Carlos School of Engineering, University of São Paulo, Brazil.

Sichieri, Eduvaldo; Pejon, Osni; Verniz, Debora. Terceiro Workshop do PAE no Campus de São Carlos (Third PAE workshop in São Carlos). August 14th, 2013. São Carlos School of Engineering, University of São Paulo, Brazil

Ramalhoso, Wellington; Verniz, Debora; Nogueira, Josiane. Café com Pesquisa, 2011. (Monthly presentation on post-graduate researches during the academic year organized, presented and attended by post-graduate students to discuss their researches). Institute of Architecture and Urbanism, University of São Paulo, Brazil.

Pavesi, Lorenza; Ramalhoso, Wellington; Lukiantchuky, Marieli; Oliveira, Marina; Verniz, Debora. Café com Pesquisa, 2010. (Monthly presentation on post-graduate researches during the academic year organized, presented and attended by post-graduate students to discuss their researches). Institute of Architecture and Urbanism, University of São Paulo, Brazil.

Papers Presented

- Verniz, Debora. From analysis to design: a framework to develop synthetic shape grammars. 38th eCAADe Conference. September, 16-18, 2020.
- Verniz, Debora. Understanding the Genesis of Form in Brazilian Informal Settlements: Modelling the Environment as a Preliminary Approach to Design. XXII Conference of the Iberoamerican Society of Digital Graphics. November, 7-9, 2018.
- Verniz, Debora. Santa Marta Urban Grammar - Towards an understanding of the genesis of form. 35th eCAADe Conference, September, 20-22, 2017.
- Verniz, Debora. 3D Reconstruction Survey of Complex Informal Settlements. 34th eCAADe Conference. August, 22-26, 2016.
- Verniz, Debora. The Brazilian Self-produced City: Santa Marta Slum. Spaces and Flows: Seventh International Conference on Urban and ExtraUrban Studies and the Spaces and Flows knowledge community, November, 10-11, 2016.
- Verniz Pereira, Debora; Fabricio, Marcio. Applying pre-casting and mass customization in the Hospital Escola Municipal de São Carlos. Zero Energy Mass Custom Homes - ZEMCH, June, 4-6, 2014.

TEACHING EXPERIENCE

2021

Assistant Professor. Department of Architectural Studies. College of Arts and Science, University of Missouri. Courses:

Design Studio III (4823-01; 4813-02/4823-02). (Fall 2021, 3rd year)

The goal of this studio is to teach students how to be independent designers and thinkers who can develop, discuss and present their ideas completely and coherently.

2017-2019

Teaching Assistant.

College of Arts and Architecture. Pennsylvania State University. Courses:

The Rio Studio (2017, 2018, 2019). Design studio. Students developed a design intervention in a Brazilian informal settlement.

2014

Adjunct Professor. Centro Universitário de Araras Dr. Edmundo Ulson-UNAR, Araras, Brazil.

Courses:

Environmental Comfort I (2014, 4th year)

Contents: Natural and mechanical ventilation in buildings, natural ventilation in urban environments, proper building insulation according with national normative (NBR15520) for Brazilian regions.

Environmental Comfort II (2014, 4th year)

Contents: Daylighting, lighting design and building acoustics.

Social and Economy Studies (2014, 2nd year)

Contents: The development of informal settlements scenario and affordable housing production in Brazil.

Building Technology II (2014, 3rd year)

Contents: Traditional (Brazilian) building techniques: masonry, reinforced concrete, building installations, roofing materials and techniques. Construction techniques and design detailing.

Building Technology III (2014, 3rd year)

Contents: Building techniques: steel-frame and wooden-frame. BIM. Construction techniques and design detailing.

Final Design Project Prep. (2014, 5th year)

Advising students for the development of their final design projects (*thesis*).

Advisees: Luiza Barboza Pacagnella. *Sustainable Affordable Housing*. Program in Architecture and Urbanism, Centro Universitário de Araras Dr. Edmundo Ulson, Araras, Brazil. December 2014. Role: Advisor. Final Grade: 8.5/10.

Andréa Cristina Bonfim. *Women's Hospital*. Program in Architecture and Urbanism, Centro Universitário de Araras Dr. Edmundo Ulson, Araras, Brazil. December 2014. Role: Advisor. Final Grade: 10/10.

RESEARCH EXPERIENCE

2016-2019

Decoding and recoding informal settlements: using technology to support social integration.

PI: Jose Pinto Duarte Pennsylvania State University 2015–2020 Understanding the genesis of form in Brazilian informal settlements: a grammar-based approach for planning favelas extensions in steep terrains in Rio de Janeiro.

Role: PhD candidate. Advisor: Jose P. Duarte. University of Lisbon (former) and Pennsylvania State University.

2010-2012

Building industrialization: A case study in hospitals.

Role: Master student. Advisor: Marcio M. Fabricio. University of São Paulo, Brazil.

2008-2009

Studying wooden shell structures.

Role: Undergraduate research assistant. Advisor: Antonio A. Dias. University of São Paulo, Brazil.

ACADEMIC SERVICE

2018-2019

GRID – Graduate Research and Innovative Design, Pennsylvania State University.

Role: Secretary. GRID association seeks to provide design research support to undergraduate and graduate students of the College of Arts and Architecture at Penn State.

Bachelor's Thesis Defenses (Committee)

Sustainable Affordable Housing, Luiza Barboza Pacagnella. Program in Architecture and Urbanism, Centro Universitário de Araras Dr. Edmundo Ulson, Araras, Brazil. December 2014.

Women's Hospital, Andréa Cristina Bonfim. Program in Architecture and Urbanism, Centro Universitário de Araras Dr. Edmundo Ulson, Araras, Brazil. December 2014.

Student Housing, Thiago Jorge. Program in Architecture and Urbanism, Centro Universitário de Araras Dr. Edmundo Ulson, Araras, Brazil. December 2014.

Hotel and Conference Centre in Piracicaba, Mariane Zanatta. Program in Architecture and Urbanism, Centro Universitário de Araras Dr. Edmundo Ulson, Araras, Brazil. December 2013.

Equestrian Center, Paloma Barreto Mourão Vetorazzi. Program in Architecture and Urbanism, Centro Universitário de Araras Dr. Edmundo Ulson, Araras, Brazil. December 2013.

Intervention at Zurita Avenue, Fernanda Metzker. Program in Architecture and Urbanism, Centro Universitário de Araras Dr. Edmundo Ulson, Araras, Brazil. December 2013.

Exposition Complex, Marina Romani. Program in Architecture and Urbanism, Centro Universitário de Araras Dr. Edmundo Ulson, Araras, Brazil. December 2013.

Urban mobility plan, Paulo Roberto Moraes Severino. Program in Architecture and Urbanism, Centro Universitário de Araras Dr. Edmundo Ulson, Araras, Brazil. December 2013.

COMMUNITY INVOLVMENT/OUTREACH

2018-2019

LAGRASA – Latin American Graduate Student Association, The Pennsylvania State University. Role: Secretary. LAGRASA is a graduate student association that promotes the Latin American culture and identity in Penn State's community.

MEDIA COVERAGE

Frances Jones. **2021**. "Rocinha 3D". Revista FAPESP. September 14th 2021.
<https://revistapesquisa.fapesp.br/rocinha-em-tres-dimensoes/>

Belkin, Douglas. **2018**. "At Penn State, Field Trips Go Virtual. As more scholars adopt virtual reality, students can visit an ancient Mayan village or an inside of a volcano". The Wall Street Journal. November, 21, 2018. <https://www.wsj.com/articles/at-penn-state-field-trips-go-virtual1542796201?mod=searchresults&page=1&pos=3>

Mortice, Zach. **2017**. "Favela Real". Landscape Architecture Magazine. December, 12, 2017.
<https://landscapearchitecturemagazine.org/2017/12/12/favela-real/>

Pacchioli, David. **2017**. "Flying down to Rio. Students use digital technology to explore design solutions for Brazilian favela". Penn State News. September, 05, 2017.
<https://news.psu.edu/story/479590/2017/09/05/research/flying-down-rio>

RELATED PROFESSIONAL SKILLS

Phyton Script

AutoCad
Rinoceros (including digital fabrication)
Grasshopper 3D
ArcGIS
QGIS 3D scanning and photogrammetry techniques (including softwares: Visual SFM, MeshLab, Photoscan, and Pix4D)
Adobe Creative (Photoshop, Indesign, Illustrator, and Premiere)
Microsoft Office (Word, Excell, Powerpoint, etc.)

NON-ACADEMIC WORK

IN THE FIELD

2009-2010

Architectural Internship/ Junior Architect
Gisele Terra Lustre Office (Brazil)

ADMINISTRATIVE

2011-2015

Administrative Staff.

University of Sao Paulo, Sao Paulo (Brazil). Role: International Relations Advisor. Stablishing cooperation with graduate and undergraduate programs to celebrate academic agreements for student exchanges and professional internships.

2010-2012

Administrative staff.

GTP – Gestão & Tecnologias de Projetos (Design Management and Technology) [ISSN 1981- 1543]
Role: responsible to receive submissions, forward them to peer reviewers, format accepted papers to proper layout, attribute the DOI number, and finish the journal publication in an OJS system.

TEACHING AREAS, COURSES PREPARED TO TEACH

Design Computing courses
Construction Technologies
Design studios

LANGUAGES

Portuguese (native)
English (professional work)
Spanish (limited)
Italian (elementary)
French (elementary)

PROFESSIONAL MEMBERSHIPS OR AFFILIATION

2014-Present

CAU/BR – Conselho de Arquitetura e Urbanismo do Brasil (Brazilian Council of Architecture and Urbanism)