

# Siobhan Francois Rockcastle

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## EDUCATION

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2013-2017

**Ecole Polytechnique Fédérale de Lausanne, PhD**

Thesis: Perceptual Dynamics of Daylight in Architecture

Director: Marilynne Andersen

School of Architecture, ENAC, Lausanne, Switzerland [Special Distinction for Thesis]

2009-2011

**Massachusetts Institute of Technology, SMArchS, Building Technology**

Thesis: Daylight Variability and Contrast-Driven Architectural Effect

Advisors: Marilynne Andersen, Terry Knight & Sheila Kennedy

SA+P, Cambridge, MA [SMArchS Thesis Award]

2003-2008

**Cornell University, B.Arch**

Thesis: Pig's Eye Park, Reoccupying the Dump

Advisors: Kevin Pratt & Leyre Asensio Villoria

AAP, Ithaca, NY [Alpha Rho Chi Bronze Medal]

## ACADEMIC POSITIONS

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2018 - current

**University of Oregon, Assistant Professor of Architecture**

Frederik C. Baker Chair, Director of the Baker Lighting Lab, IHBE Founding Partner

Courses Taught:

Human Centric Environments, Undergraduate & Graduate Technical Elective (3-4 credits)

This advanced technical elective offered an introduction to the use of experimental design to conduct field and lab experiments on the effects of environmental conditions on perception.

A Celebration of Light, course taught with James Carpenter (1 credit)

This one-credit course explored topics of lighting phenomena and visual perception in the Pacific Northwest. Students built and documented a large-scale lighting intervention over the course of 3 days.

Advanced Research Methods, Required for Doctoral Program (4 credits)

This course introduces advanced research methods through the lens of scientific writing, peer review, and the development of a comprehensive research proposal.

Architectural Design, 2nd<sup>d</sup> Year Core Undergraduate Studio (6 credits)

This studio is taught every spring to the 2nd year undergraduate architecture students and covers topics related to the integration of tectonic, programmatic, and site systems. Our program varies between building in a landscape and building in an urban context.

Architectural Design, Vertical Graduate/Undergraduate Studio (6 credits)

This studio, titled 'Oregon Museum of Climate Science,' asked students to propose a participatory museum for the display of exhibitions related to climate science in the McKenzie Watershed in Oregon.

Electric Lighting, Undergraduate & Graduate, required for IARC Program (3-4 credits)

This course introduces the fundamentals of electric lighting, from source selection to luminaire and integrated lighting design.

Virtual Lighting Design, Undergraduate & Graduate Technical Elective (4 credits)  
This course introduces software and methods for rendering immersive lighting designs in Virtual Reality. Critiques are completed in VR to create an immersive perceptual experience.

2017

**Ecole Polytechnique Fédérale de Lausanne**, *Post Doctoral Assistant*

Position funded by the Velux Stiftung Foundation

Researching the added value of human-centric daylight performance assessments during the architectural design process.

2013 – 2016

**Ecole Polytechnique Fédérale de Lausanne**, *Doctoral Assistant*

Courses Taught:

Architecture and Sustainability: Critical Approaches, Doctoral Level (2 credits)

Participated in the planning of lecture content, readings, and projects and lectured on case-study analysis and historical contexts for environmental performance evaluation.

Solar Decathlon Summer Workshop, Master Level (6 credits)

Led a team of 6 students in the documentation and analysis of case-study projects, supervised the early-stage design of concepts for EPFLs upcoming 2017 competition entry and lectured on daylight integration in architecture.

Space and Light: The Lighting Project, Master Level (4 credits)

Lectured on daylight performance software and led workshops in geometrical modelling and integration of performance evaluation software.

2011 – 2012

**Northeastern University**, *Teaching Fellow & Visiting Assistant Professor*

Courses Taught:

Architecture & Energy Systems, Bachelor Level (3 credits)

Independently planned and taught the required course for professional accreditation and lectured on architectural lighting, HVAC, acoustics, passive design, and energy management.

Comprehensive Design Studio, Bachelor Level (6 credits)

Coordinated 6 adjunct faculty (across 6 sections, composed of 70 students in total), led curriculum development for the terminal Bachelor-level studios, and independently taught a section of 13 students. This course integrated technical lecture-based courses and promote the integration of structural, mechanical, constructive, and passive performance strategies.

Daylight Design Seminar, Master Level (3 credits)

Independently taught 12 master students advanced techniques in daylight modelling, simulation, and visualization to encourage a reiterative design process for sustainable lighting design.

2009 - 2010

**Massachusetts Institute of Technology**, *Teaching Assistant*

Courses Taught:

Comprehensive Design Studio, Master Level (6 credits)

Assisted instruction with Professors Andrew Scott, Sheila Kennedy & Cristina Parreño and introduced the use of environmental simulation software to teach digital modelling and energy/lighting evaluation.

2009 - 2010

**Massachusetts Institute of Technology & Sekusui House**, *Research Assistant*

Funded Project:

Sustainable Housing Prototypes for development in 2050, Tama, Japan

Worked in a team to study on ecological and economic structure of future housing in Tama New Town. This work resulted in the publication of “*re: New Town: Adaptive Urbanism & the Low-Carbon Community*” by Eran Ben Joseph and Andrew Scott.

2005 - 2009

**Cornell University**, *Teaching Associate*

Courses Taught:

Undergraduate Design Studios 101 & 102 (6 credits)

Co-taught 65 undergraduate first year architecture students alongside 5 full-time teaching assistants under the supervision of Professors Vincent Mulcahy and Alex Mergold.

Summer College Introduction to Architectural Design Studio

Taught one section of 14 high school seniors in a 6-week intensive summer workshop under the supervision of Professors Vincent Mulcahy and Alex Mergold.

## PROFESSIONAL POSITIONS

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2018 - current

**OCULIGHT dynamics**, Lausanne, Switzerland

*Co-Founder & Director of Design*

- Daylight Matrix for WeWork, New York, New York
- Graoni Beach House, Montalba Architects, California
- Smart Living Lab for the Building 2050 Group, Fribourg, Switzerland
- Sevelin 15 for Realstone Group, Lausanne, Switzerland
- Campus at Les Saignoles for Audemars Piguet, Switzerland
- Campus at Les Brassus for Audemars Piguet, Switzerland
- Schuco Headquarters with GXN, Germany

2014 - 2017

**Independent Daylight Design Consultant**, Lausanne, Switzerland

- Campus Expansion, Ecole Hôtelière de Lausanne, Lausanne, Switzerland
- Bugaboo Corporate Headquarters, MSR Architecture, Amsterdam, Netherlands
- Automata Pavilion, TEN x TEN, Chicago, Illinois
- Fribourg Master Plan Competition, DEVspace, Fribourg [**Honorable Mention**]

2011 - 2013

**Kennedy & Violich Architecture**, Boston, MA

*Designer & Project Manager (April 2012 – January 2013)*

- Minneapolis Riverfront Development Initiative, Minneapolis, MN
- Sunlight Delivery Fixtures for 3M Architectural Markets, Minneapolis, MN
- Bending Wood Vault for the Beaver Country Day School, Boston, MA

*Design Consultant (February 2011 – September 2011)*

- Solar-Powered Soft Rockers for MIT's 150<sup>th</sup> Anniversary, Cambridge, MA
- Sunlight Luminaires for 3M Architectural Markets, Minneapolis, MN
- Tozzer Library Renovation, Cambridge, MA

2010

**Snøhetta**, New York, NY

*Intern Architect (May - August)*

- Ryerson Univ. Student Learning Center, Toronto [**Award of Excellence**]
- SFMOMA Competition, San Francisco, CA

2009

**Epiphyte Lab**, Ithaca, NY

*Intern Architect (January - May)*

- HSU Residence Ithaca, NY

2004 - 2008

**MSR Architecture**, Minneapolis, MN & Hyattsville, MD

*Intern Architect (Intermittent)*

- Urban Outfitters Corporate HQ Philadelphia, PA
- Farragut Street Row Homes, Hyattsville, MD

2005 – 2007

**Cornell Solar Decathlon Team**, Ithaca, NY & Washington D.C.

*Architecture Team Co-Leader*

- Concept through construction for Cornell's 2007 entry in the U.S. Department of Energy sponsored Solar Decathlon, exhibited (10/2007) on the National Mall in Washington, D.C.

2003

**Gensler**, New York, NY

*Intern Architect (May - August)*

- Thornton Tomasetti Offices, New York, NY

## PUBLICATIONS

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### Books

2013

**Rockcastle S.**, Andersen M., *Annual Dynamics of Daylight Variability and Contrast: A Simulation-Based Approach to Quantifying Visual Effects in Architecture*, Springer Brief in Computer Science, London, 2013. [<http://infoscience.epfl.ch/record/181819>]

2011

Research Assistant & Contributor, A. Scott & E. Ben-Joseph. *re: New Town: Adaptive Urbanism & the Low-Carbon Community*, Routledge, New York, 2011.

### Invited Book Chapters

2019

**Rockcastle, S.**, "Lamps, Luminaires, and Controls" Chapter 15 in *Mechanical and Electrical Equipment for Buildings*, 13<sup>th</sup> Edition, pp. 699 – 758 by Walter Grondzik and Alison Kwok, Hoboken: Wiley, 2019.

### Peer Reviewed Journal Papers

2017

Ámundadóttir M.L., **Rockcastle S.**, Sarey Khanie M., Andersen M., *A Human-Centric Approach to Assess Daylight for Non-Visual Health Potential, Visual Interest and Gaze Behavior*, Building & Environment, vol 113, February, 2017. [<https://infoscience.epfl.ch/record/221590?ln=en>]

2016

**Rockcastle S.**, Ámundadóttir M.L., Andersen M., *A Comparison of Contrast-Based Measures for Predicting Perceptual Effects of Daylight in Architectural Renderings*, Lighting Research and Technology (published online first, April 15, 2016). [<https://infoscience.epfl.ch/record/217503>]

2014

**Rockcastle S.**, Andersen M., *Measuring the Dynamics of Contrast and Light Variability in Architecture: A Proof of Concept Methodology*, Building and Environment, vol 81, November 2014, 320-333. [<http://infoscience.epfl.ch/record/199718>]

### Peer Reviewed Abstracts

2020

Danell, M., Mahic, A., Davis, B., Van Den Wymelenberg, K., **Rockcastle S.**, *Comparing LED Lighting Perceptions between Real and Virtual Scenes*. 5th CIE Expert Symposium on Colour and Visual Appearance, Hong Kong, April 20-24, 2020 [submitted].

### Peer Reviewed Conference Papers

2019

**Rockcastle S.**, Ámundadóttir M.L., Andersen M., *The case for occupant-centric daylight analytics: a comparison of horizontal illuminance and immersive view*. Proceedings of IBPSA 2019 conference, Rome, Sept. 2-4, 2019.

- 2018 **Rockcastle S.**, Ámundadóttir M.L., Andersen M., *OCUVIS: A web-based visualizer for simulated daylight performance in buildings*. SimAUD - Symposium on Simulation for Architecture and Urban Design, Delft, June 4-7, 2018.
- 2017 **Rockcastle S.**, Ámundadóttir M.L., Andersen M., *An Experiment in Virtual Reality to Measure Daylight Driven Interest in Rendered Architectural Scenes*, Proceedings of IBPSA 2017 conference, San Francisco, August 7-9, 2017. [<https://infoscience.epfl.ch/record/227407?ln=en>]
- 2017 **Rockcastle S.**, Chamilothon K., Andersen M., *A Simulation-Based Workflow to Assess Human-Centric Daylight Performance*, SimAUD - Symposium on Simulation for Architecture and Urban Design, Toronto, May 22-24, 2017. [<https://infoscience.epfl.ch/record/227406>]
- 2016 **Rockcastle S.**, Ámundadóttir M.L., Andersen M., *Predicting Visual Interest in Daylit Architectural Renderings: An Experimental Simulation-Based Approach*, SimAUD 2016 - Symposium on Simulation for Architecture and Urban Design, London, May 14-16, 2016. [<http://infoscience.epfl.ch/record/215977>]
- 2016 Pastore L., Rastogi P., **Rockcastle S.**, Monari H., Rueff G., Andersen M., *Assessing the impact of contemporary urbanization on bioclimatic features of historic architecture through a two-step simulation process*, PLEA 2016 - Symposium on Passive and Low Energy Architecture, Los Angeles, July 11-13, 2016 [<https://infoscience.epfl.ch/record/218598>]
- 2015 **Rockcastle S.**, Andersen M., *Human Perceptions of Daylight Composition in Architecture: A Preliminary Study to Compare Quantitative contrast Measures with Subjective User Assessments in HDR Renderings*, Proceedings of IBPSA 2015 International Building Performance Simulation Association conference, Hyderabad, India, December 7 – 9, 2015. [<http://infoscience.epfl.ch/record/209191>]
- 2013 Andersen M., Guillemin A., Amundadottir M. & **Rockcastle S.**, *Beyond illumination: An interactive simulation framework for non-visual and perceptual aspects of daylighting performance*, Proceedings of IBPSA 2013 – International Building Performance Simulation Association conference, Chambéry, France, August 26-30, 2013. [<http://infoscience.epfl.ch/record/188744>]
- 2013 **Rockcastle S.**, Andersen M., *Celebrating Contrast & Daylight Variability in Contemporary Architectural Design: A Typological Approach*, Proceeding to LUX EUROPA, Krakow, September 17-19, 2013. [<http://infoscience.epfl.ch/record/186396>]
- 2012 **Rockcastle S.**, Andersen M., *Dynamic Annual Metrics for Contrast in Daylit Architecture*, Proceedings of SimAUD 2012, Orlando, March 26-30, 2012. [<http://infoscience.epfl.ch/record/175191>] [Best Paper Award].
- White Papers
- 2019 Ward P., **Rockcastle S.**, Klein J., Van Den Wymelenberg K. *The Impact of Lighting and Views on The Workplace of The Future*. Published online August 12, 2019. [<https://buildhealth.uoregon.edu/2019/08/12/university-of-oregon-publishes-white-paper-on-light-views-and-the-workplace-experience/>]

### Edited Conference Proceedings

2019 (General Chair and Editor\*) **Rockcastle S.**, Rakha T., Cerezo Davila C., Papanikolau D., Zakula T. (Eds.). *SimAUD 2019 Proceedings*, Society for Modelling & Simulation, April 7-9, Georgia Tech, Atlanta.

*\*As the general chair for 2019, I assumed the role of primary editor for these proceedings; overseeing reviewers with the Scientific Chairs, communicating revisions with authors, editing and organizing the final manuscripts, and providing the preface. All papers are ACM archived and a paper copy is currently being prepared for purchase on Lulu.*

2018 (Scientific Chair and Editor\*\*) Rakha T., Turrin M., Macumber D., Meggers F., **Rockcastle S.** (Eds.). *SimAUD 2018 Proceedings*, Society for Modelling & Simulation, June 4-7, TU Delft, Delft.

*\*\*As a Scientific Chair and Editor of the Proceedings for 2018, I worked in a team of three to manage reviewers, collect revised manuscripts, and coordinate session topics with the General and Program Chairs. All papers are ACM archived and a paper copy is available on Lulu.*

### Sponsored Project Reports

2019 PDX Airport Visual Comfort Study, Report #1 issued to ZGF Architects, **Rockcastle S.**, Mahic A., and Van Den Wymelenberg K., September 2019.

2018 Knight Campus, University of Oregon, Daylighting and Glare report #1 & #2 issued to Ennead, Bora Architects, and UO CPFM, **Rockcastle S.**, Mahic A., Nezamdoost A., Van Den Wymelenberg K., February (Report #1) & March (Report #2) 2018.

## AWARDS & FELLOWSHIPS

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2019 *2<sup>nd</sup> Place in FAIA Latrobe Prize, Recognized by the Jury, FAIA, Denver*

2018 *2<sup>nd</sup> Prize for OCULIGHT dynamics, 'LePrix StartUp Durable', Les Temps, Switzerland*

2018 *Special Distinction for PhD Thesis, Recognized by the Doctoral School, EPFL*

2015 *Honorable Mention, Fribourg urban design competition, Fribourg*

2013 *Architizer A+ Finalist, Architecture & Learning, Soft Rocker, KVA matX*

2013 *Architizer A+ Special Mention, Architecture & Fab, Beaver Wood Vault, KVA*

2012 *Best Paper Award, SimAUD 2012 conference, Orlando*

2011-2012 *Teaching Fellowship, full-time visiting assistant prof., School of Arch., Northeastern*

2011 *SMArchS Thesis Prize, for 'Daylight Variability and Contrast-Driven Arch. Effect,' MIT*

2011 *Award of Excellence, Ryerson SLC, Snøhetta, Canadian Architect*

2010 - 2011 *Samuel A. Marx Fellowship, full tuition award for outstanding scholastic merit, MIT*

2010 *Holcim Forum Student Poster Selection, for 'channels for learning', MIT*

2008 *Alpha Rho Chi Bronze Medal, for leadership and professional merit, Cornell*

2008-2009 *Robert James Eidlitz Traveling Fellowship, energy infrastructure Iceland, Cornell*

2007 *Lifecycle Building Challenge, Hon. Mention C. Lambur, K. Pratt & D. Cupkova, Cornell*

2007 *AIA NYS Student Design Award, for 'growing Gibraltar,' Cornell*

2004 *First Place Baird Prize, for 'pop-up cinema' in 1<sup>st</sup> year design competition, Cornell*

## GRANTS & SPONSORED PROJECTS (151,000 since joining UO in 1/2018)

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2019 ZGF Visual Comfort Study, \$26,000 to analyze shading systems for a confidential project in Portland, University of Oregon [PI]

2019 PNNL Research Grant, \$75,000 to support a pilot study comparing perceptions of electric light in real and virtual environments, subaward from DOE SSL, University of Oregon [PI]

2018	<i>Lutron White Paper</i> , \$10,000 to develop a white paper on daylight and views in the workplace, University of Oregon [Co-PI]
2018	<i>Knight Campus Visual Comfort Analysis</i> , \$25,000 of internal funds to analyze exterior glazing for glare risk, University of Oregon [Co-PI]
2018	<i>Nuckolls Fund Grant</i> , \$20,000 to develop a new course on ‘Virtual Lighting Design,’ University of Oregon [PI]
2017- 2018	<i>InnoSeed Venture Grant</i> , 26,000 CHF for OCULIGHT web interface, EPFL, Lausanne [PI]
2017	<i>InnoSeed Explorer Grant</i> , 20,000 CHF for OCULIGHT web interface, EPFL, Lausanne [PI]
2013 - 2018	<i>Velux Stiftung Research Fellowship</i> , 350,000 CHF to support Doctoral and Post-Doc, EPFL, Lausanne [Key-Personnel]

## BOARDS & COMMITTEES

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2019-current	<b>Tenure-Track Search Committee</b> , Department of Archit., University of Oregon
2018-current	<b>PhD Committee</b> , Department of Architecture, University of Oregon
2018-current	<b>Equity &amp; Inclusion Committee</b> , College of Design, University of Oregon
2019	<b>Places Oregon Prize Selection Committee</b> , University of Oregon, Eugene
2018-2019	<b>John Reynolds Symposium: Education by Design</b> , Organizing Committee, Eugene
2018-2019	<b>General Chair of Organizing Committee</b> , SimAUD 2019 Conference, Atlanta
2018-current	<b>Board Member</b> , SimAUD Steering Committee
2018	<b>Cavin Travelling Fellowship Selection Committee</b> , Cal Poly, Pomona
2017-18	<b>Scientific Chair of Organizing Committee</b> , SimAUD 2018 Conference, Delft
2017-18	<b>Scientific Committee Member</b> , ACADIA
2015, 2016-17	<b>Scientific Committee Member</b> , SimAUD 2015, 2016, 2017
2018-2019	<b>Communications &amp; Recruitment Committee</b> , College of Design, Univ. of Oregon
2018	<b>Scholarship Committee</b> , Society of Building Science Educators

## EXHIBITIONS & ANIMATIONS

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2015	<i>The Dynamics of Shadow: Architecture of Natural Light in Extreme Latitudes</i> , Animation for the ‘Dynamics of Darkness in the North’, Reykjavik, Iceland
2012	<i>Dynamic Daylight</i> , Department of Archit., Northeastern University, Boston, MA
2011	<i>Cloud Canopy</i> , Kennedy & Violich Architecture & 3M, Saint Paul, MN
2011	<i>Soft Rockers</i> , Kennedy & Violich Architecture & MIT, Cambridge, MA

## INVITED LECTURES, WORKSHOPS, & PUBLIC PRESENTATIONS

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2019	<i>Current Trends in Daylighting</i> , Lecture w/ Kevin Van Den Wymelenberg at Pacific Gas & Electric (PG&E), San Francisco.
2019	<i>Putting the Design Back into Daylighting Design</i> , Workshop w/ Kevin Van Den Wymelenberg at Pacific Gas & Electric (PG&E), San Francisco.
2019	<i>Lighting Perception in VR</i> , DOE LED R&D Annual Meeting, Washington D.C
2019	<i>Human-Centric Daylight Performance</i> , MIT Spring Lecture Series, Boston
2019	<i>Virtual Lighting Design</i> , IHBE Industry Consortium Symposium, Portland
2019	<i>Science Pub Eugene</i> , OMSI, Eugene
2019	<i>Human-Centric Lighting</i> , SRG Architects, Portland
2018	<i>Designing Health in the Built Environment</i> , w/ Kevin Van Den Wymelenberg at Oregon Institute of Occupational Health at OHSU, Portland
2018	<i>Public Lecture Series</i> , Cal Poly Pomona Spring Lecture Series, Pomona

2018 *Simulating Circadian Lighting Workshop, SimAUD 2018, Delft*  
2018 *Invited Presentation, TVA Architects, Portland*  
2017 *Human-Centric Lighting Workshop, SimAUD 2017, Toronto*  
2017 *Virtual Lighting Workshop, Velux Symposium, Berlin*  
2016 *Invited Keynote, Transsolar Research Days, Frankfurt*  
2016 *Research Presentation, NBBG, San Francisco*  
2016 *Public Lecture Series, Royal Danish Academy of Fine Art, CITA, Copenhagen*  
2015 *Presentation of Doctoral Work, Velux Academic Forum, London*  
2015 *Invited Lecture, MSR Design, Minneapolis*

## THESIS COMMITTEES

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*PhD Theses*  
2019 Sadiqa Al Awadh, Comprehensive Exam Committee Chair, University of Oregon

*Master Theses*  
2019 Denise Blankenberger, Impact of wood on human thermal perception of transient and steady state indoor environments, Master of Science in Architecture, University of Oregon (Thesis Committee)