

Curriculum Vitae

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PERSONAL DATA

Name: Alessandra Angelucci

Birth Place: Rome, Italy

Citizenships: Italian & USA

BUSINESS ADDRESS

Department of Ophthalmology & Visual Science, Moran Eye Institute, University of Utah
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CONTACT INFORMATION

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LAB WEBSITE

www.alessandraangelucci.com

EDUCATION

1990	M.D.	University of Rome “La Sapienza” (Medicine), Italy Grade: 110/110 cum laude
1996	Ph.D.	Massachusetts Institute of Technology (Neuroscience), Cambridge, MA, USA

BOARD CERTIFICATIONS

Date Certified (04/1990) Agency: Italian “Esame di Stato”

PROFESSIONAL EXPERIENCE

Full Time Positions

1990 - 1996	Graduate student (laboratory of Prof. Mriganka Sur) Department of Brain & Cognitive Sciences, MIT (USA)
1997 - 2000	Post-doctoral Fellow (laboratory of Prof. Jennifer S. Lund) Institute of Ophthalmology, University College London (UK)
2000 - 2001	Royal Society Research Fellow

Institute of Ophthalmology, University College London (UK)
(self-terminated in August 2001 upon acceptance of a faculty position at the Univ. of Utah)

- 2001 - 2007 Tenure-track Assistant Professor
Department of Ophthalmology, Moran Eye Center, University of Utah.
- 2003 - 2008 Adjunct Assistant Professor
Department of Bioengineering, University of Utah.
- 2008 – present Associate Professor with Tenure
Department of Ophthalmology, Moran Eye Center, University of Utah.
and
Adjunct Associate Professor
Department of Bioengineering, University of Utah.
- 2014-present Professor with Tenure
Department of Ophthalmology, Moran Eye Institute, University of Utah.
- 2018-2023 Mary H. Boesche Endowed Professor in Ophthalmology & Visual Science,
University of Utah.
- 2023-present Mary H. Boesche Endowed Chair in Ophthalmology & Visual Science,
University of Utah.

Editorial Experience

- 2007 - present Editorial Board Member for *Visual Neuroscience*
- 2007 - 2019 Review Editor for *Frontiers in Systems Neuroscience*
- 2008 - present Review Editor for *Frontiers in Neuroanatomy*
- 2014 Lead Guest Editor, Special Issue for *Vision Research* on “The function of contextual modulation”
- 2015 Lead Guest Editor, Special Issue for *Visual Neuroscience* on “Controversies in extrastriate cortex mapping”
- 2019-present Associate Editor for *Frontiers in Systems Neuroscience*
- 2020 Lead Guest Editor, Special Issue for *Frontiers in Systems Neuroscience* and *Frontiers in Neural Circuits* on “Feed-forward and Feed-back Processing in the Cerebral Cortex: Connectivity and Function”.
- 2021-present Editorial Board Member for *Vision*
- 2022-present Associate Editor for *Visual Neuroscience*
- 2023 Section Editor for “The Cerebral Cortex and Thalamus”, Eds., M.Shermann and M. Usrey, Oxford University Press. Editor of Section “Inter-areal Cortico-cortical Communication”.

Reviewer Experience (past 10 years)

Referee for BioMed Central Neuroscience
Referee for Brain Research
Referee for Brain Structure and Function
Referee for Cell
Referee for Cerebral Cortex

Referee for Current Biology
 Referee for eLife
 Referee for European Journal of Neuroscience
 Referee for Frontiers in Neuroscience
 Referee for Journal of Chemical Neuroanatomy
 Referee for Journal of Comparative Neurology
 Referee for Journal of Neurophysiology
 Referee for Journal of Neuroscience
 Referee for Journal of Neuroscience Methods
 Referee for Journal of Physiology
 Referee for Journal of Vision
 Referee for Nature journals
 Referee for Neuroimage
 Referee for Neuron
 Referee for Philosophical Transactions: B
 Referee for Physiology & Behavior
 Referee for PLOS Computational Biology
 Referee for PNAS
 Referee for Science
 Referee for Science Translational Medicine
 Referee for Vision Research
 Referee for Visual Neuroscience

HONORS

1990 - 1994 Graduate Fellowship to study at MIT. Winner of national competition. Awarded by the International School for Advanced Studies, Trieste, Italy
 2000 - 2005 Career Development Award, The Royal Society University Research Fellowships, London, UK
 2001 - present Honorary Senior Lectureship
 Dept of Optometry and Neuroscience, University of Manchester, UK
 2018-2023 Mary H. Boesche Endowed Professorship in Ophthalmology & Visual Science. University of Utah
 2023-present Mary H. Boesche Endowed Chair in Ophthalmology & Visual Science. University of Utah

ADMINISTRATIVE EXPERIENCE

Administrative Duties

2001 - 2006 Library Committee, Dept. of Ophthalmology, University of Utah
 2002 - 2015 Departmental Distinguished Speaker Seminar Series Committee, Dept. of Ophthalmology, University of Utah
 2003 – 2011, 2018- present Graduate Admission Committee, Interdepartmental PhD Program in Neuroscience, University of Utah
 2006 IACUC Committee, University of Utah

2006 - present	CAARI Committee, VP for research office, University of Utah
2007	Task Force for the Protection and Support of Faculty and Staff Engaged in Research, VP for research, University of Utah
2007 – 2012	Curriculum Committee, Interdepartmental PhD Program in Neuroscience, University of Utah
2016-2017	Co-Chair, Departmental Hiring Committee Dept. of Ophthalmology, University of Utah
2016-2017	Faculty Mentor, Grant Writing Academy University of Utah
2017-present	Neuroscience Initiative Scientific Steering Committee University of Utah
2017-present	Faculty Mentor, first year Graduate Students, Neuroscience Program University of Utah
2021-2023	Departmental Hiring Committee Dept. of Ophthalmology, University of Utah

Grant Review Committee/Study Sections/Steering Committees

I) International

2002 - 2007	Ad hoc reviewer, Medical Research Council, UK
2004, 2006-2008	Ad hoc reviewer, Wellcome Trust, UK
2009	Ad hoc reviewer, Netherland Organization for Scientific research (NOW), Netherlands
2010	Ad hoc reviewer, Israel Science Foundation, Israel
2010 - 2012	Ad hoc reviewer, Human Frontiers Science Program (HFSP)
2012	Ad hoc reviewer, European Commission, 7th Framework Programme for Research
2013	Ad hoc reviewer, French National Research Agency (ANR)

II) National

1999, 2004, 2009, 2010, 2014, 2015, 2017	Mail Reviewer, NSF, USA
2005 - 2006	Panel Reviewer, NIH, NRSA Fellowship, Sensory Motor and Cognitive Neuroscience, Special Emphasis Panel/Scientific Review Group ZRG1 F02B
2006, 2009	Panel Reviewer, NSF, DIOB Proposal Review Panel for Animal Sensation Movement, Environmental and Structural Systems Cluster.

2012, 2013 *Ad Hoc* Panel Reviewer, **NIH**, SPC study section.

2013 Panel Reviewer, **NIH** special emphasis panel ZRG1- SPC-T

2014 Panel Reviewer, **NSF**, DIOS, Activation 1, Neural Systems Cluster

2014-2020 Standing Member, **NIH**, Sensory Perceptual Cognitive review study section.

2020 Panel Reviewer, **NIH**, special emphasis panel 2021/01 ZGM1-RCB-W (NP)- “SCORE” Program.

2021 Panel Reviewer, **NIH BRAIN Initiative**, U19 Brain Circuits Program.

2021 Steering Committee Member, **NIH BRAIN Initiative: Marmoset Colonies for Neuroscience Research**

2021 Panel Reviewer, **NIH BRAIN Initiative**, UG3/UH3 Development of Novel Tools to Probe Cell-specific and Circuit-specific Processes in Human and Non-Human Primate Brain.

2023 Panel Reviewer, **NIH BRAIN Initiative: RFA-NS-21-026 R01** (“New technologies and novel approaches for recording and modulation in the nervous system) and **RFA-NS-21-027 U01** (Optimization of transformative technologies for recording and modulation in the nervous system)

2023-2027 Standing Member, **NIH**, Neurological Sciences and Disorders D Study Section (NSD-D)

Symposium/Meeting Chair/Coordinator

09/09-10/2005 Workshop Organizer and Chair
 “The functional architecture of primary visual cortex”
Utah Brain Institute, University of Utah, Salt Lake City UT, USA

04/23-27/2007 Workshop Co-Organizer and Co-Chair
 “Information processing in the visual system”
 Mathematical Biology Institute
Ohio State University, Columbus OH, USA.

08/27-31/2007 Scientific Board Member
Annual European Conference on Visual Perception (ECVP), Arezzo, Italy.

11/07/2007 Minisymposium Chair and Speaker

“Mechanisms and functions of visual signals from beyond the classical receptive field in primary visual cortex”

Society for Neuroscience Meeting, San Diego CA, USA.

11/04/2007

Nanosymposium Chair

“From V1 to V4: Studies in Primates”

Society for Neuroscience Meeting, San Diego CA, USA.

11/5/2018

Marmoset Social Chair

Society for Neuroscience Meeting, San Diego, CA, USA.

ACTIVE MEMBERSHIPS IN PROFESSIONAL SOCIETIES

1994 - present

Member, Society for Neuroscience, USA

1997 - present

Member, British Neuroscience Association, UK

2007 - present

Member, American Physiological Society, USA

FUNDING HISTORY

Active Grants

09/01/2018 - 08/31/2022 IOS 1755431

In NCE until 8/2024

“Functional properties and computational function of top-down feedback in early visual cortex: an optogenetic investigation”.

Total: \$ 750,000. Yearly Direct Costs: \$165,000

National Science Foundation

Role: PI (Bressloff co-PI)

09/01/2020-08/31/2025

1 R01 EY031959-02

“Connectivity and function of inhibitory neurons in the primate visual cortex”.

Total: \$2,287,542. Yearly Direct Costs: \$326,000

NIH/NEI

Role: PI

03/01/2021-02/28/2026

2 R01 EY026812-05....9

“Anatomical and functional organization of inter-areal feedback circuits in the visual cortex, and their impact on neuronal responses”.

Total: \$2,746,570. Yearly Direct Costs: \$356,269

NIH/NEI

Role: PI

03/01/2023-08/31/2025

1 R01 EY031959-02 Supplement

“Connectivity and function of inhibitory neurons in the primate visual cortex”.

Total: \$90,000

Role: PI

08/2023-07/2026 1 R42 MH135529 SBIR
“High density chronic optogenetic interface for primate brains”
Total: \$3,271,297. Yearly Direct Costs: \$790,000
NIH/NIMH BRAIN Initiative
Role: multi-PI (Negi, Blair, Angelucci, Mathieson, Reith)

05/2023 “Retinal and cortical remodeling in a primate model of glaucoma:
novel molecular and functional approaches to neuroprotection and
early diagnosis”
Total: \$400,000.
University of Utah Mini-initiative Program Grant
Role: PI.

Pending Grants

04/01/2024-03/31/2029 UG3 MH133036
“Integrated optogenetic device and viral tools for the study of
interareal circuit function in the non-human primate brain”
Total: \$6,230,189 4Yearly Direct Costs: \$921,658
NIH/NIMH BRAIN Initiative
Role: multi-PI (Blair, Angelucci, Noudoost)

04/01/2024-03/31/2027 1 U01 NS136229
“Identifying the functional circuitry and computational principles
underlying feedback-induced coherent oscillations”
Total: \$3,804,179. Yearly Direct Costs: \$839,197.
NIH/NINDS Brain Initiative
Role: multi-PI (Noudoost, Angelucci, Bressloff)
Resubmission planned: June 2023

Past Grants

10/01/00 - 9/30/05 516002.K501/KAW/kk
“Anatomical circuits mediating integration of information in
monkey visual cortex”
The Royal Society University Research Fellowships (career
development fellowship)
The Royal Society (UK)
Role: PI

10/31/00 - 11/01/05 Program Grant 061113
“Exploration of the modular organization of the cerebral cortex”,
Wellcome Trust (UK)
Role: Co-Investigator

04/01/04 - 03/31/05	<p>Funding Incentive Seed Grant PID 2401189 “Brain circuits for visual perception” Yearly Direct Costs: \$35,000 University of Utah Research Foundation Role: <u>PI</u></p>
03/15/04 - 02/28/07	<p>IBN- 0344569 “Cortical circuits for classical and extra-classical receptive field interactions in visual cortex” Yearly Direct Costs: \$90,460 National Science Foundation Role: <u>PI</u></p>
12/01/05 - 11/30/08	<p>F32 EY015609 “Organization of striate and extrastriate visual areas” (funding for one postdoctoral fellow, Dr Jennifer Ichida) Yearly Direct Costs: \$45,000 NIH/NEI Role: <u>Project Executive</u></p>
08/01/04 - 05/31/10	<p>1R01 EY015262-06 “Neural substrates for contextual integration” Yearly Direct Costs: \$250,000 NIH/NEI Role: <u>PI</u></p>
08/01/04 - 05/31/10	<p>1 R01 EY015262-Supplement “Neural substrates for contextual integration” Total direct Costs: \$ 57,800 NIH/NEI Role: <u>PI</u></p>
04/01/05 - 03/31/10	<p>P30 EY014800 “Core grant for vision research” NIH/NEI Role: <u>Module Director</u></p>
09/30/09 - 08/31/11	<p>Challenge Grant No. 1RC1 NS069152-02 “A computational framework for mapping long range genetic circuits.” Yearly Direct Costs: \$330,000 NIH/NIMH Role: <u>Co-investigator</u> (PI: Julie Korenberg)</p>
03/01/09 - 02/29/12	<p>IOS-0848106 -03 “Contextual effects in primary visual cortex: pathways and mechanisms”</p>

Yearly Direct Costs: \$82,000
National Science Foundation
Role: PI

08/01/09 - 09/30/12

1 R01 EY019743-03
“Parallel pathways in visual cortex: functional connectivity of output pathways from area V1 to area V2.”
Yearly Direct Costs: \$250,000
NIH/NEI
Role: PI

01/01/12 - 12/31/2012

Funding Incentive Seed Grant PID 51003499
“Connectomics of feedback circuits in the macaque visual cortex”.
Yearly Direct Costs: \$28,000
University of Utah Research foundation
Role: PI

08/01/12 - 07/31/14

1R21 EY02275-01
“A novel approach for mapping single-cell long-range connections in the cerebral cortex”.
Yearly Direct Costs: \$137,500
NIH/NEI
Role: PI

03/17/14-07/31/14

RO1 EY019743S
“Equipment Supplement to R01”
Yearly Direct Costs: \$38,500
NIH/NEI
Role: PI

09/05/14-07/31/14

RO1 EY019743S
“Supplement to R01”
Yearly Direct Costs: \$143,000

08/01/13-08/31/16

2 RO1 EY019743-04....06
“Parallel pathways in visual cortex: functional connectivity of output pathways from area V1 to area V2.”
Yearly Direct Costs: \$250,000
NIH/NEI
Role: PI

01/01/2016-12/31/2016

Seed Grant VP_00001595
“Functional specialization of V1 output pathways to V2: a 2-photon imaging study of the non-human primate visual cortex.”
Yearly Direct Costs: \$17,500
University of Utah Research Foundation

09/01/14-08/31/18 Role: PI
 IOS 1355075
 “Computation of visual context information in the primary visual cortex”
 Yearly Direct Costs: \$135,000
National Science Foundation
 Role: PI

05/01/2016-09/30/2018
 Seed Grant
 “Towards the non-human primate connectome: computational approaches and software development”.
 Yearly Direct Costs: \$100,000
University of Utah Neuroscience Initiative: Innovative Approaches to Neural Circuits.
 Role: PI

10/01/2016-09/31/2019
 EAGER 1649923
 “Brain Comp Infra: EAGER: A scalable solution for processing high resolution brain connectomics data”.
 Yearly Direct Costs: \$100,000
National Science Foundation, BRAIN Initiative
 Role: multi-PI (Angelucci, Pascucci)

03/01/2016-02/28/2021
 1 R01 EY026812-01...05
 “Anatomical and functional organization of inter-areal feedback circuits in the visual cortex, and their impact on neuronal responses”.
 Yearly Direct Costs: \$306,000.
NIH/NEI
 Role: PI

09/01/2016-08/31/2020
 1 U01 NS099702 BRAIN
 “Development of an integrated array for simultaneous optogenetic stimulation and electrical recording to study cortical circuit function in the non-human primate brain”.
 Total: \$2,370,355. Yearly Direct Costs: \$700,000
NIH/NINDS BRAIN Initiative
 Role: multi-PI (Angelucci, Blair, Reith)

09/19/2016-02/28/2021
 3 R01 EY026812-01S1
 Equipment Supplement to parent R01
 Total: \$110,000
NIH/NEI
 Role: PI

09/01/2018- 08/31/2021
 1K99 EY029374

“ Function of feedback connections in visual perception”

NIH

Role: Primary mentor (PI: postdoc Nurminen)

Total: \$292,625. Yearly direct costs: \$90,000.

01/01/2017-12/31/2021

3 R01 EY019743-07...10

“Parallel pathways in visual cortex: functional connectivity of output pathways from area V1 to area V2.”

Total: \$1,520,625. Yearly Direct Costs: \$250,00

NIH/NEI

Role: PI

09/30/2018-12/31/2020

In NCE until 12/31/21

R01EY019743-08S1

Equipment Supplement to parent R01 (for purchase of a 2P imaging microscope)

Total: \$140,000

NIH/NEI

Role: PI

TEACHING

Course Lectures

- 1991, 1995 **Introduction to Psychology** (undergraduate course)
Teaching Assistant
Department of Brain & Cognitive Sciences, Massachusetts Inst. of Technology
- 1993 **Neuroscience and Behavior** (undergraduate course)
Teaching Assistant
Department of Brain & Cognitive Sciences, Massachusetts Inst. of Technology
- 1998 - 1999 **Regional Architecture and Main Pathways of the CNS** (MRCOphth Revision Course for MDs)
Lecturer
Institute of Ophthalmology, University College London (UK)
- 2001 - 2016 **Frontiers in Neuroscience** (graduate course # NEUSC 6010)
Contributing Lecturer
Interdepartmental PhD Program in Neuroscience, University of Utah
Annual course for PhD students.
- 2002, 2007, 2016 **Bioengineering Rotations** (graduate course)
Laboratory rotation supervisor
Dept. of Bioengineering, College of Engineering, University of Utah
Supervised 3 graduate students for one semester each
- 2003, 2004, 2007, 2009-2011, 2014, 2015 **Neuroscience Rotations** (graduate course #NEUSC 6900)
Laboratory rotation supervisor
Interdepartmental Program in Neuroscience, University of Utah
One-semester laboratory rotation for neuroscience students.

- Supervised 8 graduate students for one semester each
- 2005 **Molecular Biology Rotations** (graduate course # MBIOL 7960)
Laboratory rotation supervisor
Interdepartmental Molecular Biology Program, University of Utah
One-semester laboratory rotation for molecular biology students.
Supervised 1 graduate students for one semester
- 2006, 2008 **MD/PhD Program Rotations**
Laboratory rotation supervisor
MD/PhD Program, University of Utah
One-semester laboratory rotation for MD/PhD students.
Supervised 2 MD/PhD students for one semester
- 2005 - present **Systems Neuroscience** (graduate course #NEUSC 6050/BIOEN 6430)
Lecturer on Visual Neuroscience
Interdepartmental Program in Neuroscience, and Department of
Bioengineering, University of Utah
Annual course for neuroscience and bioengineering students.
- 2005 **Research Ethics** (graduate course #UGS 6570/PHIL 7570)
Contributing Lecturer
Interdepartmental Program in Neuroscience, and Dep. of Philosophy,
University of Utah
Annual course for students of biomedical sciences
- 2007 – present **Visual Neuroscience** (graduate course #NEUSC 6100)
Contributing Lecturer
Interdepartmental PhD Program in Neuroscience, University of Utah
Bi-Annual course for neuroscience students.
- 2008 **Digital Image Processing** (graduate course #ECE 6962)
Contributing Lecturer
Dept. of Computer Science, University of Utah
Annual course for neuroscience, bioengineering and computer science
students.
- 2011, 2015 **Advances in Vision Research** (graduate course #NEUSC 6500)
Contributing Lecturer
Interdepartmental PhD Program in Neuroscience, University of Utah
Annual course for neuroscience, bioengineering and pharmaceutical science
students.

Students Supervised (Tot 10 Graduate, 19 Undergraduate)

Graduate

- 2002 - 2009 **Janelle Jeffs**, *PhD student*, Dept. of Bioengineering, University of Utah
Currently: Assistant Prof. Westminster College, Salt Lake City, Utah.
- 2004 - 2010 **Frederick Federer**, *PhD student*, Neuroscience Program, University of Utah
Currently: Research Scientist & Lab Manager, Moran Eye Institute, University
of Utah

- 2005 - 2010 **S. Shushruth**, *PhD student*, Neuroscience Program, University of Utah
Currently: Assistant Prof., Dept of Neuroscience, Univ. of Pittsburgh, USA.
- 2007 – 2010 **Pradeep Mangapathy**, *Master's student*, Dept. of Bioengineering, University of Utah. Currently: Patent Engineer IP Professional, GE Global Research.
- 2010 - 2013 **Salil Pendse**, *Masters student*, Dept. of Bioengineering, University of Utah. Graduated March 2013. Currently: Scientist II, ScitoVation, Raleigh-Durham, North Carolina.
- 2010 – 2016 **Jeff Yarch**, *PhD student*, Neuroscience Program, University of Utah. Currently: Scientific Writer, Medica and Scientific Affairs, Illumina, San Diego, CA.
- 2011 – 2016 **Maryam Bijanzadeh**, *PhD student*, Neuroscience Program, Univ. of Utah. Currently: Machine Learning Scientist, iRhythm Technologies, San Francisco, CA.
- 2017-2019 **Seminare Ta'afua**, *Master's student*, Dept. Biomedical Engineering, Univ. of Utah. Currently: Data Specialist, Centriply, New York, NY.
- 2019- present **Don Cundy**, *PhD student*, Dept. of Biomedical Engineering, Univ. of Utah.
- 2023-present **Amin Vafa**, *PhD student*, Neuroscience Program, University of Utah.
- 2023-present **Jenna Crouse**, *PhD student*, Dept. Biomedical Engineering, Univ. of Utah.

Undergraduate

- 2009 - 2013 **Delaney Williams**, Biology, Univ. of Utah.
Currently: Research Assistant, University of Utah Hospitals and Clinics, Salt Lake City, Utah.
- 2010 – 2013 **Mitchell Barneck**, Bioengineering, University of Utah. Currently: MD-PhD student, Oregon Health and Science University, Portland, Oregon.
- 2011 – 2014 **Marcus Chen**, *BA in Psychology 2011*, Research Assistant, University of Utah. Currently: Middle school science teacher, Sandy, UT.
- 2012 **Christina Cottrell**, Bioengineering, University of Utah.
- 2014-2015 **Anja Higgins**, Bioengineering, University of Utah.
Currently: PhD student at UCSD.
- 2014-2017 **Hanna Larsen**, Biology, University of Utah.
Currently: Law school student, University of Utah.
- 2014-2015 **Michael Fiedel**, Computer Science, University of Utah.
Currently: Software Engineer, WildWorks, Utah.
- 2015-2019 **Anny Pham**, Medical Sciences, University of Utah.
Currently: Medical Technologist, IDbyDNA, Salt Lake City, UT.
- 2016-2019 **Trent Evans**, Bioengineering, University of Utah.

2017-2020 **Currently: Sales & Fulfilment Specialist, Ripple LL, Salt Lake City, UT.**
Gabriella Rasmussen, Anatomy & Physiology, University of Utah.
 Currently: Medical School student, Univ. of Utah.

2017-2018 **Sarah Vranes**, Bioengineering, University of Utah.

2018-2019 **Matthew Spurrier**, Biology, University of Utah.

2018-2022 **Al Ingold**, Biomedical Engineering, Univ. Utah.

2019-present **Porter Babcock**, Science, Health, Society & Policy, University of Utah

2022-present **Brenda Lee**, Biomedical Engineering, University of Utah

2022-present **Sakthivel Jayakumar**, Biomedical Engineering, University of Utah

2023-present **Collin Winebrenner**, Psychology, University of Utah

2023-present **Dylan Johnson**, Biology, University of Utah

Postdoctoral Fellows Supervised (12)

2003 - 2012 **Jennifer Ichida.**
 Awarded an NIH NRSA postdoctoral fellowship (2005-2008).
 Currently: Scientific writer for Teva Pharmaceuticals, Salt Lake City, UT.

2004 – 2005 **Zongxiang Tang.**
 Currently: Professor, Nanjing University (China).

2005-2006 **Lars Schwabe.**
 2009- 2014 Assistant Prof., Univ. of Rostock (Germany).
 Currently: Associate Director for Smart Data Analytics, Big Data Technology and Data Insight Lab, Lufthansa Industry Solutions, Hamburg, Germany.

2009 **Janelle Jeffs.**
 Currently: School science teacher, Salt Lake City, Utah.

2010 – 2017 **Sam Merlin.**
 Currently: Assistant Prof., Western Sydney Univ., Sydney, Australia.

2010 - present **Frederick Federer.**
 Currently: Research Scientist and Lab Manager, Moran Eye Institute, University of Utah.

2013- 2021 **Lauri Nurminen.**
 Currently: Assistant Professor, University of Houston, TX.

2017-2018 **Jeff Yarch.**
 Currently: Scientific Writer, Medica and Scientific Affairs, Illumina, San Diego, CA.

2017-2021 **Caitlin Siu**, *Postdoctoral Fellow*, Dept. of Ophthalmology, Univ. of Utah.
 Currently: Neuroscience Instructor, McMaster University, Toronto, Ontario, Canada.

2017-2022 **Andrew Clark**, *Postdoctoral Fellow*, Dept. of Ophthalmology, Univ. of Utah.
 Currently: Research Assistant Prof., Dept of Ophthalmology, Univ. of Utah.

2017-present

- 2018-2021 **Mahlega Hassanpour**, *Postdoctoral Fellow*, Dept. of Ophthalmology, Univ. of Utah.
- Justin Balsor**, *Postdoctoral Fellow*, Dept. of Ophthalmology, Univ. of Utah.
Currently: Scientific Liason, BenchSci, Toronto, Ontario, Canada

Graduate Student Committees (national and international)

- 2005 Committee Member, David Warren, Ph.D., Thesis title: "Examination of the organization and plasticity of primary visual cortex with multielectrode arrays", Dept. of Bioengineering, Univ. of Utah.
- 2005 Committee Member, Stefanos Folias, Ph.D., Thesis title: "Stimulus-induced waves and breathers in excitable neural media", Dept. of Mathematics, Univ. of Utah.
- 2006 Committee Member, Andrew Oster, Ph.D., Thesis title: "Mathematical models of cortical development", Dept. of Mathematics, Univ. of Utah.
- 2007 External Reviewer, Leo Lui, Ph.D., Thesis title: " Functional response properties of neurones in motion processing areas of marmoset monkey visual cortex", Dept of Physiology, Monash University, Australia.
- 2008 Committee Member, William Nesse, Ph.D., Dept. of Mathematics, Univ. of Utah.
- 2009 External Reviewer, Roy Sujata, Ph.D., University of Melbourne, Australia.
- 2010 Committee Member, Zachary Kilpatrick, Ph.D., Dept. of Mathematics, Univ. of Utah.
- 2011 Committee Member, Kian Torab, Ph.D., Dept. of Bioengineering, Univ. of Utah.
- 2011 Committee Member, Andrew Zayachivsky, Ph.D., Neuroscience Program, Univ. of Utah.
- 2012 Committee Member, Rebecca Parker, Ph.D., Neuroscience Program, Univ. of Utah.
- 2012 Committee Member, Jeremy Wilkerson, Ph.D., Neuroscience Program, Univ. of Utah.
- 2012 Committee Member, Tyler Davis, Ph.D., Dept. of Bioengineering, Univ. of Utah.
- 2013 Committee Member, Rebecca Pfeiffer, Ph.D., Neuroscience Program, Univ. of Utah.
- 2014 Committee Member, Patrick Parker, Ph.D., Neuroscience Program, Univ. of Utah.
- 2014 Committee Member, Andrew Moran, Ph.D., Neuroscience Program, Univ. of Utah.
- 2015 Committee Member, Samuel Carroll, PhD, Mathematics Department, Univ. of Utah.
- 2017 Committee Member, Avery Tye Gardner, PhD Elect & Comp Engineering, U. Utah.
- 2019 Committee Member, Aniketh Venkat, PhD, Dept Computer Science, U. Utah.
- 2020 Committee Member, Kenneth Richard Hubbard, PhD, Dept. of Bioengineering, Univ. of Utah.
- 2021 Committee Member, Phillip Comeaux, PhD, Dept of Biomedical Engineering, Univ. of Utah.
- 2022 External Reviewer, Yujie Hou, PhD, Universite' de Lyon, France.

ORAL PRESENTATIONS

Keynote/Plenary Lectures

International

- 1998 **A. Angelucci**. "Rewiring the brain: role of afferents and targets in the generation of specific and patterned connections".
Symposium on "Plasticity after lesions to the visual system".
18th European Winter Conference on Brain Research, Les Arc, France.

- 2000 **A. Angelucci.** “Anatomical scale and patterning of intra-areal lateral connections and extrastriate feedback connections within area V1 of macaque monkey: relationships to physiologically measured classical receptive fields and surround fields.”
Workshop “Spatial factors in visual cortex function”.
European Neuroscience Meeting, Brighton, UK.
- 2005 **A. Angelucci.** “The contribution of feedforward, lateral and feedback connections to the classical receptive field center and extra-classical receptive field surround of primate V1 neurons”.
Symposium “Recent discoveries on receptive field structure”.
European Conference for Visual Perception (ECVP), La Coruna, Spain.
- 2013 **A. Angelucci.** “Corticocortical connections in the primate visual cortex: structure and function”
Symposium “Neuroscience in non-human primates”
Brazilian Society for Neuroscience Meeting.
- 2017 **A. Angelucci.** “The role of feedback in early visual processing”.
Symposium: “A New World in Vision Research: The Common Marmoset”.
Asia-Pacific Conference on Vision, Tainan City, Taiwan.
- 2021 **A. Angelucci.** “Monosynaptic circuit tracing in the visual cortex of the non-human primate”. **European Conference on:” The future of neuroanatomy is viral: a cross talk between rabies virus users and developers”.** Marseille, France.

National

- 2007 **A. Angelucci.** “The “near” and “far” surround of macaque V1 neurons: the role of feedforward and intracortical connections”.
Minisymposium on “Mechanisms and functions of visual signals from beyond the classical receptive field in primary visual cortex.”
Society for Neuroscience Meeting, San Diego CA, USA
- 2008 **A. Angelucci.** “Contextual effects in primary visual cortex: pathways and mechanisms”.
19th Spring Brain Conference, Palm Spring, CA, USA.
- 2009 **A. Angelucci.** “Contextual effects in primary visual cortex: pathways and mechanisms”.
Workshop: “The role of spatial context in biological and computational vision.”
Cosyne, Salt Lake City, Utah, USA
- 2018 **A. Angelucci.** “Organization and function of feedback connections in early visual processing”.
Minisymposium: “Primate retina and Visual Brain”

ARVO, Honolulu, Hawaii, USA.

- 2020 **A. Angelucci**. “Organization and function of feedback connections in early visual processing”.
Workshop: “Closing the gap between neural networks and the brain: a collaborative effort for bridging computational models and experimental data for visual cognition”.
Cosyne, Breckenridge, Colorado, USA

Invited Meeting Presentations/ Summer Schools

International

- 1999 **A. Angelucci**, “Anatomical scales of intra-areal lateral connections and feedback fields from extrastriate cortex: possible spatial relationships to physiological measures of receptive field size and modulatory field surround”.

Workshop on “Understanding the Visual Cortex”.
Santa Fe Institute, Santa Fe, NM, USA.
- 2004 **A. Angelucci**. “Spatial and functional organization of feedforward and feedback pathways in the primate visual cortex”.
Workshop on: “New perspectives on visual cortex”
Isle of Mull, Scotland, U.K.
- 2004 **A. Angelucci**. “Spatial and functional organization of lateral, feedforward and feedback pathways in the primate visual cortex”.
Workshop on: “From Neuroscience to Phenomenology. Mathematical models of visual perception”
Italian Academy of Science, Bologna, Italy.
- 2006 **A. Angelucci**. “The role of feedback in shaping the extra-classical receptive field of visual cortical neurons: models and experiments”.
Workshop on: “Neuromathematics of vision”.
Scuola Normale Superiore, Pisa, Italy
- 2008 **A. Angelucci**, “The role of feedback in shaping the extra-classical receptive field of visual cortical neurons: models and experiments”.
Workshop on: “Aspects of adaptive cortex dynamics”.
Delmenhorst, Germany.
- 2008, 2010 Invited Lecturer.
2022 *European Summer School on “ Visual Neuroscience: from spikes to awareness”*. **Hessia, Germany.**
- 2019 Invited Speaker

ESI System Neuroscience Conference on “The recurrent cortex: dynamics, feedback, and dimensionality”.
Ernst Strüngmann Institute (ESI) for Neuroscience, and Max Planck Society
Frankfurt, Germany

National

- 2003 **A. Angelucci**, "Anatomical substrates for functional responses of neurons in the primate visual cerebral cortex"
Workshop on: “Inference and prediction in neocortical circuits”.
The Redwood Neuroscience Institute, Palo Alto, CA, USA.
- 2007 **A. Angelucci**, “Cortical circuits for classical and extra-classical receptive field interactions and the role of feedback in the primate visual cortex.”
Workshop on: “Information processing in the visual system”.
Mathematical Biology Institute, Ohio State University, OH, USA.
- 2009 **A. Angelucci**, “Anatomical circuits for classical and extra-classical receptive field interactions in macaque V1”.
Howard Hughes Medical Institute, JFRC Conference on “Computations in Neocortical Circuits: What does the Cortex do?”
Janelia Farm, Ashburn VA, USA
- 2011 **A. Angelucci**. “Circuits for contextual integration in primary visual cortex”
Workshop: “Grand Challenges in Neural Computations II: Neuromimetic processing and Synthetic Cognition”.
Los Alamos International Laboratories, New Mexico, USA
- 2015 **A. Angelucci**. Workshop: “Theory of Neural Computation”. UC Berkeley, Kavli Foundation, MSRI, Redwood Center.
UC Berkeley, CA.
- 2017 **A. Angelucci**
“Marmoset Social”
Soc. For Neurosci. Meeting, Washington DC, USA.
- 2018 **A. Angelucci**. “Organization and function of feedback connections in early visual processing”.
Workshop: “Why does the neocortex have layers and columns?”.
Banbury Center, Cold Spring Harbor Laboratory, USA.
- 2018 Workshop: “The marmoset as a model species for neuroscience”
Boulder, CO, USA.
- 2018 **A. Angelucci**
“Marmoset Social”
Soc. For Neurosci. Meeting, San Diego CA, USA.

2023 **A. Angelucci**
Symposium: “Cortical plasticity and dynamics”. A celebration of Mriganka Sur.
MIT, Dept of Brain and Cognitive Sciences.

Invited/Visiting Professor Presentations

International

1998 University Laboratory of Physiology, **Oxford University**, U.K.
1998 Dept. of Physiology, **National Research Center (CNR)**, Pisa, Italy
1999 Dept. of Mathematics, **University of Chicago**, IL, USA.
2000 Neural Information Processing Group. **Technische Universität Berlin**, Germany.
2000 Centre de Recherche Cervau et Cognition, **CNRS**, Toulouse, France.
2008 Institute of Ophthalmology, **University College London**, UK.
2010 **Netherlands Institute for Neuroscience**, Amsterdam, Netherlands.
2010 Low Temperature Laboratory, **Helsinki University of Technology**, Finland.
2010 Institute of Neuroscience, **University of Newcastle**, U.K.
2010 Dept of Physiology, Anatomy & Genetics, **Oxford University**, UK
2013 Dept. of Morphology, **Autonoma University Medical School**, Madrid, Spain
2015 Dept of Human Physiology, Medical School, **University of Rome “La Sapienza”**, Italy.
2019 Dept of Ophthalmology, **McGill University**, Montreal, Canada.
2019 Friedrich Miescher Institute for Biomedical Research, **University of Basel**, Switzerland.
2019 Cognitive Neuroscience Lab, **German Primate Center (DPZ)**, Frankfurt, Germany.
2019 Centre for Vision Research, VISTA, **York University**, Toronto, Canada.
2023 **Inserm**, Lyon, France

National

2002 **The Smith-Kettlewell Eye Research Institute**, San Francisco CA, USA.
2003 Center for computational biology, Dept. of Cell Biology and Neuroscience, **Montana State University**, Bozeman MN, USA.
2003 The Courant Institute, **New York University**, NY, USA.
2005 Bodian Seminar Series, Brain and Mind Institute, **Johns Hopkins University**, Baltimore MD, USA.
2007 Distinguished Speaker Interdisciplinary Seminar Series, **North Carolina State University**, Raleigh NC, USA.
2009 “Oxyopia” Vision Seminar Series, **UC Berkeley**, CA, USA.
2010 Dept of Neurobiology & Anatomy, **Boston University**, MA, USA.
2013 Dept of Neuroscience, **University of Pennsylvania**, USA
2016 Dept. of Ophthalmology, **University of Pittsburgh**, USA
2016 Dept. of Biological Sciences, **SUNY**, NY, USA
2017 Center for Perceptual Systems, **UT Austin**, USA
2018 Systems Neurobiology Laboratory, **Salk Institute**, CA, USA

2018 Krieger Mind/Brain Institute, **Johns Hopkins University**, USA
 2018 Dept of Neurobiology, **Duke University**, USA.
 2018 Vision Seminar Series, **UCLA**, CA, USA
 2019 Dept of Neurobiology & Anatomy, McGovern Medical School, **UT Houston**, TX, USA
 2019 Dept of Neuroscience, **UT Austin**, TX, USA
 2019 Dept of Ophthalmology, **University of Pittsburgh**, USA.
 2020 Vision Seminar Series, Vision Research Center, **University of Pennsylvania**, USA.
 2020 Dept. Ophthalmology, **Stanford University**, CA, USA.
 2020 Krieger Mind/Brain Institute, **Johns Hopkins University**, USA
 2021 Boynton Colloquium Series, Center for Visual Science, **University of Rochester**, NY, USA
 2023 Dept of Neuroscience, **University of Pennsylvania**, USA

Local/Regional

2000 Dept. of Anatomy and Developmental Biology, **University College London**, U.K.
 2002 Math Biology, Department of Mathematics, **University of Utah**, USA.

CURRENT AND PAST RESEARCH COLLABORATORS

- 1) **Dr. Paul C. Bressloff**, Professor, Dept. of Mathematics, University of Utah, USA
- 2) **Dr. Behrad Noudoost**, Assoc. Prof., Moran Eye Institute, Univ. of Utah.
- 3) **Dr. William Nesse**, Assoc. Prof., Dept. of Mathematics, University of Utah, USA
- 4) **Dr. Qasim Zaidi**, Distinguished Professor, SUNY, NY, USA
- 5) **Dr. Steven Blair**, Professor, Dept of Electrical and Computer Engineering, Univ. of Utah
- 6) **Dr. Loren Reith**, Assoc. Prof., Dept of Mechanical and Aerospace Engineering, West Virginia Univ.
- 7) **Dr. Boris Zemelman**, Assoc. Prof., Dept Neuroscience, UT Austin, Texas, USA
- 8) **Dr. Valerio Pascucci**, Professor, School of Computing and Imaging (SCI) Institute, University of Utah, USA.
- 9) **Dr. Simo Vanni**, Senior Scientist and AMI Center Director, Aalto University, Finland
- 10) **Dr. John Rolston**, Director, MEND Lab, Dept Neurosurgery, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, USA.
- 11) **Dr. Ross Walker**, Assist. Professor, Dept of Electrical and Computer Engineering, University of Utah
- 12) **Dr. Brittany Coats**, Associate Professor, Dept of Mechanical Engineering, Univ. of Utah.
- 13) **Dr John Reynolds**, Professor, Salk Institute, San Diego CA.
- 14) **Dr. Fred Wolf**, Max Planck Institute and University of Göttingen, Germany.

PUBLICATIONS

Peer Reviewed Journal Articles

1. Johnson PB, **Angelucci A**, Ziparo RM, Minciacchi D, Bentivoglio M, Caminiti R. (1989). Segregation and overlap of callosal and association neurons in frontal and parietal cortices of primates: a spectral and coherency analysis. *J Neurosci*, 9: 2313-2326.
2. Clasca F, **Angelucci A**, Sur M. (1995). Layer-specific programs of development in neocortical projection neurons. *Proc Natl Acad Sci U S A*, 92: 11145-11149.
3. **Angelucci A**, Clasca F, Sur M. (1996). Anterograde axonal tracing with the subunit B of cholera toxin: a highly sensitive immunohistochemical protocol for revealing fine axonal morphology in adult and neonatal brains. *J Neurosci Methods*, 65: 101-112.
4. Cramer KS, **Angelucci A**, Hahm JO, Bogdanov MB, Sur M. (1996). A role for nitric oxide in the development of the ferret retinogeniculate projection. *J Neurosci*, 16: 7995-8004.
5. **Angelucci A**, Clasca F, Bricolo E, Cramer KS, Sur M. (1997). Experimentally induced retinal projections to the ferret auditory thalamus: development of clustered eye-specific patterns in a novel target. *J Neurosci*, 17: 2040-2055.
6. **Angelucci A**, Clasca F, Sur M. (1998). Brainstem inputs to the ferret medial geniculate nucleus and the effect of early deafferentation on novel retinal projections to the auditory thalamus. *J Comp Neurol*, 400: 417-439.
7. Sur M, **Angelucci A**, Sharma J. (1999). Rewiring cortex: the role of patterned activity in development and plasticity of neocortical circuits. *J Neurobiol*, 41: 33-43.
8. Sharma J, **Angelucci A**, Sur M. (2000). Induction of visual orientation modules in auditory cortex. *Nature*, 404: 841-847.
9. Parkes L, Lund J, **Angelucci A**, Solomon JA, Morgan M. (2001). Compulsory averaging of crowded orientation signals in human vision. *Nature Neurosci*, 4: 739-744.
10. **Angelucci A**, Levitt JB, Walton EJ, Hupe JM, Bullier J, Lund JS. (2002). Circuits for local and global signal integration in primary visual cortex. *J Neurosci*, 22: 8633-8646.
11. **Angelucci A**, Levitt JB, Lund JS. (2002). Anatomical origins of the classical receptive field and modulatory surround field of single neurons in macaque visual cortical area V1. *Prog Brain Res* 136: 373-88.
12. Lund JS, **Angelucci A**, Bressloff PC. (2003). Anatomical substrates for functional columns in macaque monkey primary visual cortex. *Cereb Cortex*, 13:15-24.
13. **Angelucci A**, Bullier J. (2003). Reaching beyond the classical receptive field of V1 neurons: horizontal or feedback axons? *J Physiol*, 97: 141-154.
14. **Angelucci A**, Sainsbury K. (2006). Contribution of feedforward thalamic afferents and corticogeniculate feedback to the spatial summation area of macaque V1 and LGN. *J Comp Neurol* 498: 330-351.
15. Schwabe L., Obermayer K., **Angelucci A.*** and Bressloff P.C.* (2006). The role of feedback in shaping the extra-classical receptive field of cortical neurons: a recurrent network model. *J Neurosci* 26:9117-9129.

* **A.A. and P.C.B. equal senior author contribution**

16. **Angelucci A.** and Bressloff P.C. (2006). Contribution of feedforward, lateral and feedback connections to the classical receptive field and extra-classical receptive field surround of primate V1 neurons. *Prog. Brain Res.* 154:93-121.
17. Ichida J. M., Schwabe L., Bressloff P.C. and **Angelucci A.** (2007). Response facilitation from the “suppressive” receptive field surround of macaque V1 neurons. *J. Neurophysiol.* 98: 2168-2181.
18. Jeffs J., Ichida J. M., Federer F. and **Angelucci A.** (2009). Anatomical evidence for classical and extra-classical receptive field completion across the discontinuous horizontal meridian representation of primate area V2. *Cerebral Cortex* 19:963-981.
19. Shushruth, Ichida J.M., Levitt J.B. and **Angelucci A.** (2009) Comparison of spatial summation properties of neurons in macaque V1 and V2. *J. Neurophysiol.* 102:2069-2083.
20. Federer F., Ichida J. M., Jeffs J., Schiessl I., McLoughlin N. and **Angelucci A.** (2009) Four projection streams from primate V1 to the cytochrome oxidase stripes of V2. *J. Neurosci.* 29: 15455-15471.
21. Schwabe L., Ichida J.M., Shushruth, Mangapathy P. and **Angelucci A.** (2010). Contrast-dependence of surround suppression in macaque V1: experimental testing of a recurrent network model. *Neuroimage* 52: 777-792.
22. Jeffs J., Federer F., Ichida J. M. and **Angelucci A.** (2013). High-resolution mapping of anatomical connections in marmoset extrastriate cortex reveals a complete representation of the visual field bordering dorsal V2. *Cerebral Cortex.* 23: 1126-1147.
23. Shushruth, Mangapathy P., Ichida J. M., Bressloff P.C., Schwabe L. and **Angelucci A.** (2012). Strong recurrent networks compute the orientation-tuning of surround modulation in the primate primary visual cortex. *J. Neurosci.* 32:308-321.
24. Rosa M., **Angelucci A.** and Pettigrew J.D. (2013). The case for a dorsomedial area (DM) in the primate “third tier” visual cortex. *Proc. Roy. Soc. B.* 280: 20121372.
25. Shushruth S., Nurminen L., Bijanzadeh M., Ichida J.M., Vanni S., and **Angelucci A.** (2013) Different orientation-tuning of near and far surround suppression in macaque primary visual cortex mirrors their tuning in human perception. *J. Neurosci.* 33: 106-119.
26. Federer F., Williams D., Ichida J.M., Merlin S. and **Angelucci A.** (2013) Two projection streams from macaque V1 to the pale cytochrome oxidase stripes of V2. *J. Neurosci.* 33: 11530-11539.
27. Nurminen L. and **Angelucci A.** (2014) Multiple components of surround modulation in primary visual cortex: multiple neural circuits with multiple functions?. *Vision Res.* 104: 47-56.
28. Kingdom FA, **Angelucci A.**, Clifford CW (2014) Special Issue: The function of contextual modulation. *Vision Res.* 104:1-2.

29. Seyedhosseini M., Shushruth S., Davis T., Ichida J.M., Greger B., **Angelucci A.*** and Tasdizen T.* (2015) Informative features of local field potential signals in primary visual cortex during natural image stimulation. *J. Neurophysiol.* 113:1520-1532. ***Equal Contribution.**
30. Jeffs J., Federer F. and **Angelucci A.** (2015) Corticocortical connection patterns reveal two distinct visual cortical areas bordering dorsal V2 in marmoset monkey. *Visual Neurosci.* 32: E012 (pp. 1-24).
31. **Angelucci A.**, and Rosa M. (2015) Resolving the organization of the third tier visual cortex in primates: a hypothesis-based approach. *Visual Neurosci.* 32: E010 (pp. 1-26).
32. **Angelucci A.**, Roe A. W. and Sereno M. I. (2015) Controversial Issues in Visual Cortex Mapping: Extrastriate Cortex between areas V2 and MT in Human and Non-Human Primates. *Visual Neurosci.* 32: E025 (pp. 1-3).
33. Venkat A., Christensen C., Gyulassy A., Summa B., Federer F., **Angelucci A*.** and Pascucci* V. (2016). A scalable cyberinfrastructure for interactive visualization of terascale microscopy data. *NYSData Summit NYSData*: doi: 10.1109/NYSData.2016.7747805 ***Equal Contribution**
34. Yarch J., Federer F. and **Angelucci A.** (2017) Local circuits of V1 layer 4B neurons projecting to V2 thick stripes define distinct cell classes and avoid cytochrome oxidase blobs. *J. Neurosci.* 37:422-436.
35. **Angelucci A.**, Bijanzadeh M., Nurminen L., Federer, F., Merlin S. and Bressloff P.C. (2017) Circuits and mechanisms for surround modulation in visual cortex. *Ann. Rev. Neurosci.* 40: 425-451.
36. Boutte R.W., Merlin S., Yona G., Griffiths B., **Angelucci A.**, Kahn I., Shoham S. and Blair S. (2017). Utah Optrode Array customization using stereotactic brain atlases and 3-D CAD modeling for optogenetic neocortical interrogation in small rodents and nonhuman primates. *Neurophotonics* 4:041502.
37. Petruzza S., Venkat A., Gyulassy A., Scorzelli G., Federer F., **Angelucci A.**, Pascucci V. and Bremer P.T. (2017). ISAVS: Interactive scalable analysis and visualization system. SIGGRAPH ASIA 2017 Symp. Vis. (SA '17), pii: 18. doi: 10.1145/3139295.3139299.
38. Usher W., Klacansky P., Federer F., Bremer P.T., Knoll A., **Angelucci A.**, and Pascucci V. (2018). A virtual reality visualization tool for neuron tracing. *IEEE Trans. Vis. Comput. Graph.* 24: 994-1003.
39. Petruzza S., Venkat A., Gyulassy A., Scorzelli G., Federer F., **Angelucci A.**, Pascucci V. and Bremer P.T. (2018). Scaling big data neuroscience: From interactive analytics to HPC platforms. *Big Data and HPC: Ecosystem and Convergence* 33:53-68. doi: 10.3233/978-1-61499-882-2-53.
40. Nurminen, L., Merlin S., Bijanzadeh M., Federer F. and **Angelucci A.** (2018) Top-down feedback controls spatial summation and response amplitude in primate visual cortex. *Nature Communications* 9:2281.

This article was published in 2016 in *BioRxiv*, doi: <https://doi.org/10.1101/094680>.

41. Bijanzadeh M., Nurminen L., Merlin S., Clark A.M. and **Angelucci A.** (2018). Distinct laminar processing of local and global context in primate primary visual cortex. *Neuron* 100:259-274. Video Abstract at: <https://www.cell.com/cms/10.1016/j.neuron.2018.08.020/attachment/d12dc146-8af4-40a4-a1c4-5e73f6b6b038/mmc3.mp4>
- This article was published in 2017 in *BioRxiv* doi: <https://doi.org/10.1101/171793>.
42. Yarch J., Larsen H., Chen M. and **Angelucci A.** (2019) Morphological cell types projecting from V1 layer 4B to V2 thick and thin stripes. *J. Neurosci.* 39:7501-7512.
43. Vanni S., Hokkanen H., and **Angelucci A.** (2020) Anatomy and physiology of macaque visual cortical areas V1, V2 and V5/MT: bases for biologically realistic models. *Cerebral Cortex*: 30:3483-3517.
44. Tremblay S., Acker L., Afraz A., Albaugh D.L., Amita H., Andrei A.R., **Angelucci A.**,.....Platt M. L. (2020) An open resource for non-human primate optogenetics. *Neuron* 108: 1075-1090 e6. doi:10.1016/j.neuron.2020.09.027.
45. Ho, C.L.A., Zimmermann R., Florez Weidinger J.D., Prsa M., Schottdorf M., Merlin S., Okamoto T., Ikezoe K., Pifferi F., Aujard F., **Angelucci A.**, Wolf F., and Huber D. (2021) Orientation preference maps in *Microcebus murinus* reveal size-invariant design principles in primate visual cortex. *Current Biology* S0960-9822(20)31738-3.
46. McDonald T., Usher, W., Morrical N., Gyulassy A., Petruzza S., Federer F., **Angelucci A.**, and Pasucci V. (2021) Improving the usability of virtual reality neuron tracing with topological elements. *IEEE Trans. Vis Comput Graph*, Oct 15;PP. doi: 10.1109/TVCG.2020.3030363. Epub ahead of print. PMID: 33055032.
47. Federer F., Ta'afua S., Merlin S., Hassanpour M., and **Angelucci A.** (2021) Stream-specific feedback inputs to the primate primary visual cortex. *Nature Communications* 12:228. This article was featured in the Editor's Highlights: <https://www.nature.com/collections/mjkkslsdr>
This article was published in Feb 2020 in *BioRxiv*, doi: <https://doi.org/10.1101/2020.03.04.977264>.
48. Siu C., Balsor J., Merlin S., Federer F., and **Angelucci A.** (2021) A direct interareal feedback-to-feedforward circuit in primate visual cortex. *Nature Communications*. 12:4911. This article was published in 2020 in *BioRxiv*, doi: <https://doi.org/10.1101/2020.07.07.192450>
49. Clark A.M., Ingold A., Reiche C.F., Cundy D., Balsor J.L., Federer F., McAlinden N., Cheng Y., Rolston J.D., Rieth L., Dawson M. D., Mathieson K., Blair S. and Angelucci A. (2022) An Optrode Array for Spatiotemporally Precise Large-Scale Optogenetic Stimulation of Deep Cortical Layers in Non-human Primates. *BioRxiv* doi: <https://doi.org/10.1101/2022.02.09.479779>. *Nature Methods*: Under review of revision 1.

50. Nurminen L., Bijanzadeh M. and **Angelucci A.** (2023) Size tuning of neural response variability in laminar circuits of macaque primary visual cortex. *BioRxiv*
doi: <https://doi.org/10.1101/2023.01.17.524397>. *eLife*: Under review.

Book Chapters

1. **Angelucci A.**, Sharma J, Sur M. (2000). Modifiability of neocortical connections and function during development. In: J. H. Kaas (Ed.), *The Mutable Brain* (pp. 351-392). Hardwood Academic Publishers.
2. **Angelucci A.**, Shushruth S. (2013) Beyond the classical receptive field: surround modulation in primary visual cortex. In: L.M. Chalupa & J.S. Werner (Eds.), *The New Visual Neurosciences*, MIT Press (Cambridge): Chapter 30, pp. 425-444.
3. **Angelucci A.** and Trenholm S. (2022) Processing in the Primary Visual Cortex. In: L.E. Levin (Ed.), *Adler's Physiology of the Eye*, 12/e, Elsevier: In Press.
4. **Angelucci A.** and Petreanu L. (2023) Feedforward and Feedback Connections: Functional Connectivity, Synaptic Physiology and Function. In: M. Sherman and M. Usrey (Eds.), *The Cerebral Cortex and Thalamus*, Oxford University Press: In Press.

Edited Books /Special Journal Editions

1. **Angelucci A, Roe A., Sereno M.** (Eds). Special Edition on "Controversies in extrastriate cortex mapping". Visual Neuroscience, 2015
2. **Kingdom F., Angelucci A., Clifford C.** (Eds). Special Edition on "The Function of Contextual Modulation". Vision Research, 2014.
3. **Lur G., Angelucci A., Zagha E.** (Eds). Special Edition on "Feed-forward and Feed-back Processing in the Cerebral Cortex: Connectivity and Function". Frontiers in Systems Neuroscience and Frontiers in Neural Circuits, 2020.
<https://www.frontiersin.org/research-topics/16270>
<https://www.frontiersin.org/research-topics/16270/feed-forward-and-feed-back-processing-in-the-cerebral-cortex-connectivity-and-function>

PUBLICATIONS IN PREPARATION

1. Hassanpour M., Merlin S., Federer F., and **Angelucci A.** "Orientation organization of feedforward connections from primary visual cortex to V2 in macaque". In preparation for *Nature Neurosci.*
2. Schottdorf M., Merlin S., Liedtk J., Franz J., Keil W., Weidinger J.D.F., Grinvald A., Ikezoe K., Okamoto T., Omer D.B., Xu X., Coppola D., White L.E., **Angelucci A.**¹, and Wolf F.¹ "Evolutionary remodeling of the primate visual cortex". In preparation for *Science*.
¹ **Equal senior author contribution.**
3. Clark A.M., Bijanzadeh M., and **Angelucci A.** "Layer-dependent modulation of gamma-band oscillations by stimulus size in the primate visual cortex". In preparation for *Neuron*.

CONFERENCE PROCEEDINGS

1. Schwabe L., **Angelucci A.**, Bressloff P. and Obermayer K. (2005). A recurrent network model of surround-suppression in the macaque striate cortex mediated by inter-areal and intra-areal interactions. In: K. Kriegelstein and H. Zimmermann, eds, *30th Göttinger Neurobiology Report*.
2. **Angelucci A.** (2005). The contribution of feedforward, lateral and feedback connections to the classical receptive field center and extra-classical receptive field surround of primate V1 neurons. *Perception, Supplement: 29*.

THESES

1. **Angelucci A.** (1990). Spatial relationships of callosal and association neurons in frontal and parietal cortices of monkeys. M.D. thesis, University of Rome "La Sapienza", Italy.
2. **Angelucci A.** (1996). Experimental retinal projections to the ferret auditory thalamus: morphology, development and effects on auditory cortical organization. Ph.D. thesis, Massachusetts Institute of Technology, Cambridge MA, USA.

RECENTLY PUBLISHED ABSTRACTS FOR ORAL OR POSTER PRESENTATION (Last 10 years)

1. **Angelucci A.** (2011). Circuits for contextual integration in primary visual cortex. Workshop: "Grand Challenges in Neural Computation II: Neuromimetic Processing and Synthetic Cognition". Santa Fe, NM, USA.
2. Shushruth, Tasdizen T., Ichida J.M., and **Angelucci A.** (2011) Surround signals in V1 evoked by natural image stimulation carry contrast-independent, image-specific information. Workshop: "Grand Challenges in Neural Computation II: Neuromimetic Processing and Synthetic Cognition". Santa Fe, NM, USA.
3. Shushruth, Davis T., Tasdizen T., Ichida J.M., House P., Greger B., and **Angelucci A.** (2011) LFP signals evoked by natural image stimulation of the far-surround of V1 neurons carry contrast-independent, image-specific information. *Soc. Neurosci. Abstr. Online: 483.11*
4. Seyedhosseini, M., Shushruth, S., Davis, T.S., Greger, B., **Angelucci, A.**, Tasdizen, T. (2011) Identification of novel natural images from LFP signals in V1 predicted by a Gabor wavelet pyramid model. *Soc. Neurosci. Abstr. Online*.
5. Merlin, S., Ichida, J. M., Federer, F, Pendse, S., Schwabe, L., Schiessl, I., **Angelucci, A.** (2011). Orientation-organization of feedforward connections from V1 to V2 stripe types. *Soc. Neurosci. Abstr. Online: 271.01*.
6. Federer, F, Williams, D., Ichida, J. M., Merlin, S., **Angelucci, A.** (2011). Distinct outputs from layer 4B of macaque V1 to the pale cytochrome oxidase stripes of V2. *Soc. Neurosci. Abstr. Online: 175.11*.

7. Bijanzadeh M., Shushruth S., Ichida J.M. and **Angelucci A.** (2012) Laminar differences in orientation tuning of near and far surround suppression in the macaque primary visual cortex. *Soc. Neurosci. Abstr. Online*: 571.19.
8. Ichida J.M., Federer F., Barneck M.D., Williams D., Yarch J., Merlin S. and **Angelucci A.** (2012) Cell types projecting from macaque V1 to V2 cytochrome oxidase stripes. *Soc. Neurosci. Abstr. Online*: 568.01.
9. Merlin S., Ichida JM, Federer F., Schiessl I., **Angelucci A.** (2012) Systematic relationship between cytochrome oxidase (CO) blobs, orientation singularities and dendritic spines in macaque V1. *Soc. Neurosci. Abstr. Online*: 568.02.
10. Yarch J.T., Barneck M.D., Merlin S., Ichida J.M., Federer F., **Angelucci A.** (2012) Local circuit contributions of identified V1 to V2 feedforward cells. *Soc. Neurosci. Abstr. Online*: 568.03.
11. Bijanzadeh, M., Ichida J.M., Merlin S., **Angelucci A.** (2013) Visual stimulus-evoked laminar patterns of V1 neuron activity reveal specialized circuits for receptive field, near and far surround. *Soc. Neurosci. Abstr. Online*: 638.13.
12. Yarch J.T., Chen M., Merlin S., Ichida J.M., Federer F., Cottrell C., Callaway E.M., **Angelucci A.** (2013) Distinct classes of V1 layer 4B neurons projecting to V2 thick stripes in macaque. *Soc. Neurosci. Abstr. Online*: 638.14.
13. Bijanzadeh M., Nurminen L., Ichida J., Merlin S., Miller K., **Angelucci A.** (2014) V1 laminar-specific activity patterns evoked by receptive field, near and far surround stimulation. *Cosyne Abstracts Online*: 239.
14. Christensen C., Federer F., Gooch A., Merlin S., Pascucci V., **Angelucci A.** (2015) Large Scale Imaging and 3D Visualization of Long-Range Circuits in CLARITY-Treated Primate Visual Cortex. *Soc. Neurosci. Abstr. Online*:598.19.
15. Federer F, Merlin S., **Angelucci A.** (2015) Anatomical and functional specificity of V2-to-V1 feedback circuits in the primate visual cortex. *Soc. Neurosci. Abstr. Online*: 699.02.
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