

# Curriculum Vitae

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## **PERSONAL DATA**

Name: Alessandra Angelucci

Birth Place: Rome, Italy

Citizenship: Italian & US

## **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](http://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-present Mary H. Boesche Endowed Professorship 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

### **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 Scientific Reports  
 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

## **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

## Grant Review Committee/Study Sections

### 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 NIH *had hoc* panel member, special emphasis panel ZRG1- SPC-T  
2014 NSF panel member, DIOS, Activation 1, Neural Systems Cluster  
2014-2021 Standing Member, **NIH**, SPC study section.

### 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 <b>Annual European Conference on Visual Perception (ECVP)</b> , 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” <b>Society for Neuroscience Meeting, San Diego CA, USA.</b>
11/04/2007	Nanosymposium Chair “From V1 to V4: Studies in Primates” <b>Society for Neuroscience Meeting, San Diego CA, USA.</b>
11/5/2018	Marmoset Social Chair <b>Society for Neuroscience Meeting, San Diego, CA, USA.</b>

### **ACTIVE MEMBERSHIPS IN PROFESSIONAL SOCIETIES**

1990 - present	Member, Italian Medical Doctors Association, Italy
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**

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: \$292,129 <b>NIH/NEI</b> Role: <u>PI</u>
01/01/2017-12/31/2020	3 R01 EY019743-07...10 “Parallel pathways in visual cortex: functional connectivity of output pathways from area V1 to area V2.” Yearly Direct Costs: \$250,00 <b>NIH/NEI</b> Role: <u>PI</u>
09/01/2016-08/31/2020	1 U01 NS099702-01 BRAIN “Development of an integrated array for simultaneous optogenetic stimulation and electrical recording to study cortical circuit function in the non-human primate brain”. Yearly Direct Costs: \$750,000 <b>NIH/NINDS BRAIN Initiative</b>

Role: multi-PI (Angelucci, Blair, Reith)

- 09/19/2016-02/28/2021 3 R01 EY026812-01S1  
Equipment Supplement to parent R01  
Yearly Direct Costs: \$110,000  
**NIH/NEI**  
Role: PI
- 09/01/2018-08/31/2020 Seed Grant  
“A visual prosthesis for the blind”  
Yearly Direct Costs: \$100,000  
**Moran Eye Institute and Neurology Dept.**  
Role: PI
- 09/01/2018 - 08/31/2022 IOS 1755431  
“Functional properties and computational function of top-down  
feedback in early visual cortex: an optogenetic investigation”.  
Yearly Direct Costs: \$165,000  
**National Science Foundation**  
Role: PI (Bressloff co-PI)
- 09/01/2018- 08/31/2020 1K99 EY029374-01  
In NCE until 8/31/2021 Path Toward an Independent Career Award  
“ Function of feedback connections in visual perception”  
**NIH**  
Role: Primary mentor (PI: Nurminen)
- 09/30/2018-12/31/2020 3R01EY019743-08S1  
Equipment Supplement to parent R01  
Yearly Direct Costs: \$140,000  
**NIH/NEI**  
Role: PI
- 09/01/2020-08/31/2025 1 R01 EY031959-01  
“Connectivity and function of inhibitory neurons in the primate visual  
cortex”.  
Yearly Direct Costs: \$390,000  
**NIH/NEI**  
Role: PI

## **Pending Grants**

- 11/01/2020-10/31/2025 1 R01 EY026812-05....10  
“Anatomical and functional organization of inter-areal feedback  
circuits in the visual cortex, and their impact on neuronal responses”.

Yearly Direct Costs: \$415,425  
**NIH/NEI**  
Role: PI

## 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      Funding Incentive Seed Grant PID 2401189  
“Brain circuits for visual perception”  
Yearly Direct Costs: \$35,000  
**University of Utah Research Foundation**  
Role: PI

03/15/04 - 02/28/07      IBN- 0344569  
“Cortical circuits for classical and extra-classical receptive field interactions in visual cortex”  
Yearly Direct Costs: \$90,460  
**National Science Foundation**  
Role: PI

12/01/05 - 11/30/08      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: Project Executive

08/01/04 - 05/31/10      1R01 EY015262-06  
“Neural substrates for contextual integration”  
Yearly Direct Costs: \$250,000  
**NIH/NEI**  
Role: PI

08/01/04 - 05/31/10      1 R01 EY015262-Supplement  
“Neural substrates for contextual integration”

Total direct Costs: \$ 57,800  
**NIH/NEI**  
Role: PI

04/01/05 - 03/31/10 P30 EY014800  
“Core grant for vision research”  
**NIH/NEI**  
Role: Module Director

09/30/09 - 08/31/11 Challenge Grant No. 1RC1 NS069152-02  
“A computational framework for mapping long range genetic circuits.”  
Yearly Direct Costs: \$330,000  
**NIH/NIMH**  
Role: Co-investigator (PI: Julie Korenberg)

03/01/09 - 02/29/12 IOS-0848106 -03  
“Contextual effects in primary visual cortex: pathways and mechanisms”  
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**

Role: PI

09/01/14-08/31/18

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)

**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 – 2018      **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 9 Graduate, 14 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, Moran Eye Institute, University of Utah
- 2005 - 2010      **S. Shushruth**, *PhD student*, Neuroscience Program, University of Utah  
 Currently: Postdoctoral Associate (Michael Shadlen's lab), Columbia  
 University, NY.
- 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: Postdoctoral Fellow (Angelucci's lab), Univ. of Utah.
- 2011 – 2016      **Maryam Bijanzadeh**, *PhD student*, Neuroscience Program, University of  
 Utah.  
 Currently: Postdoctoral fellow (Ed Chang's lab), UCSF, San Francisco, CA.
- 2017-present     **Seminare Ta'afua**, *PhD student*, Dept. of Bioengineering, Univ. of Utah.
- 2019- present    **Don Cundy**, *PhD student*, Dept. of Bioengineering, Univ. of Utah.

#### Undergraduate

- 2009 - 2013      **Delaney Williams**, *undergraduate student*, Dept. Biology, Univ. of Utah.  
 Currently: Research Assistant, University of Utah Hospitals and Clinics, Salt  
 Lake City, Utah.

- 2010 – 2013 **Mitchell Barneck**, *undergraduate student*, Dept. of 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.
- 2012 **Christina Cottrell**, *undergraduate student*, Dept. of Bioengineering, University of Utah.
- 2014-2015 **Anja Higgins**, *undergraduate student*, Dept. Bioengineering, University of Utah. Currently: PhD student at UCSD.
- 2014-2017 **Hanna Larsen**, *undergraduate student*, Dept. Biology, University of Utah.
- 2014-2015 **Michael Fiedel**, *undergraduate student*, Dept. of Computer Science, University of Utah. Currently: Software Engineer, WildWorks, Utah.
- 2015-present **Anny Pham**, *undergraduate student*, Dept. Biology, University of Utah.
- 2016-present **Trent Evans**, *undergraduate student*, Dept. Bioengineering, University of Utah.
- 2017-present **Gabriella Rasmussen**, *undergraduate student*, Anatomy & Physiology (Major), University of Utah.
- 2017-present **Sarah Vranes**, *undergraduate student*, Dept. Bioengineering, University of Utah.
- 2018-present **Matthew Spurrier**, *undergraduate student*, Dept. Biology, University of Utah.
- 2018-present **Al Ingold**, *undergraduate student*, Dept. Bioengineering, University of Utah.
- 2019-present **Porter Babcock**, *undergraduate student*, Dept. Bioengineering, University of Utah

#### **Postdoctoral Fellows Supervised (13)**

- 2003 - 2012 **Jennifer Ichida**.  
Awarded an NIH NRSA postdoctoral fellowship (2005-2008).  
Currently: Scientific writer for Teva Pharmaceuticals.
- 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: Assistant Prof. Westminster College, 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- present     **Lauri Nurminen.**  
Currently: NIH K99 grant awardee (in 2018).
- 2017-2018         **Jeff Yarch.**  
Currently: researcher in industry.
- 2017-present     **Caitlin Siu, *Postdoctoral Fellow*,** Dept. of Ophthalmology, Univ. of Utah.
- 2017-present     **Andrew Clark, *Postdoctoral Fellow*,** Dept. of Ophthalmology, Univ. of Utah.
- 2017-present     **Mahlega Hassanpour, *Postdoctoral Fellow*,** Dept. of Ophthalmology, Univ. of Utah.
- 2018-present     **Justin Balsor, *Postdoctoral Fellow*,** Dept. of Ophthalmology, Univ. of Utah.
- 2020-             **Daniel Gramm Kristensen, *Postdoctoral Fellow*,** Dept. of Ophthalmology, Univ. of Utah. To start Aug 2020.

#### **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 Zayachkivsky, 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.

## **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.

#### **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”.  
**19<sup>th</sup> 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.  
*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.**

### **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.

#### 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 Krieger Mind/Brain Institute, **Johns Hopkins University**, USA
- 2021 Boynton Colloquim Series, Center for Visual Science, **University of Rochester**, NY, 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 RESEARCH COLLABORATORS

- 1) **Prof. Paul C. Bressloff**, Dept. of Mathematics, University of Utah, USA
- 2) **Prof. Julie Korenberg**, USTAR Professor, Utah Brain Institute, University of Utah, Salt Lake City, UT, USA.
- 3) **Dr. Steven Blair**, Professor, Dept of Electrical and Computer Engineering, University of Utah
- 4) **Dr. Valerio Pascucci**, Professor, School of Computing and Imaging (SCI) Institute, University of Utah, USA.
- 5) **Dr. Simo Vanni**, Senior Scientist and AMI Center Director, Aalto University, Finland
- 6) **Dr. Loren Reith**, Associate Professor, Dept of Electrical and Computer Engineering, University of Utah
- 7) **Dr. John Rolston**, Assistant Professor, Dept Neurosurgery, University of Utah.
- 8) **Dr. Ross Walker**, Assistant Professor, Dept of Electrical and Computer Engineering, University of Utah
- 9) **Dr. Brittany Coats**, Associate Professor, Dept of Mechanical Engineering, Univ. of Utah.
- 10) **Dr. Eduardo Fernandez**, Professor and Director, Institute of Bioengineering, Medical School, University Miguel Hernandez and CIBER BBN, Alicante, Spain.
- 11) **Dr John Reynolds**, Professor, Salk Institute
- 12) **Prof. Fred Wolf**, Max Planck Institute and University of Göttingen, Germany.
- 13) **Dr. Boris Zemelman**, Dept Neuroscience, UT Austin, Texas, USA

## 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\* (2016). A scalable cyberinfrastructure for interactive visualization of terascale microscopy data. NYSci Data Summit NYSDS: doi: 10.1109/NYSDS.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. Boute 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*: doi: 10.1093/cercor/bhz322.
  44. Ho, C.L.A., Zimmermann R., Florez Weidinger J.D., Prsa M., Schottdorf M., Merlin S., Pifferi F., Aujard F., Angelucci A., Wolf F., and Huber D. Orientation preference maps in *Microcebus Murinus* reveal size-invariant design principles in primate visual cortex. *Nature Neurosci.* Submitted 2020.

45. Federer F., Ta'afua S., Merlin S., and **Angelucci A.** (2020) Stream-specific feedback inputs to the primate primary visual cortex. *Nature Communication*: undergoing revision 1. This article was published in Feb 2020 in *BioRxiv* doi: <https://doi.org/10.1101/2020.03.04.977264>.
46. Siu C., Balsor J., Federer F., and **Angelucci A.** (2020) "A direct interareal feedback-to-feedforward circuit in primate visual cortex". *Nature Neurosci.*: Submitted July 2020. This article was published in July 2020 in *BioRxiv* doi:<https://doi.org/10.1101/2020.07.07.192450>.

### **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: *The New Visual Neurosciences*, (L.M. Chalupa & J.S. Werner, Eds.), MIT Press (Cambridge): Chapter 30, pp. 425-444.

### **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.

### **PUBLICATIONS IN PREPARATION**

1. Bijanzadeh M. and **Angelucci A.** "Gamma oscillations as a marker of collinear horizontal and feedback connectivity in primate primary visual cortex". In preparation for *Neuron*.
2. 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 *Neuron*.
3. 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.**<sup>1</sup>, and Wolf F.<sup>1</sup> Evolutionary remodeling of the primate visual cortex. *Science*: Submitted.  
<sup>1</sup> **Equal senior author contribution.**

### **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. Jeffs J., Ichida J.M., Federer F. and **Angelucci A.** (2007). Anatomical evidence for visual field completion across the discontinuous V2 horizontal meridian representation. *Soc. Neurosci. Abstr. Online: 280.15.*
2. Ichida J.M., Schwabe L., Shushruth and **Angelucci A.** (2007). Contrast-dependence of “far” surround suppression in macaque V1. *Soc. Neurosci. Abstr. Online: 279.9.*
3. Federer F., Ichida J. M., Jeffs J. and **Angelucci A.** (2007). Three separate streams of anatomical projections from primary visual cortex to the cytochrome oxidase stripes of marmoset area V2. *Soc. Neurosci. Abstr. Online: 122.3.*
4. Shushruth, Ichida J.M. and **Angelucci A.** (2007). “Far” surround facilitation of sub-optimally oriented stimuli in the classical receptive field. *Soc. Neurosci. Abstr. Online: 279.4.*
5. **Angelucci A.** (2007). “The “near” and “far” surround of macaque V1 neurons: the role of feedforward and intracortical connections”. *Soc. Neurosci. Abstr. Minisymposium: 850.3.* “Mechanisms and Functions of Visual Signals from Beyond the Classical Receptive Field in Primary Visual Cortex”.
6. Shushruth, Ichida J.M. and **Angelucci A.** (2008). Orientation tuning of facilitatory and suppressive signals from the “far” surround of primary visual cortex neurons. *Computational and Systems Neuroscience Abstr. Online: 184.*
7. Ichida J.M., Schwabe L., Shushruth and **Angelucci A.** (2008). Contrast-dependent suppression from the “far” surround of V1 neurons: experiments and data-driven model comparison. *Computational and Systems Neuroscience Abstr. Online: 192.*
8. Federer F., Ichida J. M., Jeffs J. and **Angelucci A.** (2008). Multiple output pathways from V1 layer 4B to V2 CO stripes. *Soc. Neurosci. Abstr. Online: 366.24.*
9. Schwabe L., Mangapathy P., Shushruth, Ichida J.M., Bressloff P. C. and **Angelucci A.** (2008). A three-population network model of orientation-tuned surround modulation in V1. . *Soc. Neurosci. Abstr. Online: 769.5.*
10. **Angelucci A.** (2009) Contextual effects in primary visual cortex: pathways and mechanisms. *Computational and Systems Neuroscience Abstr. Online: workshops.*



11. **Angelucci A.**, Bressloff P.C., Schwabe L., Ichida J.M., Shushruth S. (2009) Anatomical circuits for classical and extra-classical receptive field interactions in macaque V1. *Janelia Farms Conference on: "Computations in Neocortical Circuits: What does the Cortex do?"*
12. Federer F, Jeffs J., Ichida J.M. and **Angelucci A.** (2009) The contribution of output pathways from the CO stripes of V2 to dorsal and ventral streams in the marmoset. *Soc. Neurosci. Abstr. Online: 453.21.*
13. Jeffs J., Federer F. and **Angelucci A.** (2009) Anatomical evidence for an area DM, but not V3, bordering dorsal V2 in the marmoset. *Soc. Neurosci. Abstr. Online: 453.14.*
14. Schwabe L., Mangapathy P., Shushruth, Ichida J.M., Bressloff P.C. and **Angelucci A.** (2009) The role of thalamic, horizontal and feedback connections in orientation-tuned surround suppression in a V1 balanced-state network model. *Soc. Neurosci. Abstr. Online: 352.14.*
15. Shushruth, Ichida J.M., Levitt J.B.L. and **Angelucci A.** (2009) Comparison of spatial summation properties in macaque V1 and V2. *Soc. Neurosci. Abstr. Online: 453.15.*
16. **Angelucci A** (2011). Circuits for contextual integration in primary visual cortex. Workshop: "Grand Challenges in Neural Computation II: Neuromimetic Processing and Synthetic Cognition". Santafe, NM, USA.
17. 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". Santafe, NM, USA.
18. 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*
19. 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.*
20. 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.*
21. 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.*
22. 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.*
23. 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.
24. 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.
  25. 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.
  26. 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.
  27. 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.
  28. 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.
  29. 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.
  30. 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.
  31. Bijanzadeh M., Nurminen L., **Angelucci A.** (2015) Parallel processing of center and surround signals in the superficial and deep layers of macaque V1. *Soc. Neurosci. Abstr. Online*: 699.01.
  32. Yarch J., Federer F., **Angelucci A.** (2015) V1 layer 4B neurons projecting to V2 thick stripes in macaque: V1 laminar projections and their relationship to cytochrome oxidase compartments. *Soc. Neurosci. Abstr. Online*: 598.22.
  33. Nurminen L., Bijanzadeh M., **Angelucci A.** (2015) Natural images and redundancy reduction in primate visual cortex. *Soc. Neurosci. Abstr. Online*: 699.05.
  34. Bijanzadeh M. and **Angelucci A.** (2016) Gamma oscillations as a marker of collinear horizontal and feedback connectivity in primate primary visual cortex. *Soc. Neurosci. Abstr. Online*: 713.13.
  35. Nurminen L., Merlin S., Bijanzadeh M., Federer F., and **Angelucci A.** (2016) Optogenetic inactivation of V2 feedback to primate V1 affects contrast gain, receptive field size and near

surround suppression. *Soc. Neurosci. Abstr. Online*: 713.16

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