

CURRICULUM VITAE

Alipasha Vaziri, PhD
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EDUCATION

- 01/2003 **Ph.D.** in Physics, University of Vienna, *summa cum laude*, PhD thesis: Quantum Experiments using Higher Dimensional Entangled Photon States with Singularities with Prof. Anton Zeilinger
- 06/2000 **M.Sc.** in Physics, University of Vienna, *summa cum laude*, Masters thesis: Conservation of the Orbital Angular Momentum of Entangled Photon States with Singularities with Prof. Anton Zeilinger

CURRENT POSITIONS

- 09/ 2016 – present **Associate Director** – Kavli Neural Systems Institute at Rockefeller University
- 09/ 2015 – present **Associate Professor & Head** – Laboratory of Neurotechnology and Biophysics, Rockefeller University
- 09/2015 – present **Adjunct Investigator** – Research Institute of Molecular Pathology (IMP), Vienna

PROFESSIONAL CAREER

- 01/ 2013 – 09/2015 **Director** – Interdepartmental Research Platform Quantum phenomena and Nanoscale Biological Systems (QuNaBioS), University of Vienna – An interdepartmental organizational unit of the University of Vienna established by the president to strengthen the interdisciplinary profile of the university
- 07/2014 – 09/2015 **Associate Professor** - Center for Molecular Biology, University of Vienna
- 04/2011 – 09/2015 **Group Leader** - Research Institute of Molecular Pathology (IMP), Vienna
- 04/2011 – 06/2014 **Assistant Professor** - Center for Molecular Biology, University of Vienna
- 10/2012 – 06/2013 **Fellow** - Institute for Advanced Studies (Wissenschaftskolleg zur Berlin)

10/2008 – 12/2012	Visiting Scientist – MIT, Department of Chemistry with A. Tokmakoff
04/2007 – 04/2011	Research Specialist - Howard Hughes Medical Institute, Janelia Farm Research Campus
11/2005 - 04/2007	Associate – McKinsey & Company Strategic business consultant high-tech sector
12/2003 - 08/2005	Postdoctoral Researcher - National Institute of Standards and Technology (NIST) & University of Maryland - with Nobel Laureate Dr. William D. Phillips
01/2003 - 12/2003	Postdoctoral Researcher - University of Vienna - with Prof. Anton Zeilinger
09/2000 - 01/2003	Research Scientist and Assistant Lecturer - University of Vienna

PRIZES AND AWARDS

2016	ERC Consolidator Award
2015	Brain Initiative Award
2014	Prize of the City of Vienna
2013	Fellow of Institute for Advanced Studies (Wissenschaftskolleg zur Berlin)
2012	Human Frontier Science Program (HFSP) Young Investigators' Award
2010	WWTF Vienna Research Groups for Young Investigators Award
2003	PhD Summa cum Laude

SCIENTIFIC COMMUNITY SERVICE

- **Member** of the physics faculty evaluation board – IST Austria
- **Member** of the advisory board – Vienna Open Medical Institute
- **Panel member** and peer **reviewer** for: BRAIN Initiative (Panel Member), Human Brain Project (Panel Member), Human Frontier Science Program (HFSP), W.M. Keck Foundation, Volkswagenstiftung, Boehringer Ingelheim Fonds, Netherlands Organization for Scientific Research (NWO, the Dutch research council), Danish Council for Independent Research, Boehringer Ingelheim Fonds, and European Research Council
- **Member of the steering committee and organizer**- workshop Quantum Effects in Biological Systems
- **Organizer: Biannual Janelia Conference** “*Acquisition & interpretation of whole-brain functional data*”
- Active and **frequent referee** for publications, amongst others in: Nature, Science, Nature Methods, Nature Communications, Nature Photonics, Cell Reports, Physical Review Letters, Scientific Reports, Optics Express, Optics Letters, PNAS, eLife, Optica, Science Advances

PUBLICATION SUMMARY

- **82 publications**, 2 Nature, 1 Cell, 6 Nature Methods, 1 Nature Neuroscience, 1 Nature Communications, 3 PNAS, 1 eLife
- Citation record as of 04/19/2018 from Google Scholar | **Total citations: 5690** | **h index: 24**
- **133 invited** talks including plenary speaker at conferences, colloquia and seminars
- 2 Book chapters, 1 in prep
- 7 Patents and/or patent applications

SELECTED PUBLICATIONS (Full list available at www.vaziria.com)

***Annual Review of Neuroscience**, 41:1 (2018), S. Weisenburger, A. Vaziri, A Guide to Emerging Technologies for Large-Scale and Whole-Brain Optical Imaging of Neuronal Activity

***Nature Methods**, 15 (2018), O. Skocek, T. Nöbauer, L. Weilguny, F. Martinez-Traub, C. N. Xia, M. I. Molodtsov, A. Grama, M. Yamagata, D. Aharoni, D. Cox, P. Golshani, and **A. Vaziri**, High-speed volumetric imaging of neuronal activity in freely moving rodents

***Optica**, 5, 345-353 (2018), M. Taylor, T. Nöbauer, A. Pernia-Andrade, F. Schlumm, and **A. Vaziri**, Brain-wide 3D light-field imaging of neuronal activity with speckle-enhanced resolution

***Nature Methods**, 14, 811-818 (2017), T. Nöbauer, O. Skocek, A. Pernia-Andrade, L. Weilguny, F. Traub, M. Molodtsov and **A. Vaziri**, Video rate volumetric Ca²⁺ imaging across cortex using seeded iterative demixing (SID) microscopy

***Nature Methods**, 13, 1021-1028 (2016), R. Prevedel, A. Verhoef, A. Pernia-Andrade, S. Weisenburger, B. Huang, T. Nöbauer, A. Fernández, J. Delcour, P. Golshani, A. Baltuska and **A. Vaziri**, Fast volumetric calcium imaging across multiple cortical layers using sculpted light

***Cell**, 176:2, 539 (2016), Maxim. Molodtsov, C. Mieck, J. Dobbelaere, A. Dammermann, S. Westermann, and **A. Vaziri**, Microtubule bundle formation and parallel growth at the microtubule-organizing centers.

***Nature Communications** 7, 12172 (2016), J. Tinsley, M. Molodtsov, R. Prevedel, D. Wartmann, J. Espigulé-Pons, M. Lauwers, and **A. Vaziri**, Direct Detection of a Single Photon by Humans

The EMBO Journal 35, 2671-2685 (2016), I. Davidson, D. Goetz, M. Zaczek, M. Molodtsov, P. Huis in't Veld, F. Weissmann, G. Litos, D. Cisneros, M. Ocampo-Hafalla, R. Ladurner, F. Uhlmann, **A. Vaziri**, and J.M.Peters, Rapid movement and transcriptional re-localization of human cohesin on DNA

* **eLife** 10.7554/eLife.04489 (2015), C. Mieck, M. Molodtsov, K. Drzewicka, B. van der Vaart, G. Litos, G. Schmauss, **A. Vaziri**, and S. Westermann, A non-catalytic head enables processive motility of the kinesin-14 Kar3 to transport the Ndc80 kinetochore complex

***Nature Methods**, Vol. 11, 7, 727 (2014), R. Prevedel, Y.-G. Yoon, M. Hoffmann, N. Pak, G. Wetzstein, S. Kato, T. Schrödel, R. Raskar, M. Zimmer, E.S. Boyden and **A. Vaziri** (2014), Simultaneous whole-animal 3D-imaging of neuronal activity using light field microscopy

***Nature Methods**, Vol. 10, 10, 1014 (2013), T. Schroedel, R. Prevedel, K. Aumayr, M. Zimmer and **A. Vaziri**, Brain-wide 3D imaging of neuronal activity in *Caenorhabditis elegans* with sculpted light

Nature, Vol. 501, 564 (2013), A. Tedeschi, G. Wutz, S. Huet, M. Jaritz, A. Wuensche, E. Schirghuber, I. F. Davidson, W. Tang, D. A. Cisneros, V. Bhaskara, T. Nishiyama, **A. Vaziri**, A. Wutz, J. Ellenberg and J. Peters, Wapl is an essential regulator of chromatin structure and chromosome segregation

***Current Opinion in Neurobiology**, 22, 128 (2012), **A. Vaziri** and V. Emiliani, Reshaping the Optical dimension in Optogenetics

Nature Methods, 8, 327–333 (2011), A. York, A. Ghitani, **A. Vaziri**, M. Davidson and H. Shroff, Confined Activation and Model-Independent Subdiffraction Localization Enables Whole-Cell PALM with Genetically Expressed Probes

Nature Neuroscience, Vol. 13, 967 (2010), A. Losonczy, B. Zemelman, **A. Vaziri** and J. Magee, Network mechanisms of theta related neuronal activity in hippocampal CA1 pyramidal neurons

***PNAS**, Vol. 107, 11981 (2010), B. Andrasfalvy, B. Zemelman, J. Tang and **A. Vaziri**, Two-photon Optogenetic Control of Neural Activity with Single Synapse Precession by Sculpted Light

PNAS, Vol. 107, 10068 (2010), J. Tang, **A. Vaziri**, J. Akerboom, L. Looger and C. Shank, Near-isotropic 3D optical nanoscopy with photon-limited chromophores

***PNAS**, Vol. 105, 51, 20221 (2008), **A. Vaziri**, J. Tang, H. Shroff and C. Shank, Multilayer Three-dimensional Super-resolution Imaging in Thick Biological Samples

*Corresponding author

SELECTED INVITED TALKS AND COLLOQUIA

133 invited talks at international conferences and colloquia - A selected list is given below.

2018 A. Vaziri, Invited Speaker at Tsinghua University, Beijing, China, May 2018

2018 A. Vaziri, Invited Speaker at the University of California San Diego, La Jolla, CA, USA, Apr. 2018

2018 A. Vaziri, Invited Speaker at Coherent Imaging Workshop, New Paltz, NY, USA, Mar. 2018

2018 A. Vaziri, Invited Speaker at Baylor College, Houston, TX, USA, Mar. 2018

2017 A. Vaziri, Invited Symposium Speaker at Salk Institute, La Jolla, CA. Dec. 2017

2017 A. Vaziri, Invited Symposium Speaker at Boston University, Boston, MA, Nov. 2017

2017 A. Vaziri, Invited Symposium Speaker at the Massachusetts Institute of Technology, Cambridge, MA, Nov. 2017

2017 A. Vaziri, Invited Speaker at Janelia Research Campus, Ashburn, VA, Nov. 2017

2017 A. Vaziri, Invited Seminar Speaker at Cornell University, Ithaca, NY, USA, Oct. 2017

2017 A. Vaziri, Invited Speaker at the Kavli Futures Symposium, Santa Monica, NY, USA, Oct. 2017

2017 A. Vaziri, Invited Lecturer at Cold Spring Harbor Labs, Cold Spring Harbor, NY, USA, August 2017

2017 A. Vaziri, Invited Speaker at The Simons Foundations, New York, NY, USA, May 2017

2017 A. Vaziri, Invited Speaker at EMBO|EMBL Symposia, Heidelberg, Germany, May 2017

2017 A. Vaziri, Invited Speaker at The Institute of Optics, Rochester, NY, USA, Apr. 2017

2017 A. Vaziri, Invited Seminar Speaker at Princeton University, Princeton, NY, USA, Apr. 2017

2017 A. Vaziri, OSA Biophotonics Congress: Optics in the Life Sciences, San Diego, CA, USA, Apr. 2017

2017 A. Vaziri, Seminar Speaker at University of California San Francisco, San Francisco, USA, Feb. 2017
2017 A. Vaziri, Oxyopia Seminar Speaker, University of California Berkeley, Berkeley, USA, Feb. 2017
2016 A. Vaziri, Symposium Speaker at Center of Advanced European Studies and Research (CEASAR), Bonn, Germany, Nov. 2017
2016 A. Vaziri, Symposium Speaker at Vienna School of Medicine, Vienna, Austria, Nov. 2016
2016 A. Vaziri, Sackler Distinguished Speaker at Yale University, New Haven, USA
2016 A. Vaziri, Invited Seminar Speaker at University of Pennsylvania, Philadelphia, USA
2016 A. Vaziri, Invited Lecture at Weill Cornell, New York, NY, USA
2016 Invited symposium speaker at Genetic Manipulation of Neuronal Activity, Janelia, Ashburn, USA,
2016 Invited symposium speaker at Vienna – New York Science Symposium on Neuroscience, New York
2016 Invited speaker at “New Approaches to Imaging Neurons and Neural Circuits”, Denmark
2016 Invited speaker at The Center for Brain Science at Harvard University, Cambridge, USA
2015 Invited speaker at Max Planck Symposium on Physics and Medicine, Erlangen, Germany
2015 Invited symposium speaker at the OSA’s Optics and the Brain, Vancouver, Canada
2015 Invited symposium Speaker at Simons Foundation Calcium Imaging Data Analysis, New York, USA
2015 Invited symposium Speaker at EMBO|EMBL Symposium: Seeing is Believing, Heidelberg, Germany
2014 Plenary speaker at “Emerging Imaging Technologies in Neuroscience” Paris, France
2014 Annual Nobel Prize Lecture of the Austrian Chemistry Society, Vienna, Austria, Dec. 2014
2014 Invited speaker at Symposium Network of European Neuroscience Institutes, Freiburg, Germany
2014 Invited speaker at Rockefeller University, NY, USA
2014 Invited speaker at Max Planck Florida Institute (MPFI), FL, USA
2014 Genetic Manipulation of Neuronal Activity III, Janelia Farm, Ashburn, VA, USA
2014 Invited colloquium at Google, Venice, CA, USA
2014 Seminar Allen Institute for Brain Research, WA, USA
2013 OSA Incubator Meeting Spatially Precise Optogenetics at Depth, Washington, DC, USA
2013 37th International Congress of Physiological Sciences (IUPS 2013), Birmingham, UK
2013 NERF Neurotechnology Symposium, Leuven, Belgium
2013 "Light in Action" Symposium, University of Central Florida, Orlando, USA
2012 Federation of European Neuroscience (FENS), Barcelona, Spain
2012 47th Winterseminar Biophysical Chemistry, Klosters, Switzerland
2011 Plenary Speaker, 3rd Annual Meeting of the at the Austrian Biophysical Society, Puch, Austria
2011 The next 10^{23} femtoseconds conference, Janelia Farm Research Campus, HHMI, Ashburn, USA
2010 Structure and Function of Neural Circuits, EMBL Advanced Training Centre, Heidelberg, Germany
2010 Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland
2010 University of Washington, Seattle, USA
2010 Institute for Quantum Computing (IQC), University of Waterloo, Waterloo, Canada
2010 Institute for Photonic Sciences (ICFO), Barcelona, Spain
2010 Columbia University, New York, USA
2009 Bodian Seminar at Mind/Brain Institute, Johns Hopkins University, Baltimore, USA
2009 Optical Society of America, topical meeting, Vancouver, Canada
2009 University of California Los Angeles (UCLA), CA, USA
2008 Massachusetts Institute of Technology (MIT), MA, USA
2007 Stanford University, CA, USA