

Kari Vienola | CV

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Education

Vrije Universiteit Amsterdam

Amsterdam

Doctor of Philosophy

2011–2017

My PhD research was focused in ophthalmic imaging development, mainly focusing on new scanning laser ophthalmoscopy (SLO) technology and retinal motion detection/tracking applications.

University of Turku

Turku

Master of Science

2009–2011

Majored in medical physics (Minor in medicine). Master's thesis focused in multi-modal imaging with atomic force microscopy (AFM) and stimulated emission depletion (STED) microscopy.

University of Turku

Turku

Bachelor of Science

2006–2009

Majored in physics having computer science and mathematics as minors. Bachelor thesis focused on super-resolution imaging with stimulated emission depletion (STED) microscope.

Research Experience

University of Pittsburgh, Department of Ophthalmology

Pittsburgh, PA

Postdoctoral Associate, Eye and Ear Institute

2017–

Developing adaptive optics scanning laser ophthalmoscopy (AOSLO) technology. Main research goals of the projects are visualizing the nearly transparent cells in the retina such as retinal ganglion cells and potentially quantify cell loss over time.

Rotterdam Ophthalmic Institute & VU Amsterdam

PhD researcher

2011–2017

Designing new scanning light ophthalmoscopy (SLO) systems using digital light projection technology. Developing data acquisition and processing code for the experimental data.

Laboratory of Biophysics, University of Turku

Turku

Research assistant

2010–2011

Designed and performed the experiments necessary for the Master's thesis. Designed the hardware on integrate the two microscopes together. Continued as research assistant after graduation, where I was involved in cell labeling with fluorescence.

PET Centre

Turku

Summer internship

2010

Designed and executed experiments where we studied head movement error in PET images using a custom software and a head phantom. Simultaneously was in charge of testing and developing the new in-house picture archiving and communication system (PACS).

Other Skills and Qualifications

Programming and modeling.....

Advanced: LabVIEW, MatLAB

Intermediate: ZEMAX, Fusion 360, SQL

Novice: SolidWorks, FPGA, Python

Productivity tools.....

Advanced: Inkscape, MS Office, L^AT_EX

Intermediate: Gimp, Photoshop

Novice: Illustrator, InDesign

Languages.....

Excellent: Finnish (native), English

Intermediate: German, Swedish

Novice: Dutch, Italian

Honors and Recognitions

The Annual Meeting of the ARVO

Seattle, USA

ARVO International Travel Grant

May, 2016

The submitted accepted abstract with a high score for the 2016 ARVO Annual Meeting and whose research findings in the abstract are considered to be of high interest to the vision and ophthalmology research community.

The Annual Meeting of the ARVO

Seattle, USA

Members-In-Training Outstanding Poster Award finalist

May, 2016

Submitted abstract received one of the top five review scores given by the reviewing Scientific Section or Cross-sectional Group.

The Annual Meeting of the ARVO

Orlando, USA

Members-In-Training Outstanding Poster Award finalist

May, 2014

Submitted abstract received one of the top five review scores given by the reviewing Scientific Section or Cross-sectional Group.

Biophotonics '13 Graduate Summer School

Hven, Sweden

SPIE Poster Award 2013

June, 2013

Presented my poster titled "*Imaging of Optic Nerve Head With Motion Corrected OCT Using Tracking SLO*" winning the first prize. The posters were judged by their visual appearance, oral presentation accompanying the poster and current and/or future scientific impact of the content within the field of biophotonics. The poster were evaluated by the invited lectures.

Selected talks and posters in conferences/seminars

Invited talk: "Parallel line scanning ophthalmoscope for retinal imaging," Young Researcher Vision Camp, Leibertingen Germany, June 2016.

Poster: "Parallel line scanning ophthalmoscope for retinal imaging," The Annual ARVO Meeting, Seattle USA, May 2016.

Talk: "Parallel scanning light ophthalmoscope for retinal imaging," SPIE Photonics West - Ophthalmic Technologies XXVI, San Francisco USA, February 2016.

Poster: "Parallel scanning laser ophthalmoscope (PSLO) for high-speed retinal imaging" The

Annual ARVO Meeting, Seattle USA, May 2014.

Talk: "Massively parallel confocal scanning imaging of the retina" SPIE Photonics West - Emerging Digital Micromirror Device Based Systems and Applications VI, San Francisco USA, February 2014.

Poster: "Imaging of optic nerve head pore structure with motion corrected deeply penetrating OCT using tracking SLO," The Annual ARVO Meeting, Seattle USA, May 2013.

Poster: "Real-time eye motion compensation in OCT imaging with tracking SLO," SPIE Photonics West - Ophthalmic Technologies XXIII, San Francisco USA, February 2013.

Publications

2017: Mathi Damodaran, **Kari V. Vienola**, Boy Braaf, Koenraad A. Vermeer, and Johannes F. de Boer, "*Parallel line scanning ophthalmoscope for retinal imaging*," Biomed. Opt. Express 8(5), 2766-2780 (2017)

2015: **Kari V. Vienola**, Mathi Damodaran, Boy Braaf, Koenraad A. Vermeer, and Johannes F. de Boer, "*Parallel line scanning ophthalmoscope for retinal imaging*," Opt. Lett. 40(22), 5335-5338 (2015)

2014: Boy Braaf, Koenraad A. Vermeer, Mattijs de Groot, **Kari V. Vienola**, and Johannes F. de Boer, "*Fiber-based polarization-sensitive OCT of the human retina with correction of system polarization distortions*," Biomed. Opt. Express 5, 2736-2758 (2014)

2013: Boy Braaf, **Kari V. Vienola**, Christy K. Sheehy, Qiang Yang, Koenraad A. Vermeer, Pavan Tiruveedhula, David W. Arathorn, Austin Roorda, and Johannes F. de Boer, "*Real-time eye motion correction in phase-resolved OCT angiography with tracking SLO*," Biomed. Opt. Express 4, 51-65

2012: **Kari V. Vienola**, Boy Braaf, Christy K. Sheehy, Qiang Yang, Pavan Tiruveedhula, David W. Arathorn, Johannes F. de Boer, and Austin Roorda, "*Real-time eye motion compensation for OCT imaging with tracking SLO*," Biomed. Opt. Express 3, 2950-2963

2012: Boy Braaf, Koenraad A. Vermeer, **Kari V. Vienola**, and Johannes F. de Boer, "*Angiography of the retina and the choroid with phase-resolved OCT using interval-optimized backstitched B-scans*," Opt. Express 20, 20516-20534

References

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