

Sepideh Hariri

Academic CV

hariris@seattleu.edu

CURRENT AND PAST ACADEMIC POSITIONS

- **Adjunct Faculty**

Department of Physics, Seattle University, Seattle WA, USA

Sep 2017-Present

Department of Physics, University of Washington Bothell, Seattle, WA, USA

March-Aug 2016

Department of Physics, Seattle University, Seattle WA, USA

Sep 2014- June 2016

Department of Physics and Math, South Seattle College, Seattle, WA, USA

Jan 2015-March 2016

Department of Physics, Edmonds Community College, Lynnwood, WA, USA

Sep 2015-Aug 2016

- **RST Academy Undergraduate Research Faculty, South Seattle College.**

Jan -Aug 2016

Undergraduate research project in collaboration with BAIL Labs at UW Seattle.

Project title “Application of Optical Coherence Tomography in Plant Imaging”

- **RST Faculty Mentor, South Seattle College.**

Jan-Dec 2015

RST Academy is a National Science Foundation (NSF) program that provides tools and support to start and keep students on a pathway to a STEM career.

- **Yoga Instructor**

Since Jan 2012

EDUCATION AND RESEARCH EXPERIENCE

- **Postdoctoral Senior Research Fellow**

Aug2013-Sep 2014

Department of Bioengineering, University of Washington, Seattle, WA

Research Topic: “Phase-sensitive Optical Coherence Tomography imaging of anterior segment of the eye in health and disease”

Advisor: Prof. Ruikang Wang

- **Ph.D. in Physics** **2008 to Feb2013**
Department of Physics and Astronomy, University of Waterloo, Waterloo, ON, Canada

Research Topic: “Ultrahigh Resolution Optical Coherence Tomography for non-invasive imaging of outer retina degeneration”

Advisor: Dr. Kostadinka Bizheva

- **Graduate Certificate in University Teaching** **2010-2012**
Center for Teaching Excellence, University of Waterloo, Waterloo, ON, Canada

Research Topic: “The Role of History and Philosophy of Science in University Science Teaching”

Advisor: Dr. Svitlana Taraban-Gordon

- **M.Sc. in Applied Mathematics** **2005-2007**
Department of Mathematics and Statistics, Iran University of Science and Technology, Tehran, Iran.

Thesis: “Simultaneous reconstruction of the initial temperature and heat radiative coefficient in an Inverse Heat Problem”.

Advisor: Prof. Abdollah Shidfar

- **B.Sc. in Physics** **2001-2005**
Department of Physics, Amirkabir University of Technology, Tehran, Iran.

TEACHING EXPERIENCE AND TRAININGS

❖ Teaching Training:

1. District Hybrid Training, Seattle Community Colleges.
 - Training retreat June 5&6 2015

June-Sep 2015

- 4 follow up sessions to support the design of the hybrid course under development.
2. Pathways to Completion Training, Seattle Community Colleges. **April-June 2015**
 Training designed by the Carnegie Foundation to promote persistence and retention in university and college students.
 - Introduction to Productive Persistence
 - Promoting a Growth Mindset
 - Promoting Social-Ties Through Collaborative Learning

 3. Teaching certificate program offered by the Center for Teaching Excellence (CTE) at University of Waterloo, ON, Canada: “Certificate for University Teaching (CUT)”. **2010-2012**
 - **Workshops**
 1. Understanding the learner
 2. Using clicker as a learning tool
 3. Designing exams
 4. Course design
 5. Writing as a learning tool
 6. Teaching first year students
 7. Critical thinking
 8. Classroom communication strategies
 9. Preparing your teaching dossier
 10. Memorization or understanding: are we teaching the right thing? (Guest lecturer: Eric Mazur, Harvard University, Dec 2010)

 - **Three teaching observations** with feedback and discussion sessions

 - **Research project** (literature review, title: “The role of history and philosophy of science in university science teaching”), presented in a mini-workshop format.

❖ **Mentorship:**

1. **Undergraduate Research Mentor, South Seattle College** **Jan-Aug 2016**
 Undergraduate research project in collaboration with BAIL Labs at UW Seattle.
 Project title “Application of Optical Coherence Tomography in Plant Imaging”

2. **RST Academy Faculty Mentor at South Seattle College** **Jan-Dec 2015**

RST Academy is a National Science Foundation (NSF) program that provides tools and support to start and keep students on a pathway to a STEM career.

3. Biomedical Imaging Laboratory , Univ. of Waterloo **2009-2012**

Mentoring and training new graduate students and co-op undergraduate students in biomedical imaging lab at department of physics and astronomy, University of Waterloo, ON, Canada

❖ **Teaching Assistantship:** **2008-2012**

1- Department of Physics and Astronomy, University of Waterloo, Waterloo, ON, Canada.
Courses: “Physics 1, 2”, “Mechanics and Waves”, “Mechanics” “Physics for Engineering”, “Physics for electrical engineering” and “Electricity and Magnetism”, “Modern Optics”.

2- Department of Physics and Astronomy, York University, Toronto, ON, Canada. **2007-2008**
Courses: First year college physics tutorial and Labs.

❖ **Private Tutor:** **Since 2001**

Teaching Physics and Math to grade 6 to 12th students and undergraduate students.

❖ **Yoga Instructor:** **Since Jan 2012**

Certified yoga teacher with over 250 hours of training.

COMMUNITY SERVICE ACTIVITIES

1. Volunteer yoga teacher at Street Yoga Seattle. **2013-2015**

“Street Yoga is a non-profit organization that teaches yoga, mindful breathing, and compassionate communication to youth and families and their caregivers struggling with homelessness, poverty, abuse, addiction, trauma and behavioral challenges so they can grow stronger, heal from past traumas, and create for themselves a life that is inspired, safe, and joyful.”(streetyoga.org mission statement)

2. Volunteer at the “Let’s talk science” program at university of Waterloo; **2010-2011**

Leading workshops to cultivate interest in science in elementary, middle and high school students.

TRAININGS and SKILLS

Computer

Data analysis and computation (MATLAB)

Programming language, Laboratory Virtual Instrument Engineering Workbench (LabView)

Visualization (Origin, Amira, Adobe Photoshop)

Biophysics Lab

Optical coherence tomography imaging.

Operating different systems:

- Spectrometers,
- Spectrum analyzer,
- CW light sources (SLD, Femtolaser).
- ERG system (Generating different light stimulus and Data acquisition protocols)

Languages

- Farsi (native)
- English (fluent)

AWARDS

1. QEII GSST, Winter 2012.
2. SPIE Educational Scholarship in Optical Science and Engineering, 2011/05 – 2012/05.
3. UW/NSERC scholarship, 2011/05.
4. SPIE Educational Scholarship in Optical Science and Engineering, 2010/05 – 2011/05.
5. CAP (Canadian Association of Physics) Congress Division of Optics and Photonics Best Student Paper Presentation Award, 2010/06.
6. CAP (Canadian Association of Physics) Congress TRIUMF Award 2010/06.
7. Provost Doctoral Award for Women from Univ. of Waterloo, 2009/05 - 2010/05.
8. Postgraduate Entrance Award from Univ. of Waterloo, 2008/05 - 2009/05.

PUBLICATIONS

Refereed Journal Papers and Proceedings

1. MA Johnstone, **Sepideh Hariri**, Y Jiang, S Padilla, Z Zhou, RK Wang, "OCT Imaging Shows Collector Channels Rapidly Open & Close with Pressure Changes: A Mechanism Regulating Control of Distal Resistance", *Investigative Ophthalmology & Visual Science* **2015**, 56 (7), 3539-3539.
2. P Li, Y Sun, **Sepideh Hariri**, Z Zhou, Y Inamoto, SJ Lee, TT Shen, RK Wang, "Anterior segment optical coherence tomography evaluation of ocular graft-versus-host disease: a case study" *Quantitative imaging in medicine and surgery* **2015**, 5 (1), 163.
3. **Sepideh Hariri**, Murray Johnstone, Yi Jiang, Steve Padilla, Roberto Reif and Ruikang K. Wang, "Platform to investigate aqueous outflow system structure and pressure-dependent motion using high-resolution spectral domain optical coherence tomography.", *Journal of Biomedical Optics*, **2014** Oct 1;19(10).
4. **Sepideh Hariri**, P Li, R Reif, Murray Johnstone, RK Wang, "Phase-Sensitive Optical Coherence Tomography for Quantification of Pulse-induced Trabecular Meshwork Movement in ex-vivo Human and Non-human Primate Eyes". *Investigative Ophthalmology & Visual Science*, **2014**, 55 (13), 4240-4240
5. **Sepideh Hariri**, Man Chun Tam, Donghyun Lee, Denise Hileeto, Alireza Akhlagh Moayed and Kostadinka Bizheva, "Non-invasive imaging of the early effect of sodium iodate toxicity in a rat model of outer retina degeneration with SD-OCT", *Journal of Biomedical Optics*, Feb. **2013**. Issue 2, Vol. 18.
6. Alireza Akhlagh Moayed, Vivian Choh, **Sepideh Hariri**, Chenyi Liu., Alexander Wong, Kostadinka Bizheva. Stimulus Specific Pupil Dynamics Measured in Birds (*Gallus Gallus Domesticus*) in vivo with Ultrahigh Resolution Optical Coherence Tomography. IOVS-12-10291 (**2012**)
7. **Sepideh Hariri**, Alireza A. Moayed, Vivian Choh, and Kostadinka Bizheva, "In vivo Assessment of Thickness and Reflectivity in a Rat Outer Retinal Degeneration Model with Ultrahigh Resolution Optical Coherence Tomography", IOVS -11-8395 (**2012**).
8. **Sepideh Hariri**, Patrick Ju Lee, Alireza A. Moayed and Kostadinka Bizheva ,(2011),"In-vivo human retina imaging with 5- μ m axial resolution, at 92000 A-scans/s with 1- μ m spectral-domain OCT system." **2011** SPIE (BIOS) Conference, Oral Presentation and proceeding, Paper number: 7889-19.
9. Alireza Akhlagh Moayed, **Sepideh Hariri**, Vivian Choh, and Kostadinka Bizheva, "Correlation of visually-evoked intrinsic optical signals and electroretinograms recorded from chicken retina with a combined functional optical coherence tomography and electroretinography system" *J. Biomed. Optics*, Vol. 17, Issue 1, pp.016011. (**2011**)

10. Alireza Akhlagh Moayed, **Sepideh Hariri**, Vivian Choh, and Kostadinka Bizheva, "In vivo imaging of intrinsic optical signals in chicken retina with functional optical coherence tomography," *Optics Letters*, Vol. 36, Issue 23, pp. 4575-4577 (2011)
11. Alireza Akhlagh Moayed, **Sepideh Hariri**, Eun Sun Song, Vivian Choh, and Kostadinka Bizheva, "In vivo volumetric imaging of chicken retina with ultrahigh-resolution spectral domain optical coherence tomography," *Biomed. Opt. Express* 2, 1268-1274 (2011)
12. Alireza A. Moayed, **Sepideh Hariri**, C. Hyun, B. Doran, T. W. Kraft, S. Boyd, and K. Bizheva, "Combined optical coherence tomography and electroretinography system for in vivo simultaneous morphological and functional imaging of the rodent retina", *J. Biomed. Opt.*, Vol. 15, Issue 4, pp. 40506 (2010).
13. N. Hutchings, T.L. Simpson, C. Hyun, Alireza A. Moayed, **S. Hariri**, L. Sorbara, and K. Bizheva .Swelling of the Human Cornea Revealed by High Speed, Ultrahigh Resolution Optical Coherence Tomography. *IOVS*, Vol. 51, pp.4579-4584 (2010).
14. **Sepideh Hariri**, Alireza A. Moayed, A. Dracopolos, C. Hyun, S. Boyd and K. Bizheva, "Limiting factors to the optical coherence tomography axial resolution for in-vivo imaging of human and rodent retina in the 1060nm wavelength range", *Opt. Express*, Vol. 17, Issue 26, pp. 24304–24316 (2009).
15. **Sepideh Hariri**, Alireza A. Moayed, et.al., (2009) High speed high resolution in-vivo imaging of healthy rat retinas with FD-OCT operating at 1060nm", Oral presentation and Proc. SPIE 7163, 716305.
16. **Sepideh Hariri**, Alireza A. Moayed, et.al. (2009) The broadest spectral bandwidth suitable for in-vivo UHROCT imaging of human and animal retina at 1060nm, oral presentation and Proc. SPIE 7168, 716807.



Conference presentations

1. **Sepideh Hariri**, Peng Li, Roberto Reif, Murray Johnstone and Ruikang K. Wang," Phase-Sensitive Optical Coherence Tomography for Quantification of Pulse-induced Trabecular Meshwork Movement in ex-vivo Human and Non-human Primate Eyes", (Poster Presentation, ARVO International Conference May 2014, Poster Number 4240 - B0008) (Postdoc Work).
2. **Sepideh Hariri**, Alireza Akhlagh Moayed, Kostadinka K. Bizheva, "In-vivo Study Of The Early Acute Changes In Sodium Iodate Treated Rat Retina With UHROCT", (Poster Presentation, ARVO International Conference 2012) (PhD Work).
3. Alireza Akhlagh Moayed, **Sepideh Hariri**, Vivian Choh, Kostadinka Bizheva, "Stimulus Specific, Visually-evoked Pupillary Responses in Chicken Measured with Functional Optical Coherence Tomography", (Poster Presentation, ARVO/ISIE International Conference 2012) (PhD Work).

4. Alireza Akhlagh Moayed, **Sepideh Hariri**, Vivian Choh, Kostadinka Bizheva,” In Vivo Measurement and Correlation Of Visually Evoked Retinal And Pupil Responses Of Chicken With Functional Optical Coherence Tomography”, (Poster Presentation, ARVO International Conference **2012**) (PhD Work).
5. **Sepideh Hariri**, Alireza Akhlagh Moayed, Eun Sun Song, Kostadinka K. Bizheva,” Quantification of the Retina Layers Reflectivity and Thickness in an In-vivo Rat model of Outer Retina Degeneration with Ultrahigh Resolution Optical Coherence Tomography”, (Poster Presentation, ARVO International Conference **2011**) (PhD Work).
6. **Sepideh Hariri**, Patrick Ju Lee, Alireza A. Moayed and Kostadinka Bizheva ,(2011), "In-vivo human retina imaging with 5- μ m axial resolution, at 92000 A-scans/s with 1- μ m spectral-domain OCT system." **2011** SPIE (BIOS) Conference, Oral Presentation, Paper number: 7889-19.
7. **Sepideh Hariri**, Alireza Akhlagh Moayed, Eun Sun Song, David Lee, Chulho Hyun, Akshaya Mishra, Shelley Boyd and Kostadinka Bizheva,(2011), "In-vivo quantitative assessment of outer retinal degeneration in a rat retinal model with UHROCT and a novel semi-automated segmentation algorithm.", **2011** SPIE (BIOS) Conference, Oral Presentation, Paper number: 7885-48.
8. **Sepideh. Hariri**, Alireza.A. Moayed, C.Hyun, S.Shakeel, A. Ali-Ridha, K. Bizheva and S. Boyd,(2010)“In-vivo monitoring of outer retinal damage in a rat retina model with high resolution OCT” (Poster presentation, BIOS **2010**).
9. **Sepideh. Hariri**, Alireza A. Moayed, C. Hyun, A. Mishra, K. Bizheva and S. Boyd, (2010)“In-vivo Visualization and Quantification of Retinal Pigmented Epithelium (RPE) and Photoreceptor Degeneration in a Rat Retina Model with Ultrahigh Resolution Optical Coherence Tomography” (Poster Presentation, ARVO International Conference **2010**).
10. **Sepideh Hariri**, Alireza.A.Moayed, C. Hyun, A. Mishra, S. Boyd, K.Bizheva,et.al.,(**2010**), "In-vivo Visualization and quantification of outer retina degeneration in a rat retina model with ultrahigh resolution Optical Coherence Tomography", Oral presentation, Canadian Association of Physics(CAP) conference 2010.
11. Alireza A. Moayed, **Sepideh Hariri**, C. Hyun, T.W. Kraft, B. Doran, S. Boyd and K. Bizheva, “Simultaneous *in-vivo* Probing of the Morphology and Function of the Rat Retina with a Combined UHROCT and ERG System at 1060 nm” (Oral Presentation, CAP Conference **2010**) (PhD Work)
12. Alireza A. Moayed, **Sepideh Hariri**, C. Hyun, T.W. Kraft, B. Doran, S. Boyd and K. Bizheva.(2010)“Simultaneous Probing of the Structure and Function of the Rat Retina in-vivo with a Combined UHROCT and ERG System” (Poster Presentation, ARVO International Conference **2010**).
13. Alireza A. Moayed, **Sepideh Hariri**, Kraft T.W., Doran B., Boyd S. and Bizheva K., “Simultaneous visualization of retinal structure and function in-vivo in healthy and diseased rat retina with a combined UHROCT and ERG system “ (oral presentation, BIOS **2010**).
14. **Sepideh Hariri**, Alireza A. Moayed, et.al., (**2009**) High speed high resolution in-vivo imaging of healthy rat retinas with FD-OCT operating at 1060nm”, Oral presentation and Proc. SPIE 7163, 716305

15. **Sepideh Hariri**, Alireza A. Moayed, et.al. (2009) The broadest spectral bandwidth suitable for in-vivo UHROCT imaging of human and animal retina at 1060nm, oral presentation and Proc. SPIE 7168, 716807.
16. K. Bizheva, Sepideh Hariri, et.al., (2009)“Simultaneous probing of retinal physiology in-vivo in a rat model with electrical and optical recordings at 1060nm.” , 2009 International BIOS Conference, Oral presentation.
17. K. Bizheva, A. A. Moayed, A. Dracopoulos, **Sepideh Hariri**, et.al.,(2009), “Optical probing of photoreceptor function: theoretical model and experimental verification in an in-vivo rat model.” 2009 International BIOS Conference, Oral presentation.
18. K. Bizheva, Alireza .A.Moayed ,**Sepideh Hariri**, et.al, (2009), “A combined ERG and UHR OCT system for simultaneous recordings from the rat retina in-vivo.” 2009 International BIOS Conference, Oral presentation.
19. K.Bizheva, **Sepideh Hariri**, et.al. (2009) 3D visualization of rat retina morphology in-vivo, with high speed, ultrahigh resolution optical coherence tomography at 1060nm. Poster Presentation, ARVO International Conference.