

HARVEY A. FISHMAN, MD, PhD

EDUCATION

M.D.	Stanford University	Medical School	1995 - 00
Ph.D.	Stanford University	Chemistry/Neuroscience	1990 - 95
B.S.	Penn State University	Chemistry	1986 - 90

POSTGRADUATE TRAINING

Chief Resident	Stanford University	Ophthalmology	2004 - 05
Residency	Stanford University	Ophthalmology	2002 - 05
Research Fellowship	Stanford University	Medical Retina Research (Pre-residency)	2001 - 02
Internship	St. Mary's Hospital	Internal Medicine	2000 - 01
Post-Doctoral Medical Scholars Research	Stanford University	Neurobiology	1996 - 97

RESEARCH

On-going Human Clinical Trials at FishmanVision present – pres.

- 1. IPL for Treatment of Chalazion. Industry sponsored IRB Trial*
- 2. Tape Biopsy of the Eye to detect Conjunctival Melanoma and Ocular Microbiome: Investigator sponsored IRB Trial*
- 3. Cataract and Parkinson Disease: Industry sponsored IRB Trial*
- 4. Gut (and ocular) Microbiome and Dry Eye Disease: Industry sponsored IRB Trial*

Intensed Pulsed Light (IPL) for Dry Eye Disease and Chalazion 2019 – pres.

The use of Intense Pulsed Light in the treatment of dry eye disease, Demodex, and hordeola. IRB approved clinical trial at FishmanVision.

MicroBiome and Ocular Disease 2017 – pres.

Gut (and ocular) microbiome and dry eye disease using 16S rRNA sequence-based bacterial analysis. IRB approved clinical trial at FishmanVision

Novel Devices for Remote Optical Diagnosis and Treatment 2016 – pres.

Tele-ophthalmology devices for smart phone and web-based ocular diagnosis and treatment

Genetic Analysis of the Ocular Surface 2016 – pres.

Development of a diagnostic platform to perform tear film biopsies (TFB). TFB is a non-invasive technique to obtain DNA and/or RNA and/or protein(s) from the eye and characterize these molecules and diagnose serious and potentially lethal tumors on the surface of the eye. IRB

approved clinical trial at FishmanVision.

Dry Eye Disease Diagnostics 2016 – pres.
Novel Light Sensitivity Device (LuxIQ) for Quantitative Dry Eye Syndrome Evaluation, High Speed Blink Analysis for dry eye disease testing. IRB approved clinical trial at FishmanVision

ENTREPRENEURIAL VENTURES

Co-Founder, TearBio 2017 – pres.
Genetic analysis of the ocular surface. Microsurface analysis of conjunctival tumors, corneal disease and inflammatory disorders of the ocular surface.

Co-Founder, CoolDoctors 2016 – pres.
Inventor of EyecareLive, a live video telemedicine solution for Ophthalmology and Optometry. Comprehensive solution using a cloud-based Doctor's Portal designed to manage full telemedicine practice and mobile apps. Artificial intelligence and advanced analytics for chronic eye issues such as dry eye disease.

Co-Founder, AppMedicine 2012 - 15
*Developed a digital health platform (AppVisit) to enable providers to perform **asynchronous** virtual office visits. Utilized AppVisit in FishmanVision ophthalmology practice to perform over 1000 e-visits with patients. Conditions ranged from corneal ulcers to chronic dry eye management.*

Co-Founder, MobileDx 2010 - 12
Developed Eyephotobill for billing external photos on the iphone and EyeSnapi, a prototype digital medical platform for ophthalmology e-visits. Iphone app innovations for ophthalmology.

Co-Inventor of Sightmate (Low Vision Video Eyewear), Vuzix 2007 - 08
Co-Founded the initiative of developing video eyewear for patients with low vision focusing on Macular Degeneration (AMD) and Retinitis Pigmentosa (RP). Clinical investigator and director of clinical trials.

Surgical Investigator, PowerVision 2007 - pres.
Performed surgical procedures and investigated implantation strategies for PowerVision's FluidVision accommodating intraocular lens. Research surgeon for implantation and lens development.

Medical Director (Adv. Diagnostics and Technology), Plager Vision Center 2005 - 07
Clinical investigator for the FDA Phase 3 trial of surgical correction of presbyopia using scleral expansion bands.

Researcher, Caliper Technologies 1996 - 97
Developed different strategies to perform PCR on a Chip. Research investigator for laboratory on a Chip: Micromachined Capillary Electrophoresis (CE) Chip Arrays to Screen for Novel Protease Inhibitors. Microfluidics on a chip.

ACADEMIC APPOINTMENTS

Senior Research Scientist Stanford University **Ophthalmology** 2000 – 05

PRIVATE PRACTICE OPHTHALMOLOGY

Medical Director Harvey A. Fishman, MD **Ophthalmology** 2007 - pres.
A Professional Corp.,
Comprehensive Ophthalmology

Medical Director of Advanced Diagnostics and Technology Plager Vision Center **Ophthalmology** 2005 - 07
Comprehensive Ophthalmology
Cataract Surgery, Glaucoma
Dry Eye, Cornea & External Eye Disease

HOSPITAL APPOINTMENTS

Medical Staff El Camino Hospital Ophthalmology 2008 - pres.

ACADEMIC RESEARCH

Stanford University 2000 - 05
Founder and Director of Ophthalmic Tissue Engineering and Retinal Prosthesis Laboratory, Department of Ophthalmology: *Inventor of The Artificial Synapse Chip: A Neural Interface to the Visual System. Prosthetic electronic retina for the treatment of Age-Related Macular Degeneration (AMD). Stem cell and pigment epithelial cell transplantation strategies for AMD. Novel tissue engineering strategies using microfabrication. Use of microanalytical chemistry, microfluidics and surface science for the treatment of AMD and other ophthalmic diseases. Co-authored 22 papers, 7 patents. Licensed retinal prosthesis technology to VISX and PIXIUM Vision.*

Stanford University 1996 - 97
Post-Doctoral Medical Scholars Research: *Regenerating Retinal Ganglion Cells on a Chip: The Role of Neurotrophic Factors. Dr. Ben Barres*

Stanford University 1990 - 95
Dissertation Research: *Neurochemical Analysis at the Single-Cell Level Using Capillary Electrophoresis with Cell-Receptor Biosensors and Laser Detection: Dr. Richard N. Zare, Dr. Richard H. Scheller*

Penn State University 1988 - 90
Undergraduate Honors Thesis: *The Effect of Anodic Surface Treatment on the Oxidation of Catechols at Ultrasmall Carbon Ring Electrodes. Honors Research with Dr. Andrew G. Ewing*

Merck Sharp and Dohme 1989
Biochemistry Internship: *Analysis and Purification of Hepatitis B Vaccine*
Internship in Biochemical Process R&D with Dr. Gene Wampler

U.S. Department of Agriculture 1987
Summer Research: *Biophysical Analysis of Peach Pectin. Research with*
Dr. Marshall L. Fishman

AWARDS

MacKenzie Fellowship in Medicine 1998 - 00
Medical Scholar's Research Fellowship, Stanford Medical School 1996
W.R. Grace Pre-doctoral Fellowship in Chemistry 1993 - 94
Travel Award: International Conference on High Performance CE 1993
National Science Foundation Fellowship, Honorable Mention 1991
Howard Hughes Medical Institute Fellowship, Honorable Mention 1991
ONR Fellowship, Honorable Mention 1991
Valedictorian, Department of Chemistry, Penn State University 1990
I.M. Kolthoff Enrichment Award, 1990
National ACS Award in Analytical Chemistry
American Microchemical Society Award, National Chemistry Award 1990
Fleming-Meyer Award in Analytical Chemistry 1990
Phi Beta Kappa 1989 - 90
Phi Lambda Upsilon Award for Excellence in Chemistry 1990
Evan Pugh Scholar 1989 - 90
Phi Kappa Phi 1989
Senate Faculty Scholarship, Academic Excellence (Seniors with GPA > 3.96) 1987
President's Freshman Award (Freshman with 4.0 GPA in first term) 1987

CERTIFICATIONS

National Medical Board Examination, Completed Parts I, II, and III 2000
American Board of Ophthalmology (Board Certified) 2007, 2017
Fellow of American Academy of Ophthalmology 2007

LICENSURE

California Medical License # A78707 2000 – pres.

PROFESSIONAL ACTIVITIES

Stanford Medical School: Introduction to Ophthalmology 2013 - pres.
Course Instructor for Medical Students
Vista Low Vision Center, Board Member 2005 - 2010
Palo Alto and Santa Cruz, CA
Member of Stanford Biodesign Group, (Bio-X) 2002- 05

Member of Executive Committee on Ophthalmic Research, Stanford Department of Ophthalmology	2000 - 04
Symposium Organizer and Session Chair: 1997 Stanford Health Policy Forum <i>Web Medicine: Who Will Catch the Wave?</i>	1997
Associate Director, California Separation Science Society	1992 - 95
Symposium Organizer and Session Chair: ACS Pacific Conference <i>Chemical Analysis at the Single-Cell Level</i>	1992

PROFESSIONAL AFFILIATION

American Academy of Ophthalmology (AAO)
American Board of Ophthalmology (ABO)

NIH STUDY SECTION

Ad hoc reviewer for Biology and Diseases of the Posterior Eye (BDPE) study section (formerly VISC).
February 26-27, 2004

EDITORIAL RESPONSIBILITIES

Ad hoc reviewer - IOVS
Ad hoc reviewer - Journal of Neural Engineering
Ad hoc reviewer - Current Eye Research
Ad hoc reviewer - IEEE, Journal of Rehabilitation Research and Development

PUBLICATIONS

1. **H. A. Fishman**,* L.M. Periman, A. A. Shah. "Real-Time Video Microscopy of *In Vitro* Demodex Death by Intense Pulsed Light." *Photobiomodul Photomed Laser Surg.* **2020**; Jan 27 (Epub ahead of print)
2. J. Raffi, R. Suresh, T Berger, **H. Fishman**, J.E. Murase. "Nonsteroid management of residual ocular surface disease on dupilumab (ROSDD)." *Int J Womens Dermatol.* **2019**; 5(5), 383.
3. J. Raffi, R. Suresh, **H. Fishman**, N. Botto, J.E. Murase. "Investigating the role of allergic contact dermatitis in residual ocular surface disease on dupilumab (ROSDD)." *Int J Womens Dermatol.* **2019**; 5(5), 383. " *Int J Womens Dermatol.* **2019**; 5(5), 308-313.
4. A. F. Baqai, **H. A. Fishman**.* "Dry Eye Disease Associated with Lower Gut Microbiome Diversity." *Invest. Ophthalmol. Vis. Sci.* **2019**; 60(9), 2760.
5. **H. A. Fishman***, P. Borden, M. Klein. "Novel Light Intensity Device (LuxIQ) for Quantitative Evaluation of Dry Eye Syndrome." *Invest. Ophthalmol. Vis. Sci.* **2017**; 58(8), 2705.

6. T. Leng, **H. A. Fishman**. "Carbon Nanotube Bucky Paper as an Artificial Support Membrane for Retinal Cell Transplantation." *Ophthalmic Surg Lasers Imaging*. **2013**, 44(1), 73-76.
7. N. M. Mehenti, **H. A. Fishman**, S. F. Bent.* "A Model Retinal Interface based on Functional Chemical Stimulation." *Biomed Microdevices*. **2007**, 9(4), 579-586.
8. C. J. Lee, **H. A. Fishman**, S. F. Bent.* "Spatial Cues for the Enhancement of Retinal Pigment Epithelial Cell Function in Potential Transplants." *Biomaterials*, **2007**, 28(13), 2192-2201.
9. J. T. Lu, C. J. Lee, S. F. Bent, **H. A. Fishman**, E. E. Sabelman. "Thin Collagen Film Scaffolds for Retinal Epithelial Cell Culture." *Biomaterials*, **2007**, 28(8), 1486-1494.
10. K. Wang*, **H. A. Fishman**, H. Dai, and J. S. Harris. "Neural Stimulation with a Carbon Nanotube Microelectrode Array." *Nano Lett*. **2006**, 6(9), 2043 - 2048
11. N. M. Mehenti, G. S. Tsien, T. Leng , **H. A. Fishman**, S. F. Bent.* "A Model Retinal Interface based on Directed Neuronal Growth for Single-Cell Stimulation." *Biomed Microdevices*. **2006**, 8(2), 141-150.
12. C. J. Lee, J. A. Vroom, **H. A. Fishman**, S. F. Bent.* "Determination of Human Lens Capsule Permeability and its Feasibility as a replacement for Bruch's Membrane." *Biomaterials*, **2006**, 27(8), 1670-1678.
13. T. Leng, P. Wu, N. M. Mehenti, M. F. Marmor, M. S. Blumenkranz, S. F. Bent, **H. A. Fishman**.* "Directed Retinal Nerve Cell Growth for a High-Resolution Retinal Prosthesis. *Invest. Ophthalmol. Vis. Sci.*, **2004**, 45(11), 4132-4137.
14. M. C. Peterman, J. Noolandi, M. S. Blumenkranz, **H. A. Fishman**.* "Localized Chemical Release from an Artificial Synapse Chip." *Proc. Natl. Acad. Sci. USA*, **2004**, 101(27): 9951-9954.
15. D. V. Palanker, P. Huie, A. Vankov, Y. Freyvert, H. A. Fishman, M. F. Marmor, M. S. Blumenkranz, *Progress in Biomedical Optics and Imaging*, **2004**, 5(3), 306-314.
16. N. M. Mehenti, **H. A. Fishman**,* S. F. Bent.* "Pushing the Limits of Artificial Vision." *IEEE Potentials*, **2004**, 23 (1), 21-23.
17. M. C. Peterman, J. Noolandi, M. S. Blumenkranz, **H. A. Fishman**.* "Fluid Flow Past an Aperture in a Microfluidic Channel." *Anal. Chem.* **2004**, 76(7): 1850-1856.
18. D. V. Palanker, P. Huie, A. Vankov, R. Aramant, M. Seiler, **H. Fishman**, M. Marmor, M. S. Blumenkranz. "Migration of Retinal Cells through a Perforated Membrane. Implications for a High Resolution Prosthesis." *Invest. Ophthalmol. Vis. Sci.*, **2004**, 45, 3266-3270.
19. C. J. Lee, **H. A. Fishman**,* S. F. Bent.* "Controlling Cell Adhesion on Human Tissue by Soft Lithography." *Langmuir*, **2004**, 20(10), 4155-4161.
20. M. C. Peterman, N. Z. Mehenti, K. V. Bilbao, C. Lee, T. Leng, J. Noolandi, S. F. Bent, M. S. Blumenkranz, **H. A. Fishman**.* "The Artificial Synapse Chip: A flexible retinal interface based on directed retinal cell growth and neurotransmitter stimulation." *Artificial Organs*, **2003**, 27, 975-985.

21. J. Noolandi, M. C. Peterman, P. Huie, C. Lee, M. S. Blumenkranz, **H. A. Fishman**.* “Towards a neurotransmitter-based retinal prosthesis using an inkjet printer head.” *Biomed. Microdev.*, **2003**, *5* (3), 195-199.
22. M. C. Peterman, P. Huie, D. M. Bloom, and **H. A. Fishman**.* “Building thick photoresist structures from the bottom up.” *J. Micromech. and Microeng.*, **2003**, *13*, 380-382.
23. M. C. Peterman, D. M. Bloom, C. Lee, S. F. Bent, M. F. Marmor, M. S. Blumenkranz, **H. A. Fishman**.* “Localized neurotransmitter release for use in a prototype retinal interface.” *Invest. Ophthalmol. Vis. Sci.*, **2003**, *44*, 3144-3149.
24. Y. Y. Lua, T. L. Niederhauser, B. A. Wacaser, I. A. Mowat, A. T. Woolley, R. C. Davis, **H. A. Fishman**, M. R. Linford. “Chemomechanical production of submicron edge width, functionalized, similar to 20 μ m features on silicon.” *Langmuir*, **2003**, *19*(4), 985-988.
25. M. C. Peterman, C. J. Lee, T. Leng, P. Huie, D. M. Bloom, **H. A. Fishman**.* “Novel Interface to Biological Systems for Retinal Prosthetics.” *Materials Research Society Symposia Proceedings*, **2002**, 729, U4.4.
26. M. C. Peterman, J. M. Ziebarth, O. Braha, H. Bayley, **H. A. Fishman**,* D. M. Bloom. “Ion Channels and Lipid Bilayer Membranes under High Potentials using Microfabricated Apertures.” *Biomed. Microdev.* **2002**, *4*, 231-236.
27. C. J. Lee, P. Huie, T. Leng, M. C. Peterman, M. F. Marmor, M. S. Blumenkranz, S. F. Bent, **H. A. Fishman**.* “Microcontact Printing on Human Tissue for Retinal Cell Transplantation.” *Arch. Ophthalm.*, **2002**, *120*, 1714-1718.
28. O. Orwar, K. Jardemark, C. Farre, I. Jacobson, A. Moscho, J. B. Shear, **H. A. Fishman**, S. J. Lillard, R. N. Zare. “Voltage-Clamp Biosensors for Capillary Electrophoresis.” *Methods in Enzymol.*, **1999**, *294*, 189-208.
29. **H. A. Fishman**, D. R. Greenwald, R. N. Zare. “Biosensors in Chemical Separations.” *Annual Review of Biophysics and Biomolecular Structure*, **1998**, *27*, 165-198.
30. O. Orwar, K. Jardemark, I. Jacobson, A. Moscho, **H. A. Fishman**, R. H. Scheller, R. N. Zare. “Patch-Clamp Detection of Neurotransmitters in Capillary Electrophoresis.” *Science*, **1996**, *272*, 1779-1782.
31. **H. A. Fishman**, O. Orwar, N. L. Allbritton, J. B. Shear, R. H. Scheller, R. N. Zare. “Cell-to-Cell Scanning in Capillary Electrophoresis.” *Anal. Chem.*, **1996**, *68*, 1181-1186.
32. **H. A. Fishman**, O. Orwar, R. H. Scheller, R. N. Zare. “Identification of Receptor Ligands and Receptor Subtypes Using Antagonists in a Capillary Electrophoresis Single-Cell Biosensor Separation System.” *Proc. Natl. Acad. Sci. USA*, **1995**, *92*, 7877-7881.
33. J. B. Shear, **H. A. Fishman**, N. L. Allbritton, D. Garigan, R. N. Zare, R. H. Scheller. “Single Cells as Biosensors for Chemical Separations.” *Science* **1995**, *267*, 74-77.
34. O. Orwar, **H. A. Fishman**, N. E. Ziv, R. H. Scheller, R. N. Zare. “Use of 2,3-Naphthalenedicarboxaldehyde Derivatization for Single-Cell Analysis of Glutathione by Capillary Electrophoresis and Histochemical Localization by Fluorescence Microscopy.” *Anal. Chem.* **1995**, *67*, 4261-4268.

35. O. Orwar, **H. A. Fishman**, M. Sundahl, V. Banthia, R. Dadoo, R. N. Zare. "Determination of Photodestruction Quantum Yields Using Capillary Electrophoresis: Application to o-Phthalaldehyde/b-Mercaptoethanol-Labeled Amino Acids." *J. Liq. Chromatogr.* **1995**, *18(18&19)*, 3833-3846.
36. **H. A. Fishman**, N. M. Amudi, T. T. Lee, R. H. Scheller, R. N. Zare. "Spontaneous Injection in Microcolumn Separations." *Anal. Chem.*, **1994**, *66*, 2318-2329.
37. J. B. Shear, R. Dadoo, **H. A. Fishman**, R. H. Scheller, R. N. Zare. "Optimizing Fluorescence Detection in Chemical Separations for Analyte Bands Traveling at Different Velocities." *Anal. Chem.* **1993**, *65*, 2977-2982.
38. J. V. Sweedler, J. B. Shear, **H. A. Fishman**, R. N. Zare, and R. H. Scheller. "Analysis of Neuropeptides Using Capillary Zone Electrophoresis with Multichannel Fluorescence Detection." *Proc. SPIE-Int. Soc. Opt. Eng.* **1992**, *1439*, 27-33.
39. J. V. Sweedler; J. B. Shear, **H.A. Fishman**, R. N. Zare, R. H. Scheller. "Fluorescence Detection in Capillary Zone Electrophoresis Using a Charge-Coupled Device with Time-Delayed Integration." *Anal. Chem.* **1991**, *63*, 496-502.
40. **H. A. Fishman** and A. G. Ewing. "The effect of Anodic Surface Treatment on the Voltammetry of Catechols at Carbon Ring Electrodes." *Electroanalysis*, **1991**, *3*, 899-907

* Indicates Status as Senior Corresponding Author

PATENTS

1. H.A. Fishman, M. J. Dacey, T. Abuelata. Methods and Apparatuses for Remote Diagnosis and Prescription. *U. S. Patent 8,793,142*, **2014**.
2. P. Huie and H. A. Fishman. Nanotube Mat with an Array of Conduits for Biological Cells. *U. S. Patent 7,255,871*, **2007**.
3. H. A. Fishman, D. M. Bloom, S. F. Bent, M. C. Peterman, J. Noolandi, N. Mehenti. Artificial Synapse Chip. *U. S. Patent 7,147,865*, **2006**.
4. H. A. Fishman, M S. Blumenkranz, S. F. Bent, D. M. Bloom, M. C. Peterman. Artificial Synapse Chip Interface for Electronic Prosthetic Retina. *U. S. Patent 7,001,608*, **2006**.
5. D. J. Loftus, T. Leng, P. Huie, H. A. Fishman, "Bucky Paper as a Support Membrane in Retinal Cell Transplantation." *U. S. Patent 7,135,172*, **2006**.
6. P. Huie, D. V. Palanker, H. A. Fishman, A. Vankov. "Interface for making Spatially Resolved Electrical Contact to Neural Cells in a Biological Neural Network." *U. S. Patent 7,058,455*, **2006**.
7. H. A. Fishman, M S. Blumenkranz, S. F. Bent, C. Lee, P. Huie, Jr., D. V. Palanker; "Microfabricated Tissue as a Substrate for Pigment Epithelium Transplantation." *U. S. Patent 6,939,378*, **2005**.
8. D. J. Loftus, T. Leng, H. A. Fishman, "Retinal Light Processing using Carbon Nanotubes." *U. S. Patent 6,755,530*, **2004**.

9. H. A. Fishman, J. B. Shear, J. V. Sweedler, L. Colon, R. N. Zare. "On-Column Derivatization in Capillary Electrophoresis." *U.S. Patent 5,318,680, 1994*
10. J. B. Shear, R. D. Dadoo, H. A. Fishman, N. Shafer, R. N. Zare. "System for Sample Detection with Compensation for Differences in Sensitivity to Detection of Components Moving at Different Velocities." *U.S. Patent 5,503,994, 1996.*
11. R. Dadoo, L. A. Colon, J. B. Shear, H. A. Fishman, R. N. Zare. "On-column Junction for Capillary Columns." *U.S. Patent 5,310,463, 1994.*

BOOK CHAPTERS

H. A. Fishman, D. R. Greenwald, R. N. Zare. "Biosensors in Chemical Separations." *Annual Review of Biophysics and Biomolecular Structure*, **1998**, 27, 165-198.

RESEARCH GRANTS

1. *The Artificial Synapse Chip: A Neural Interface to the Visual System*, Stanford BIO-X Interdisciplinary Initiatives Program research grant of \$166,000 for 2000-2002. Principal Investigator
2. *Capillary Electrophoresis of Single Neurons*, A National Institute of Mental Health research grant of \$300,000 for 1991-1993. Co-authored while graduate student with R. N. Zare, R. H. Scheller, J. B. Shear
3. *Drug Assays using Electrophoresis with Cell Biosensors*, A National Institute of Drug Abuse research grant of \$400,000 for 1994-1999. Co-authored while graduate student with R. N. Zare, R. H. Scheller, O. Orwar.

INVITED PRESENTATIONS

1. "Hacking Dry Eye Disease using Intense Pulsed Light (IPL)" **Invited Speaker to ALLDocs 2019 Annual Meeting**, Bermuda, October 2019.
2. "The Microbiome and Ocular Health." **Invited Speaker to ALLDocs 2018 Annual Meeting**, Live Aqua Beach Resort Cancún, November 2018.
3. "Diagnosing Dry Eye Syndrome with LuxIQ™ Study" **Invited Speaker to AAO 2017 Symposium "Let There Be Light."** *American Academy of Ophthalmology*, New Orleans, LA, November 2017.
4. "Out of the Box Clinical Pearls for Eye Pain." **Invited Speaker to ALLDocs 2017 Annual Meeting**, Marriott Wailea Beach Resort, Maui, Hawaii, November 2017.
5. "AppVisit." Harvey A. Fishman.* **Invited Speaker in Digital Ophthalmology Showcase (<http://ois.net/appvisit-ois-2014/>).** *OIS American Academy of Ophthalmology*, Chicago, IL November 2014

6. "Artificial Vision Panel Discussion." Harvey A. Fishman.* **Invited Speaker.** *American Academy of Ophthalmology Meeting, Retina 2004* Subspecialty Day.
7. "Retinal Neurotransmitter Prosthesis." Harvey A. Fishman.* **Invited Seminar.** FASEB Summer Research Conferences Retinal Neurobiology and Visual Processing July 17-22, 2004, Vermont Academy, Saxtons River, Vermont Chicago, Il. **7/17/04.**
8. "Towards an Artificial Prosthetic Retina." Harvey A. Fishman.* **Invited Seminar.** *Frontiers in Vision Science.* Gerhard Cless Endowed Lecture. University of Illinois, Chicago, Il. **10/12/03.**
9. "The Artificial Synapse Chip." Harvey A. Fishman.* **Invited Seminar.** *American Academy of Ophthalmology Meeting, Retina 2003* Subspecialty Day.
10. "The Artificial Synapse Chip." Harvey A. Fishman.* **Invited Seminar.** *First DOE Symposium on Artificial Sight, Ft. Lauderdale, Fl. 5/2/03.*
11. "The Artificial Synapse Chip: Integrating the Retinal Prosthesis into the Neural Substrate" Harvey A. Fishman.* **Invited Seminar.** *Frontiers in Vision Science.* Bascom Palmer Eye Institute, Miami, Fl. **4/23/03.**
12. "Prosthetic Electronic Retina." Harvey A. Fishman.* **Invited Seminar.** *The Luce Faculty Seminar 2003: Mind Computer Interactions,* Harvey Mudd College, **3/3/03.**
13. "The Artificial Synapse Chip." Harvey A. Fishman.* **Invited Seminar.** *American Academy of Ophthalmology Meeting, Retina 2002* Subspecialty Day.
14. "The Artificial Synapse Chip." Harvey A. Fishman.* **Invited Seminar.** *Research to Prevent Blindness: 16th Biennial Eye Research Seminar 2002.*
15. "The artificial synapse chip: a novel interface for a retinal prosthesis based on neurotransmitter stimulation and nerve regeneration." Harvey A. Fishman.* **ARVO Oral Presentation.** *Association for Research in Vision and Ophthalmology,* 2002.
16. "Towards an Artificial Prosthetic Retina." Harvey A. Fishman.* **Invited Seminar.** *Santa Clara Valley" (Silicon Valley, California) IEEE Lasers & Electro-Optics Society (LEOS) Seminar. 5/28/02.*
17. "The Artificial Synapse Chip: A Neural Interface to the Visual System." Harvey A. Fishman.* **Invited Seminar.** Stanford Vision Group, Stanford University, **6/28/02.**
18. "Advances in Tissue Engineering for Macular Disorders." Harvey A. Fishman.* **Invited Seminar.** VISX Research Symposium, Santa Clara, CA, **4/2/02.**
19. "The Artificial Synapse Chip: An Interface for a Prosthetic Retina." Harvey A. Fishman.* **Invited Seminar.** Stanford Brain Research Seminar Theme Group, Stanford University, **3/7/02.**
20. "The Artificial Synapse Chip: A Neural Interface to the Visual System." Harvey A. Fishman.* **Invited Seminar.** Bio-X Interdisciplinary Initiatives Symposium, Stanford University, **3/1/02.**
21. "Advances in Tissue Engineering for Macular Disorders." Harvey A. Fishman.* **Invited Seminar.** Ophthalmology Ground Rounds, Stanford University, **2/5/02.**

22. "Treating Blindness with a BioMEMS Device." Harvey A. Fishman.* **Invited Seminar.**, Applied Physics Department Seminar, Stanford University, Stanford University, **2/4/02.**
23. "Rebuilding Damaged Tissues Using Nanofabrication." Harvey A. Fishman.* **Invited Seminar.** Urology Ground Rounds, Stanford University, **1/25/02.**
24. "Ophthalmic Tissue Engineering." Harvey A. Fishman.* **Invited Seminar.** Stanford University Biodesign Seminar, **10/22/01.**
25. "Ophthalmic Tissue Engineering. New Advances in Age-Related Macular Degeneration." Harvey A. Fishman.* **Invited Seminar.** Denison University, Department of Chemistry and Biochemistry, **9/21/01.**
26. "Soft Lithography on Human Tissue." Harvey A. Fishman.* **Invited Talk.** BioMEMS and Biomedical NANO technology World **2001**, September 22-25, Hilton Columbus Hotel, Columbus, OH..
27. "Methods for Minimizing Ubiquitous Injection in Capillary Electrophoresis." H. A. Fishman, N. M. Amudi, T. T. Lee, R. N. Zare. **Invited Presentation** at the **1994** HPCE Meeting in San Diego, CA.
28. "Analysis of Neuropeptides and DNA from Biological Micro Environments Using Capillary Electrophoresis and Fluorescence, Electrochemical and Radiometric Detection." H.A. Fishman, R.H. Scheller, R.N. Zare. **Invited Presentation** at **1992** ALEX Conference.
29. "Spatially Resolved Analysis of Aplysia Bag Cell Neurons Using Capillary Electrophoresis with Laser-Induced Fluorescence Detection." J.B. shear, H. A. Fishman, S. Gelber, R.H. Scheller, R. N. Zare. **Invited Presentation** at the National Institutes of Mental Health Conference on Molecular and Cellular Neurobiology, Keystone, Co, **1992.**
30. "High Sensitivity Analysis of Biological Microenvironments using Capillary Electrophoresis with a Two-Dimensional Charge Coupled Device." H. A. Fishman, J. B. Shear, J. V. Sweedler, and R. N. Zare. Presented at the **1992** Pittsburgh Conference and Exhibition in New Orleans.
31. "Characterization of Neuropeptides from the Mollusk *Aplysia californica* Using Capillary Electrophoresis with Laser-Induced Fluorescence Detection." R. N. Zare, H. A. Fishman, J. B. Shear, J.V. Sweedler, R. H. Scheller. **Invited Presentation** at the **1992** Pittsburgh Conference and Exhibition in New Orleans.
32. "Capillary Zone Electrophoresis in DNA and Protein Separations: Practical Considerations." **Invited Presentation** at the AOAC National Meeting, Phoenix, August **1991.** Harvey A. Fishman and Richard N. Zare.

NEWS REPORTS

- "AppVisit Overview by Co-Founder Harvey Fishman, MD, PhD." ASCRS EyeWorld Interview on AppMedicine: <http://ois.net/appvisit-overview-co-founder-harvey-fishman-md-phd/>. October 16, 2014.

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