

## Deborah Zelinsky, O.D., F.N.O.R.A., F.C.O.V.D. Connecting Optometry with Neuroscience

1414 Techny Road Northbrook, IL 60062 Phone: (847) 501-2020 Fax: (847) 501-2021

> Website: www.mindeye.com Email: mindeyeconnection@gmail.com

### **Curriculum Vitae**

Education		University of Illinois Major – Statistics	Champaign, <b>I</b> L	
Professional Experience	1981 – 1983	Illinois College of Optometry Bachelor of Science in Visual Science (B.S.V.S.)	Chicago, IL	
	1981 – 1985	Illinois College of Optometry Doctorate in Optometry (O.D.)	Chicago, IL	
	1984 – 1984	Minneapolis Society for the Blind Low Vision Externship with Russ Osnes, O.D.	Minneapolis, MN	
	1985 – 1987	Ft. Lauderdale Eye Institute Staff Optometrist	Ft. Lauderdale, FL	
	1988 – 1989	Sunrise Rehabilitation Institute Consultant for Brain Injured Patients	Sunrise, FL	
	1986 – 1989	Eye Contact, Private Practice Emphasis on Optometric Rehabilitation	Coral Springs, FL	
	1988 – 1991	Schwartzman-Steinberg Low Vision Clinic Director of Macular Degeneration Clinic	Ft. Lauderdale, FL	
	1992 – preser	<ul> <li>The Mind-Eye Connection, now Mind-Eye Institute         Emphasis on the Diagnosis, Treatment and Rehabilitation         of Patients with:         <ul> <li>Traumatic Brain Injury</li> <li>Autism and Developmental Delay</li> <li>Processing and Learning Difficulties</li> </ul> </li> </ul>	Northbrook, IL	
	2001 – present C	consultant in Optometric Litigation	Chicago, <b>I</b> L	
Featured/Mentioned	2012 – present C	linical Associate Professor at Western University of Health Sciences	Pomona, CA	
in Books	2015 Featured in a Book "The Ghost in My Brain: How a Concussion Stole my Life Viking Publishers 2015 and How the New Science of Brain Plasticity Helped Me Get It Back, by Clark Elliott, ISBN 978-0525426561			
	2016 Mentioned in New York Times Best Seller "The Brain's Way of Healing" by Norman Doidge, Viking-Penguin Publishers 2015, ISBN-13: 978-0143128373			
	2019 Discus	2019 Discussed on pg. 381 in 2 <sup>nd</sup> Edition of "Outsmarting Autism" by Patricia Lemer		
	2020 Mentioned in "Just Give Me the Road", Anne Marie Romer ISBN-13: 978-1970063486			
	Mentioned in "Are You Drowning?: Overcoming in the Midst of Trauma and Loss",  Jenna Shotmeyer ISBN-13: 978-0578982427			
		Discussed as part of a brain injury protocol in "The Silent Epidemic: What Everyone Should Know About Brain Injury" by Mark John Condon ISBN 978-1664153028		
	2023 Intervi	ewed for "All in the Mind", by Lynne Malcolm ABC Books UPC 978-07333	12424	
Languages	English (Primary) French (Fluent)			

English (Primary)
French (Fluent)
Greek (Conversational)
Spanish (Minimal)

## **PRESENTATIONS**

Brain Injury,
Alzheimer's,
Neurology,
Cardiology,
Ophthalmology,
Neuro-Optometry

- Inclusion of Brain Mapping and Retinal Neuromodulation in Eye Care Policy Los Angeles, CA
- Shedding Light on the Connection between Retinal Circuitry & Brain Function Saudi Arabia (Virtual N20 Neuroscience summit, writing policy for G20 Leaders)
- Influencing Mental Health Through an Overlooked Mind-Eye Connection Buenos Aires, Argentina N20 Neuroscience summit, writing policy for G20 Leaders



### Deborah Zelinsky, O.D., F.N.O.R.A., F.C.O.V.D. **Connecting Optometry with Neuroscience**

1414 Techny Road Northbrook, IL 60062 Phone: (847) 501-2020 Fax: (847) 501-2021

> Website: www.mindeve.com Email: mindeyeconnection@gmail.com

**Deborah Zelinsky** 

#### Curriculum Vitae (cont.) page 2 of 4 Neuroplasticity of Visual Processing

Madrid and Barcelona, Spain North Carolina's Family Physician's -- Neuro-Optometry and Concussions Asheville, NC 93rd Annual American Congress of Rehabilitative Medicine (ACRM) The Neurological Effect of Lenses and Puzzles on Brain Plasticity Chicago, IL 12th Annual Congress for Brain Mapping and Therapeutics, Chairperson Los Angeles, CA Ocular Measurements as Novel Diagnostic and Therapeutic Tools in Brain Function Lutheran General Hospital Rehabilitation Department See with Your Ears Park Ridge, IL World Congress on Neuro-Therapeutics: Basel, Switzerland Dilemmas, Debates & Discussions (DDDN Behavioral Optometry Academy Foundation The Importance of Having a Solid Mind-Eye Connection Maintz, Germany Cedars-Sinai Medical Center Retinal Stimulation as a means of neuromodulation West Hollywood, CA 2<sup>nd</sup> International Conference on Neurology and Therapeutics Chicago, IL Non-invasive assessment and treatment of autonomic function 10th Annual Congress for Brain Mapping & Image Guided Therapy Baltimore, MD Unexpected effects of selective retinal stimulation on metabolism 3rd International Conference on Clinical and Experimental Ophthalmology Chicago, IL The effect of retinal stimulation on internal visualization systems 1st International Symposium on Deep Brain Connectomics Clermont-Ferrand, France Effects on deep brain circuitry by modulation of retinal signals 9th Annual World Congress for Brain Mapping & Image Guided Therapy Toronto, CAN Non-invasive assessment and treatment of autonomic function 1st International Conference on Clinical Research in Cardiology San Francisco, CA Overlooked effects of ambient lighting on cardiovascular disease 1st International Conference on Clinical Research in Ophthalmology San Francisco, CA Clinical applications of interactions among the cornea, muscles and retina 6th International Congress of Behavioral Optometry Pomona, CA A Novel Contribution to the Optometric Rehabilitation of Amblyopia Society for Applied Neuroscience Seville, Spain Clinical Applications of the Neurological Aspects of Lenses Illinois Brain Injury Foundation Chicago, IL The Mind-Eye Connection: How TBI affects Daily Function International Neuro-Optometric Rehabilitation Association Long Beach, CA Testing of the Ignored Retino-Collicular Pathway International Occupational Therapy Convention Athens, Greece

Occupational Therapy and Neuro-Optometry Together French Optometry Students - Guest Lecturer Paris, France **Beyond Traditional Vision Care** 

International Congress of Optometry: Melbourne. Australia Optometrists: Jugglers of Sensory and Motor Systems

Sutton Invitational Symposium The Z-Bell Test Auditory and Visual Linkages Skive, Denmark

Using Retinal Stimulation to Influence Glucose Regulation Annual Meeting 2023 Alzheimer's Association Amsterdam, Netherlands

The Importance of a Mind-Eye Connection, Congressional Neuroscience Caucus Washington, DC



## Deborah Zelinsky, O.D., F.N.O.R.A., F.C.O.V.D. **Connecting Optometry with Neuroscience**

1414 Techny Road Northbrook, IL 60062 Phone: (847) 501-2020 Fax: (847) 501-2021

## Website: www.mindeve.com

NSTITUTE	Email: mindeyeconnection@gmail.com  Curriculum Vitae (cont.)  Page 3 of 4			
Deborah Zelinsky				
Autistic Spectrum and Learning Problems Low Vision	<ul> <li>The Mind-Eye</li> <li>Kids on the Mo</li> <li>Lutheran Gene</li> <li>Grayslake High</li> <li>The Breakers I</li> <li>Idaho Commis</li> <li>Neuro-Optor</li> <li>Blind Service</li> </ul>	wareness & Attention: How to Use Visual Clues in Autism Connection: Your Child's Window to the World ove Teaching Professionals about Brain Development eral Hospital Effects of Attention Deficit Disorder in Everyday h School Visualization and Reading Retirement Community Learning to Live with Macular Degenera sion for the Blind and Visually Impaired metry's Role in Visual Rehabilitation Association Enhancing Peripheral Vision in Macular Degeneration	Boise, ID ion Chicago, IL	
Pharmacology		Vision Conference A New Way of Seeing with Macular Degeneral Virtual Summit Changing Neurotransmitter Activity via Retinal Stimul		
AWARDS	2020 Theia Award	thers Award from the Neuro-Optometric Rehabilitation Associat for Innovation from Women in Optometry  Award for Leadership from Society for Brain Mapping & Thera		
PUBLICATIONS	how the e 2004 <u>An Insight</u> how new	eyes are connected to more than eyesight  to Vision Text and medical illustrations encompassing neuroscience research affects visual pathways	arrington Press, Inc.  Carrington Press, Inc.  Carrington Press, Inc.	
	2007 Neuro-Optor Rehabilita <i>Physical</i>	metric Diagnosis, Treatment and tion following Traumatic Brain Injuries. Zelinsky, D. Medicine and Rehabilitation Clinics of North America, 2007, Vol. 18:1, p 87-107	Elsevier	
	après les t	euron-optometrique prise en charge et readaptation raumas craniens D'Optometrie, No. 25, Avril 2008, ISSN 1632-806X	Optometric Society, France	
		ry Rehabilitation: Cortical and Subcortical Interfacing I Pathways. PM & R, September 2010, Vol 2 (9) p. 852-857	Elsevier	
	Functional Rakesh Sh http://www	ysis of Three Concurrent Processing Pathways, Magnetic Resonance Imaging - Advanced Neuroimaging Application narma (Ed.), May, 2012, ISBN: 978-953-51-0541-1 .intechopen.com/books/functional-magnetic-resonance-imaging-ad ging-applications/fmri-analysis-of-three-concurrent-processing-p	vanced-	
	Traumatio Available	sual Integration Assessment & Treatment in Brain Injury Rehab Brain Injury, Dr. Farid Sadaka (Editor), ISBN: 978-953-51-122 From http://www.intechopen.com/books/traumatic- brain-injury/antegration-assessment-and-treatment-in-brain-injury-rehabilitation	2-8, auditory-	
	Neurophot	ulation via Retinal Stimulation, Textbook of Advanced tonics and Brain Mapping. Drs. Yu Chen and Babak Kateb (Edit 9781482236859/	ors), Taylor Francis	
		ing Field of Neuro-Optometry Provides a Synergistic Effect with 017; 2:1075 http://remedyoa.com/pdfs_folder/roa-v2-id1075.pdf		
		on and Coordination, chapter in Patrick Quaid's book, Learning N 13: 978-1999059224	to See = Seeing to	

2019

2023 (pending chapter) Retinal Neuromodulation as an Influence on Brain Function Springer by Applying Nanoneuroscience Discoveries to be in upcoming 2<sup>nd</sup> edition of Textbook of Nanoneuroscience and Nanoneurosurgery ISBN 13: 978-1439849415

2021 How Eyeglasses Impact the Brain, Chapter 12 in Concussion Discussions, Edited by Amy

Zellmer and Shane Steadman ISBN 13: 9781736632000

Advances in Computer Vision pp 564-579 Elliott C, Putnam, C, Zelinsky D, et al, Using the

Z-bell<sup>SM</sup> Test to Remediate Spatial Deficiencies in Non-Image-Forming Retinal Pathways



# Deborah Zelinsky, O.D., F.N.O.R.A., F.C.O.V.D. Connecting Optometry with Neuroscience

1414 Techny Road Northbrook, IL 60062 Phone: (847) 501-2020 Fax: (847) 501-2021

> Website: www.mindeye.com Email: mindeyeconnection@gmail.com

Peper	INSTITUT					
regarding scotopic sensitivity in Naval recruits  2005 - present The Effects of Retinal Stimulation on Auditory Localization  2005 - present MeMbar of Optometric Extension Program (O.E.P.)  1886 - present Member of Optometric Extension Program (O.E.P.)  1889 - present (Fellowship in 2019) Charter Member of the Neuro-Optometric Rehabilitation Association (N.O. 2008 - 2021		Curriculum Vitae (cont.)	Page 4 of 4			
PROFESSIONAL MEMBERSHIPS  1985 – present Member of Optometric Extension Program (O.E.P.) 1985 – present Member of Deflowship in 2010) Charter Member of the Neuro-Optometric Rehabilitation Association (N.O.) 2008 – 2021 Community Leader for the Society for Neuroscience (SFN) NeurOnline 2009 – 2021 Member of the American Association for the Advancement of Science (AAAS) 2009 – present Member of the Society for Brain Mapping and Therapeutics 2011 – reinstated as a Fellow Member of the College of Optometrists in Vision Development (F.C.O.V.D.) Originally earned in 1989. 2013 – present Member of the American Optometric Association 2023 – President 2023-24 Society for Brain Mapping and Therapeutics 3013 – present Member of the American Optometric Association 2023 – President 2023-24 Society for Brain Mapping and Therapeutics 3014 – present dember of the American Optometric Association 2023 – President 2023-24 Society for Brain Mapping and Therapeutics 3015 – present Member of the American Optometric Association 2020 – present Brain Mapping and Therapeutics 3020 – President 2023-24 Society for Brain Mapping and Therapeutics 3021 – Programs Programs of Defense Congressionally Directed Medical Research and Development Programs 3022 – President 2023-24 Society for Brain Mapping and Therapeutics 3023 – President Management Panel Peer Review of the Nutlivisciptinary Research 3024 – Proposals for the Extramural Traumatic Brain Injury Research Program's Intramural Applied Research 3025 – Society of Proposals for Dept. of Defense's Congressionally Directed Medical Research Program's Fiscal Year 2016 3226 – Present Jose of Marchall Association Program Programs Fiscal Year 2016 3227 – Present Remedy Open Access Ophthalmology Journal 3228 – Present Remedy Open Access Ophthalmology Journal 3229 – Present Remedy Open Access Ophthalmology Journal 3229 – Present Remedy Open Access Ophthalmology Journal 3220 – Present Scientific Learning Corporation program to optometrists in Exploration of ystaul/auditory Interactions in Patients Pr	RESEARCH		. Suzanne Krause			
MEMBERSHIPS   1985 - present Member of Optometric Extension Program (O.E.P.)		2005 - present The Effects of Retinal Stimulation on Auditory Localization				
Grant Reviewer Traumatic Brain Injury  2007 Clinical Management Panel Peer Review of the Investigator Initiated and New Investigator Proposals for the Extramural Traumatic Brain Injury Research Program  2008 Clinical Treatment and Rehabilitation Panel Peer Review of the Multidisciplinary Research Program  2008 Clinical Treatment and Rehabilitation Panel Peer Review of the Multidisciplinary Research Program  2009 Blast Peer Review Panel for the Defense Medical Research Program Sortem Advanced Technology Development  2014 Screening tools for mild Traumatic Brain Injury  2008 Eye and Vision Research Program's Fiscal Year 2008  2016 Vision Research Program's Fiscal Year 2008  2017 Vision Research Program's Fiscal Year 2016  2018 Editorial Reviewer  Editorial Reviewer  Editorial Reviewer  Editorial Reviewer  Editorial Reviewer  Traumatic Brain Injury  2019 Present Elsevier's Physical Medicine and Rehabilitation Journal 2014 Present JoVE (Journal of Visualized Experiments) Peer Reviewed Scientific Video Journal 2014 Present AbVE (Journal of Visualized Experiments) Peer Reviewed Scientific Video Journal 2014 Present AbVE (Journal of Visualized Experiments) Peer Reviewed Scientific Video Journal 2014 Present AbVE (Journal of Visualized Experiments) Peer Reviewed Scientific Video Journal 2014 Present AbVE (Journal of Visualized Experiments) Peer Reviewed Scientific Video Journal 2014 Present AbVE (Journal of Visualized Experiments) Peer Reviewed Scientific Video Journal 2014 Present AbVE (Journal of Visualized Experiments) Peer Reviewed Scientific Video Journal 2014 Present AbVE (Journal of Visualized Experiments) Peer Reviewed Scientific Video Journal 2014 Present AbVE (Journal of Visualized Experiments) Peer Reviewed Scientific Video Journal 2014 Present JoVE (Journal of Visualized Experiments) Peer Reviewed Scientific Video Journal 2014 Present JoVE (Journal of Visualized	MEMBERSHIPS	<ul> <li>1985 – present Member of Optometric Extension Program (O.E.P.)</li> <li>1989 – present (Fellowship in 2010) Charter Member of the Neuro-Optometric Rehabilitation Association (N.O 2008 – 2021 Community Leader for the Society for Neuroscience (SFN) NeurOnline</li> <li>2009 – 2021 Member of the American Association for the Advancement of Science (AAAS)</li> <li>2009 – present Member of the Society for Brain Mapping and Therapeutics</li> <li>2011 – reinstated as a Fellow Member of the College of Optometrists in Vision Development (F.C.O.V.D.) Originally earned in 1989.</li> <li>2013 – present Member of the American Optometric Association</li> </ul>				
Clinical Management Panel Peer Review of the Investigator Initiated and New Investigator Proposals for the Extramural Traumatic Brain Injury Research Program 2008   Clinical Treatment and Rehabilitation Panel Peer Review of the Multidisciplinary Research Consortium Proposals for the Extramural Traumatic Brain Injury Research Program 2009   Blast Peer Review Panel for the Defense Medical Research Program 2009   Blast Peer Review Panel for the Defense Medical Research Program's Intramural Applied Research and Advanced Technology Development 2014   Screening tools for mild Traumatic Brain Injury 2008   Eye and Vision Research Grant Proposals for Dept. of Defense's Congressionally Directed Medical Research Program's Fiscal Year 2016   Vision Research Grant Proposals for Dept. of Defense's Congressionally Directed Medical Research Program's Fiscal Year 2016   Vision Research Program - Cell-Based Therapies for Department of Defense's Congressionally Directed Medical Research Program - Cell-Based Therapies for Department of Defense's Congressionally Directed Medical Research Program - Sical Year 2016   Vision Research Program - Cell-Based Therapies for Department of Defense's Congressionally Directed Medical Research Program - Cell-Based Therapies for Department of Defense's Congressionally Directed Medical Research Program - Cell-Based Therapies for Department of Defense's Congressionally Directed Medical Research Program's Fiscal Year 2017   Vision Research Program - Cell-Based Therapies for Department of Defense's Congressionally Directed Medical Research Program's Fiscal Year 2016   Vision Peers to Journal 2014 - present JoVE (Journal of Visual Processing Program in Viena Austria Netherlands Program - Cell-Based Therapies (Program - Cell-Based Therapies) Program in Packet Reviewed Scientific Video Journal 2019 - Medical Advisory Board, Hope for HIE (Hypoxic Ischemic Encephalopathy) 2020 - Board of Directors, Society for Brain Mapping and Therapeutics   Program in 2012 - Exploration of visual Processing   Vision						
Clinical Treatment and Rehabilitation Panel Peer Review of the Multidisciplinary Research Consortium Proposals for the Extramural Traumatic Brain Injury Research Program  Blast Peer Review Panel for the Defense Medical Research Program's Intramural Applied Research and Advanced Technology Development  Eye and Vision Research  2014 Screening tools for mild Traumatic Brain Injury  Eye and Vision Research Program's Fiscal Year 2008  2016 Vision Research Program's Fiscal Year 2008  2017 Vision Research Program's Fiscal Year 2016  2017 Vision Research Program's Fiscal Year 2016  2018 Vision Research Program's Fiscal Year 2016  2019 Vision Research Program's Fiscal Year 2016  2010 – present Elsevier's Physical Medicine and Rehabilitation Journal 2014 – present Bleevier's Physical Medicine and Rehabilitation Journal 2014 – present Remedy Open Access Ophthalmology Journal 2014 – present Scientific Learning Corporation 2019 – Medical Advisory Board, Hope for HIE (Hypoxic Ischemic Encephalopathy) 2020 – Board of Directors, Society for Brain Mapping and Therapeutics  Teaching and Certification  Exploration of sensory-motor interactions program to the Society of European Optometrists in 2012 Exploration of patient-environment interactions program to optometrists in Exploration of visual/auditory integration program to optometrists in 2014 ImpACT certification for concussions at the NORA annual meeting 2015 Exploration of changes in retinal biochemistry in concussions 2016 Neuropalsaticity of Visual Processing 2017 Northbrook, IL 2017 Northbrook, IL 2017 Northbrook, IL 2017 Northbrook, Vision-beginning of certification process for Z-Bell Testing in 2018 Northbrook, IL 2017 Northbrook, Vision-beginning of certification process for Z-Bell Testing in 2018 Northbrook, IL 2019 Northbrook, Vision-beginning of certification process for Z-Bell Testing in 2019 Northbrook, IL 2017 Northbrook, Vision-beginning of certification process for Z-Bell Testing in 2018 Northbrook, IL 2019 Northbrook, Vision-beginning of certification process	Traumatic	2007 Clinical Management Panel Peer Review of the Investigator Initiated and New Investigator				
Advisory Committees  Teaching and Advisory Committees  Teaching and Certification  Teaching and Certification  Certification  Teaching and Certification  Teaching and Certification  Certification  Certification  Teaching and Certification  Certification  Certification  Certification  Teaching and Certification  Certi	Brain injury					
Eye and Vision   Research   2008   Eye and Vision Research Grant Proposals for Dept. of Defense's Congressionally Directed Medical Research Program's Fiscal Year 2008   Vision Research Program's Fiscal Year 2008   Vision Research Program's Fiscal Year 2016   2017   Vision Research Program - Cell-Based Therapies for Department of Defense's Congressionally Directed Medical Research Program - Fiscal Year 2016   Vision Research Program - Cell-Based Therapies for Department of Defense's Congressionally Directed Medical Research Program Fiscal Year 2017   Vision Research Program - Cell-Based Therapies for Department of Defense's Congressionally Directed Medical Research Program Fiscal Year 2017   Vision Research Program - Cell-Based Therapies for Department of Defense's Congressionally Directed Medical Research Program Fiscal Year 2017   Vision Research Program - Cell-Based Therapies Gongressionally Directed Medical Research Program Fiscal Year 2017   Vision Research Program - Cell-Based Therapies Gongressionally Directed Medical Research Program Fiscal Year 2017   Vision Research Program - Cell-Based Therapies Gongressionally Directed Medical Research Program Fiscal Year 2018   Vision Research Program - Cell-Based Therapies Gongressionally Directed Medical Research Program Fiscal Year 2017   Vision Research Program - Cell-Based Therapies Gongressionally Directed Medical Research Program fiscal Year 2017   Vision Alexandre Program In Directed Medical Research Program Fiscal Year 2017   Vision Program to optomative Vision Program to optomative Vision Program to optomative Vision Program in Vienna, Austria Northbrook, IL Northbrook, I	Grant Reviewer	• • • • • • • • • • • • • • • • • • • •				
Directed Medical Research Program's Fiscal Year 2008  2016 Vision Research Program's Fiscal Year 2016  2017 Vision Research Program's Fiscal Year 2016  2018 Vision Research Program's Fiscal Year 2016  2019 Vision Research Program's Fiscal Year 2016  2010 Vision Research Program's Fiscal Year 2017  Editorial Reviewer  2010 – present Elsevier's Physical Medicine and Rehabilitation Journal 2014 – present JoVE (Journal of Visualized Experiments) Peer Reviewed Scientific Video Journal 2016 – present Remedy Open Access Ophthalmology Journal  2004 – present Remedy Open Access Ophthalmology Journal 2004 – present Scientific Learning Corporation 2004 – present Scientific Learning Corporation 2009 – Medical Advisory Board, Hope for HIE (Hypoxic Ischemic Encephalopathy) 2020 – Board of Directors, Society for Brain Mapping and Therapeutics  Teaching and Certification  2011 Exploration of sensory-motor interactions program to the Society of European Optometrists in Brussels, Belgium 2012 Exploration of patient-environment interactions program to optometrists in Surphrook, IL Mainz, Germany 2014 ImpAcT certification for concussions at the NORA annual meeting Raleigh, North Carolina Vienna, Austria 2015 Exploration of changes in retinal biochemistry in concussions Northbrook, IL Neuroplasticity of Visual Processing The Overlooked Effect of Retinal Stimulation on Cardiovascular Health in Amsterdam, Netherlands  PATENTS  2008 U.S. Patent # 7,427,136 issued on the Z-bell <sup>SM</sup> Test Method	Eye and Vision	2014 Screening tools for mild Traumatic Brain Injury				
2014 – present JoVE (Journal of Visualized Experiments) Peer Reviewed Scientific Video Journal 2016 – present Remedy Open Access Ophthalmology Journal  2004 – present Scientific Learning Corporation 2019 – Medical Advisory Board, Hope for HIE (Hypoxic Ischemic Encephalopathy) 2020 – Board of Directors, Society for Brain Mapping and Therapeutics  Teaching and Certification  Teaching and Certification  2011 Exploration of sensory-motor interactions program to the Society of European Optometrists in Brussels, Belgium 2012 Exploration of patient-environment interactions program to optometrists, occupational and physical therapists Northbrook, IL Mainz, Germany 2014 ImPACT certification for concussions at the NORA annual meeting 1015 Exploration of changes in retinal biochemistry in concussions Northbrook, IL	Research	Directed Medical Research Program's Fiscal Year 2008  Vision Research Grant Proposals for Dept. of Defense's Congression Medical Research Program's Fiscal Year 2016  Vision Research Program - Cell-Based Therapies for Department of I	nally Directed Defense's			
## Advisory Committees    2004 - present Scientific Learning Corporation	Editorial Reviewer	2014 - present JoVE (Journal of Visualized Experiments) Peer Reviewed Scientific Video Journal				
European Optometrists in 2012 Exploration of patient-environment interactions program to optometrists, occupational and physical therapists Northbrook, IL 2013 Exploration of visual/auditory integration program to optometrists in Mainz, Germany 2014 ImPACT certification for concussions at the NORA annual meeting The Importance of Visual/Auditory Interactions in Patients - program in 2015 Exploration of changes in retinal biochemistry in concussions Northbrook, IL 2017 An Insight to Vision-beginning of certification process for Z-Bell Testing in Northbrook, IL 2017 Neuroplasticity of Visual Processing The Overlooked Effect of Retinal Stimulation on Cardiovascular Health in Amsterdam, Netherlands  PATENTS  Brussels, Belgium Mainz, Germany Raleigh, North Carolina Vienna, Austria Vienna, Austria Northbrook, IL Montreal, Canada Amsterdam, Netherlands	Advisory	2004 – present Scientific Learning Corporation 2019 – Medical Advisory Board, Hope for HIE (Hypoxic Ischemic Encephalopathy)				
2017 An Insight to Vision–beginning of certification process for Z-Bell Testing in Northbrook, IL 2017 Neuroplasticity of Visual Processing Montreal, Canada 2019 The Overlooked Effect of Retinal Stimulation on Cardiovascular Health in Amsterdam, Netherlands  PATENTS  2008 U.S. Patent # 7,427,136 issued on the Z-bell <sup>SM</sup> Test Method		European Optometrists in  2012 Exploration of patient-environment interactions program to optometri occupational and physical therapists  2013 Exploration of visual/auditory integration program to optometrists in  2014 ImPACT certification for concussions at the NORA annual meeting  2014 The Importance of Visual/Auditory Interactions in Patients - program in	sts, Northbrook, IL Mainz, Germany Raleigh, North Carolina n Vienna, Austria			
	PATENTS	<ul> <li>Neuroplasticity of Visual Processing</li> <li>The Overlooked Effect of Retinal Stimulation on Cardiovascular Healt</li> <li>U.S. Patent # 7,427,136 issued on the Z-bell<sup>SM</sup> Test Method</li> </ul>	ng in Northbrook, IL Montreal, Canada			

2009 U.S. Patent # 7,607,777 issued on alteration of corneal tear film

2015 U.S. Patent # 9,155,489 issued on retinal tolerance device

2011 U.S. Patent # 8,083,351 issued on alteration of body hormones through corneal tear film

2016 U.S. Patent # 9,433,354 issued for a device to assess retinal signal processing