



Adolph and Ruth Schnurmacher
Institute for Vision Research
State University of New York
State College of Optometry

June 2011

MEMORANDUM

TO: David Troilo, Dean
FROM: Jerome M. Feldman, Director of SIVR
RE: SIVR Annual Activity Report for 2010-2011
CC: David Heath, President
Ann Warwick, Vice President for Development

The SIVR Annual Activity Report for 2010-2011 is presented. Appendix I contains a description of activities that have been supported directly or indirectly, in whole or in part, by the SIVR budget. These include research grants, SIVR sponsored colloquia, presentations at scientific conferences, publications, and invited talks.

Appendix II contains the 2011-2012 SIVR Budget Request. We request the continued support for the following: Research support for small clinical projects; new grant and research innovation support; patient care research clinical grants; the SIVR Colloquium series; and, broker fees.

**The Schnurmacher Institute for Vision Research
State University of New York
State College of Optometry**

ANNUAL ACTIVITY REPORT

July 1, 2010- June 30, 2011

SIVR activity was strong again this year and once again affirmed the Institute's goal supporting and advancing scientific research and knowledge in basic and clinical vision science. The SIVR continued its support of faculty and students engaged in vision research, including those members of the Institute whose individual efforts in obtaining external federal grants, e.g., National Institutes of Health (NIH), National Science Foundation (NSF), and Department of Defense, complement the Institute's overall mission. The SIVR continued to encourage submission of external grant applications to support vision science research.

Summary of Direct SIVR Expenditures for 2010-2011

During 2010-2011, \$73,000 was allocated to SIVR and these expenditures were made:

SIVR funding of twenty-five thousand dollars was allocated as a stimulus for innovative collaborative research projects leading to further substantial federal and industry grant proposals. Each project paired a basic scientist with strong research skills and a clinical faculty member with expertise in a specific applied area of optometry. One project, "Improvement in Stereoacuity through Training with Correlated Cues," sought to provide evidence of how individuals learn to attend to and process simultaneous visual information. The implications of this research are applicable to the visual rehabilitation, a major clinical service at the college. Another project, "Computer-based Vision Syndrome (CVS) and Dry Eye in Office Workers," sought to identify factors contributing to dry eye. This, of course, has major direct clinical implications in eye health, particularly in contact lenses.

SIVR funding of eleven thousand dollars was also used to support the establishment of the Clinical Trials office as well as clinical optometric equipment to be used in patient-based clinical research, including projects like (Kathryn Richdale)

Fifteen thousand dollars was allocated for The SIVR Colloquium series. This is a forum where the SIVR is a major host for vision science talks from outstanding scientists in the world. It continued to attract an audience of SUNY scientists and

students, as well researchers and graduate students from the greater metropolitan area. Such talks often provide the seed for innovative research as well as collaborative efforts between scientists associated with different institutions, some of which can result in grants proposals as well as research sub-contracts. The 39 SIVR colloquia series this year included talks from scientists from the Salk Institute, Dalhousie University Ca., The National Eye Institute, Kyoto Japan, Boston Children's Hospital, Brown U., Rockefeller U., Harvard Medical School, Berlin Germany, Montreal Ca., Nottingham England, and others, including the Annual ARVO, VSS Practice talks and the Annual Graduate Student talks. SIVR funding also supported for the first time the 'Clinical Research Series.' These four talks focused on patient based clinical research.

Twelve thousand and four dollars was allocated to support a number of smaller clinical research Projects intended as pilot projects intended to garner further funding support from external agencies, particular business and industry. Examples of some of the supported projects included: attendance at a conference supporting writing patient-based clinical research grants to government and private industry and charitable foundations; object formation and perceptual representation; visual fields and quality of life in glaucoma patients; development of a VER protocol for brain injury and visual attention problems; retinal defocus and visual-motor performance; corneal epithelial wound healing and inflammatory responses; etc.

The remaining SIVR funding was directed at broker fees.

Indirect SIVR Support

1. **SIVR Invited Talks and Presentations**

Some SIVR supported research also resulted invited talks and presentations at national and international meetings and conferences in vision, including the Association for Research in Vision and Ophthalmology (ARVO-29 presentations), the American Academy of Optometry (AAO-24 presentations), the Vision Science Society (VSS-9 presentations), Neuroscience (NS-5 presentations), Optical Society of America (OSA-0). Faculty receiving SIVR support also gave invited talks at universities in the USA, Italy, Brazil, Japan, and China. In addition, Dr. Jose Alonso was featured on a PBS documentary special titled Magic and the brain, which aired on February 2, 2011. <http://www.pbs.org/wgbh/nova/body/psychology-magic.html>

2. **Publications**

There were 53 research publications by SIVR faculty-scientists in journals and book chapters. Many were in the most prestigious refereed scientific journals supported, in part, by SIVR funding.

3. **External Research Grants**

There were two new awards, a one year award by the US Army Medical and Research Material Command for Treatment of TBI (annual budget \$135,239), and a five year award by the National Eye Institute to study intracellular communication in the lens (annual budget of \$225,000) . In all, there were 10 active NIH RO1 grants, two NIH R21, one NIH T35, two NSF grants, two Department of Defense grant, 2 NIH subcontract, and one NIH R56 grant. There were also major grants from Topcon and from the Michael J. Fox foundation. Current external grant expenditures are estimated for 2010-2011 to approximate \$3,500,000 for the fiscal year.

4. **Relative National Standing of SIVR Supported Activities**

Our federal grant activity now places us in **6th place** in the rankings of all colleges of optometry.

5. **SUNY Strategic Plan Achievements**

The strategic plan for research and graduate programs resulted in the hiring of Dr. Kathryn Richdale, OD, MS, FAAO of The Ohio State University College of Optometry. Dr. Richdale's research is in: contact lenses, solutions, artificial tears, tear chemistry, presbyopia, and accommodation. She is an investigator of four clinical research grants. In addition, the searches for two faculty researchers in the areas of visual optics and visual physiology are currently underway. Support for patient-based clinical research was initiated by the establishment of The Clinical Trials Office this year. This office also coordinates with the SUNY Reach Initiative to foster

collaborative patient based clinical research among the four medical schools of SUNY and the college of Optometry. The CTO administrator also oversees IRBNet, an online ITB application process, which was implemented this year to support collaborative research.

6. The VisioNYC colloquia

The College continues to act as host for the highly regarded **VisioNYC Colloquium series**. This prestigious event brings together all of the major vision science researchers from the NYC area four times a year for a colloquium.

7. The SUNY Eye Institute (SEI)

The College of Optometry continues to be a major member of the SEI, a consortium of four SUNY Ophthalmology departments and the College of Optometry.

Appendix I Active Research Grants

PRINCIPAL INVESTIGATOR	SPONSOR	PROJECT TITLE	Direct Cost	Indirect Cost
Alonso, Jose Manual	2RO1EY005253-22	"Functional Connectivity in Primary Visual Cortex"	\$ 164,835	\$ 131,044
Alonso/Swadlow	1R21NS05975301A1	A new implantable array of ultra-thin electrodes for recording	\$ 132,125	\$ 33,429
Alonso, Jose Manual	National Science Foundation, IIS 0904727	Collaborative Research: Neuronal and Computational Models of Spatio-temporally varying natural scenes	\$ 53,433	\$ 19,841
Alonso, Jose Manual-	National Eye Institute, 1R01EY020679-01	Neuronal mechanisms of selective attention in early vision	\$ 250,000	\$ 102,216
Backus, Ben	2RO1EY01398804A2	Cue reliability & depth perception calibration in space percept.	\$ 150,000	\$ 78,847
Backus, Ben	NSF0810944	Pavlovian conditioning of visual perception	\$ 64,893	\$ 37,313

Ciuffreda, Ken	USAMRCC51449	Effect of Oculomotor Rehabilitation in Traumatic Brain Injury (TBI)	\$42,296	\$3,384
Ciuffreda, Ken	College of Optometrists In Vision Development	Effect of Oculomotor Rehabilitation in Traumatic Brain Injury (TBI)	\$ 2,125	\$ 375
Ciuffreda, Ken	National Eye Institute T35	Short-term Training Students in Health Professional Schools	\$ 42,296	\$ 3,384
Duckman, Bob	NEI sub U10EY11751	Amblyopia Treatment Trial	\$ 1	\$ 0
Dul. Mitch	Indiana/ NEI	Application of Psychophysical Models to Visual Disorders	\$ 67,543	\$ 31,345
Dul. Mitch (NC Ext)	Ciba Vision Corporation, N/A	Glaucoma Clinical Education and Research Institute	\$ 218,280	\$ 32,743
Gundel, R	Vision Care Institute	Cornea and Contact Lens Fellowship	\$ 998	\$ 148
Lee, Barry	National Eye Institute, 5R01EY013112-08	"Information Transfer Through Primate Ganglion Cells"	\$ 216,290	\$ 106,746
McPeck, Robert	National Eye Institute, 07R01 EY 14885-07	Cortical and Subcortical Control of Visual Attention	\$ 247,500	\$ 120,282
Reinach, Peter	National Eye Institute, 2R56 EY004795-25	Control of Corneal Epithelial Cell Proliferation	\$ 225,000	\$ 127,889
Reinach, Peter	US Army Medical Research and Materiel Command, W81XWH-	Determination of Novel Strategies for Hastening Corneal Wound Healing and Reducing Tissue Inflammation	\$ 237,730	\$ 77,268
Sherman J	Topcon	Age Stratified Data Collection	\$ 124,200	\$ 37,260
Sherman J	MJ Fox/Downstate	Optimization of optical coherence tomography as a biomarker for Parkinson's disease	\$ 55,159	\$ 13,790
Sherman J	Optos Inc	Compare Standard Eye Exam to Optos Eye Exam	\$ 9,402	\$ 1,598
Srivinas, M	NIH/NIAMS, 1R01 AR0595050-1	Cx26 Mutations in Syndromic Deafness Linked to Skin Disease	\$ 25,000	\$ 11,080
Srivinas, M	National Eye Institute, 2R01EY013869	Intracellular communication in the lens	\$ 225,000	\$ 92,446
Srivinas, M	National Eye Institute, 1R21 NS064417 01A1	Pharmacology of Connexin Channels: Structure-Activity Studies.	\$ 156,800	\$ 30,367
Troilo D	National Eye Institute, 5R01EY011228-13	Accommodation and the development of refractive status	\$ 222,750	\$ 123,893
Troilo D	NEI - U OK HSC, 2R01EY009391	Regulation of scleral growth and	\$ 45,284	\$ 9,480

		remodeling in myopia		
Zaidi, Qasim	National Eye Institute, 5R01EY01331207	Neural basis of shape from texture	\$ 218,483	\$ 89,100
Zaidi, Qasim	National Eye Institute, 5R01EY00755619	"Mechanisms of Color Detection Induction & Adaptation"	\$ 250,000	\$ 98,181
		Total SPAR	\$2,571,684	\$906,417

SIVR Colloquia

Date: **Thursday, July 1, 2010** - 12:00 noon - Room 1425
Name: **Tadamasa Sawada, Ph.D.**
Affiliation: Pizlo Lab, Purdue University
Title: Visual detection of symmetry of 3D shapes

Date: **Tuesday, July 13, 2010** - 11:00 a.m. - Room 1401
Name: **Annual Oral Graduate Student Presentations -
Robert Ennis, Stanley Komban, Yushi Wang,
Bonnie Cooper, Reza Lashgari**
Affiliation: SUNY, State College of Optometry

Date: **Tuesday, July 27, 2010** - 12:00 noon - Alumni Commons
Name: **Balwantray Chauhan**
Affiliation: Dalhousie University, Canada
Title: Blood flow measurements in the eye

Date: **Friday, August 13, 2010**, 9:30 a.m.-12:30 p.m., Room 1401
Speakers: **M. Enos, C. Kum, D. Grk (Arizona), S. Naumovitz, J. Caprio,
J. Malek, R. Delshad (Southern California), J. Gould**
Affiliation: SUNY Optometry (T-35 students)

Date: **Tuesday, August 17, 2010** - 4:00 pm - Alumni Commons
Name: **Dr. Robert Rafal**
Affiliation: Bangor University
Title: Seeing is a verb: Neurological observations on the role of corollary discharge in visual awareness

Date: **Wednesday, September 1, 2010** - 12:00 - Alumni Commons
Name: **Dr. Aarlenne Khan**
Affiliation: Queen's University, Kingston, Ontario
Title: The interplay between attention and eye movements

Date: **Monday, September 20, 2010** - 12:00 - Alumni Commons
Name: **Dr. Hao Sun**
Affiliation: Buskerud University College, Kongsberg, Norway
Title: Cell responses and the hyperacuties: roles of size, numerosity, and responsivity

Date: **Thursday, September 30, 2010** - 4:00 p.m. - Room 103

Name: **Dr. Jens Kremkow**
Affiliation: Albert-Ludwigs-Universität Freiburg
Title: Closing and opening the cortical window on natural images: dynamics of the thalamocortical pathway

Date: **Friday, October 8, 2010** - 4:00 p.m. - Alumni Commons
Name: **Dr. Kristen Bowles**
Affiliation: National Eye Institute
Title: X-Linked Retinoschisis

Date: **Friday, October 29, 2010** - 4:00 p.m. - Room 101
Name: **Dr. Doug DeCarlo**
Affiliation: Rutgers University
Title: "Communicating 3D Shape Using Lines"

Date: **Friday, November 5, 2010** - 4:00 p.m. - Alumni Commons
Name: **Dr. Kulandaiappan Varadaraj**
Affiliation: Department of Physiology & Biophysics, SUNY Stony Brook
Title: "Aquaporins in lens transparency and homeostasis"

Date: **Tuesday, November 9, 2010** - 12:00 - Alumni Commons
Name: **Dr. Jasmina Stevanov**
Affiliation: Ritsumeikan University, Kyoto, Japan
Title: "Aesthetic aspects of visual illusions"

Date: **Friday, December 3, 2010** - 4:00 p.m. - Room 103
Name: **Dr. Bijan Pesaran**
Affiliation: NYU
Title: "Neuronal dynamics, decisions and actions"

Date: **Friday, December 10, 2010** - 4:00 p.m. - Alumni Commons
Name: **Dr. Anne Fulton**
Affiliation: Children's Hospital, Boston
Title: "Development of Retinal Function in Retinopathy of Prematurity"

Date: **Friday, January 7, 2011** - 4:00 p.m. - Alumni Commons
Name: **Dr. Xin Wei**
Affiliation: University of Houston, College of Optometry
Title: "Measuring, modeling, and enhancing the peripheral optical quality of the human eye"

Date: **Friday, January 14, 2011** - 12:00 noon - Alumni Commons
Name: **Dr. Randall Barbour**

Affiliation: SUNY Downstate Medical Center
Title: "Functional Neuroimaging with fNIRS: Technology and Current Capabilities"

Date: **Friday, January 21, 2011** - 4:00 p.m. - Alumni Commons
Name: **Dr. Patrick Scott**
Affiliation: Boston University Medical School
Title: "Photoreceptor Degeneration Induced by Iodoacetic Acid"

Date: **Friday, January 28, 2011** - 4:00 p.m. - Room 101
Name: **Dr. Winrich Freiwald**
Affiliation: The Rockefeller University
Title: "Taking apart the Neural Machinery of Face Processing"

The SIVR Clinical Research Series

Date: **February 11, 2011** - 12:10 p.m. - Alumni Commons
Name: **Kathryn Richdale, OD, MS, FAAO**
Affiliation: Department of Optometry, The Ohio State University
Title: "Practice-Based Research in Presbyopia and Accommodation"

Date: **February 18, 2011** - 4:00 p.m. - Alumni Commons
Name: **Dr. Peter Reinach**
Affiliation: SUNY, College of Optometry
Title: "Modulation of TRPV1-induced responses to injury in corneal epithelial cells"

Date: **March 4, 2011** - 12:00 noon - Alumni Commons
Name: **Dr. Yan Zhang**
Affiliation: United Technologies Research Center in East Hartford, Connecticut
Title: "Three Dimensional Retinal Imaging with Adaptive Optics and Optical Coherence Tomography"

Date: **March 11, 2011** - 12:00 noon - Room 101
Name: **Dr. Ethan Rossi**
Affiliation: University of Rochester
Title: "The limits of visual resolution"

Date: **March 18, 2011** - 4:00 p.m. - Alumni Commons
Name: **Dr. Elizabeth Quinlan**
Affiliation: University of Maryland
Title: "Stimulating the recovery of vision in a model of deprivation amblyopia"

Date: **March 21, 2011** - 6:30 p.m. to 9:00 p.m. - Room 206
Event: **VisioNYC Conference**

Name: **Connie Cepko** (Harvard Medical School)
Title: "Cell fate determination in the vertebrate retina"
Name: **Rich Krauzlis** (Salk Institute for Biological Studies)
Title: "Priority map for action and perception in the superior colliculus"

Date: **March 22, 2011** - 4:00 p.m. - Alumni Commons
Name: **Dr. Daniel Tso**
Affiliation: SUNY Upstate Medical University
Title: "A talk in two parts: Imaging the living retina, and cues for surface segmentation in early visual cortex"

[The SIVR Clinical Research Series](#)

Date: **March 24, 2011** - 12:10 p.m. - 12:10 p.m.
Name: Mitchell Scheiman, OD
Affiliation: Department of Optometry, Pennsylvania College of Optometry
Title: The Convergence Insufficiency Treatment Trial: Lessons Learned

Date: **March 25, 2011** - 4:00 p.m. - Alumni Commons
Name: **Dr. Stephane Molotchnikoff**
Affiliation: University of Montreal
Title: "Adaptation-induced plasticity in neurons of V1: a path to memory mechanisms"

Date: **April 1, 2011** - 4:00 p.m. - Alumni Commons
Name: **Dr. Adam Kohn**
Affiliation: Albert Einstein College of Medicine
Title: "Feedforward corticocortical networks"

Date: **April 8, 2011** - 4:00 p.m. - Alumni Commons
Name: **Prof. Pedro de la Villa**
Affiliation: Universidad de Alcalá
Title: "Neuroprotective effect of proinsulin in a model of retinal degeneration"

Date: **April 27, 2011** - 4:00 p.m. - Alumni Commons
Name: **Dr. Jan Kremers**
Affiliation: University Hospital Erlangen
Title: "Parvo- and magnocellular signatures in ERGs using compound luminance and chromatic stimuli"

Date: **Thursday, April 28, 2011**
Poster Session - 12:00 noon - 1:00 p.m. / 15th Floor
Practice Talks - / 1:00 p.m. - 2:00 p.m. / Alumni Commons
Name: **15th ANNUAL ARVO / VSS PRACTICE TALKS
AND POSTER PRESENTATION SESSION**

Affiliation: SUNY Optometry **Jing Yuan**
SUNY Optometry, Fan Zhang, Hua Yang, Peter Reinach - ARVO Talk
"CB1 Receptor Activation Elicits Human Corneal Epithelial Layer Barrier Function
Restoration During Exposure To A Hypertonic Stress"
Robert Ennis, SUNY Optometry, Dr. Zaidi, Dr. Lee - VSS Talk
"Physiological signature of time-varying
color after-images"

Date: **Friday, April 29, 2011** - 12:00 noon - Room 103
Name: **Dr. Jennifer Hunter**
Affiliation: University of Rochester
Title: "Fluorescence Imaging of the Living Retina"

Date: **Friday, April 29, 2011** - 4:00 p.m. - Alumni Commons
Name: **Dr. Erich Knop**
Affiliation: Charite - Universitätsmedizin Berlin, Humboldt Universität Berlin

Title: "Functional Anatomy of the Ocular Surface and its relation to Pathology
and Disease"

Title: **Annual Oral Graduate Student Presentations**
Date: **Thursday, May 12, 2011** - 3:00 to 5:00 - Room 206
Name: Bonnie Cooper, Preethi Thiagarajan, Naveen Kumar Yadav, Yuanquan
(Aaron) Yang, Jing (Cathy) Yuan
Affiliation: SUNY, State College of Optometry

Date: **Friday, May 13, 2011** - 4:00 p.m. - Alumni Commons
Name: **Dr. Zahra Hussain**
Affiliation: University of Nottingham
Title: "Plasticity and perceptual distortions in human amblyopia"

Title: **Annual Oral Graduate Student Presentations**
Date: **Thursday, May 18, 2011** - 2:30 am - 4:30 pm - Alumni Com.
Name: Robert Ennis, Michael Jansen, Stanley Kompan, Reza Lashgari, Yushi
Wang
Affiliation: SUNY, State College of Optometry

The SIVR Clinical Research Series

Date: **Friday, May 20, 2011** - 12:00 p.m. - Alumni Commons
Name: **Dr. Jane Gwiazda**
Affiliation: The New England College of Optometry
Title: "Lens treatments for slowing the progression of myopia in children"

Date: Friday, May 27, 2011 - 12:00 noon - Alumni Commons

Name: **Dr. Greg Field**
Affiliation: Salk Institute for Biological Studies
Title: "Mapping the functional connectivity of the retina"

Date: Monday, June 6, 2011 - 12:00 noon - Alumni Commons
Name: **Dr. John Robson**
Affiliation: University of Houston College of Optometry and Gonville & Caius College, Cambridge
Title: " Seeing in the dark: single photon signals in the retina "

ARVO 2011 (29 presentations: includes 6 PhD students and 3 OD/MS students)

Sack R Diurnal-distribution-selective Down- Regulation Of Cytokines but Not Chemokines *Robert A. Sack¹, A Beaton¹, B. Cooper¹, S. Sathe¹, A Mezentsev², M Schwartzman², L Bellner², P. Istroavich¹*

Bababekova Y, Hue JE, Huang R, Rosenfield M. Font size and viewing distance of hand-held smartphones.

Dingcai Cao¹, Hao Sun², Barry B. Lee³. ¹Surgery, University of Chicago, Chicago, IL; ²College of Optometry, State University of New York, New York, NY; ³Biological Sciences, SUNY College of Optometry, New York, NY. The Weighting Of Rod And Cone Inputs To Primate Magnocellular Ganglion Cells

Rosenfield M, Hue J, Huang R, Bababekova Y. Uncorrected astigmatism and computer vision syndrome.

Mark Rosenfield, Jennifer Hue, Rae Huang, Yuliya Bababekova. SUNY College Font Size and Viewing Distance of Hand-Held Smart Phones

Huang R, Rosenfield M. Effect of exercise on refractive state, accommodation and intra-ocular pressure.

Parekh N, Wang Z, Yang H, Reinach P Triptolide Stimulates migration in Human Corneal Epithelial Cells via p38 and JNK

Akihiro Inoue¹, Yuka Okada¹, Ai Kitano¹, Peter S. Reinach², Nili Parekh², Shizuya Saika¹ Effects Of Ppar-beta/delta On Migration And Proliferation In Corneal Epithelium

Yadav N, Ludlam D, Ciuffreda K Effect of Different Stimulus Configurations on Visually Evoked Potential (VEP) Amplitude

Ciuffreda K, Yadav N, Han E, Ludlam D, Peddle A, Hulse P, Walter S, Han J DISTANCE PERCEPTION IN MILD TRAUMATIC BRAIN INJURY

Barry Tannen^{1A}, Kenneth J. Ciuffreda^{1B}, Noah M. Tannen^{1B} Neuro-Ophthalmology: Electrophysiology, Visual Fields and Psychophysics

Yuanbo Liang^{1,2}, Zhong Lin¹, Balamurali Vasudevan³, Kenneth J. Ciuffreda⁴, Yicao Zhang⁵, Liya Qiao¹, Ningli Wang¹, Jie J. Wang Baseline Demographics of Refractive Error and Near-work Induced Transient Myopia (NITM) in the Beijing Myopia Progression Study (BMPS)

Joan K. Portello, Mark Rosenfield, Daniel Recko. Effect Of A Topical Lubricant On Symptoms Of Computer Vision Syndrome

J. Yuan, F. Zhang, H. Yang, P. Reinach Cannabinoids Receptor's Activation on Human Corneal Epithelial Cells (HCEC) Culture Model of Barrier Function

Wang Z, Yang H, Capó-Aponte J, Parekh N, Reinach P *TAK1 interactions with TRPV1 and CB1 control IL-6 and IL-8 release in human corneal epithelial cells.*

Yang H, Mergler S, Wang Z, Varadaraj K, Kumari S, Reinach P CB1 Activation Reduces TRPV1-induced Responses in Human Corneal Epithelial Cells

Yang Y,¹Yang H, Wang Z, Reinach P, Dependence of TGF β -induced corneal fibrosis on TRPV1 activation

Sherman J, Slotnick S, Madonna R, Nath S, Hallal R, Epshtein D Peripapillary retinoschisis in high myopia: A novel clinical entity revealed by SD OCT.

Bass S, Sherman J, Katz B, Sadun A, Panzer A Onset and progression of retinal nerve fiber layer myelination associated with optic nerve head drusen.

Boneta J, Waite J, Nath S, Bennett M, Sherman J Peripheral retinal vascular disorders detected, treated, and monitored with OptomapFA as compared to Spectralis Fluorescein Angiography.

Nath S, MacIver S, Sherman M, Boneta J, Epshtein D, Whitney J, Slotnick S, Sherman J Does serial Optos panoramic imaging improve diagnosis of glaucomatous RNFL defects from physiological RNFL "Slits"?

Sanjeev Nath¹, Sarah Sherman^{2,1}. ¹Eye Institute and Laser Center, New York, NY; ²SUNY College of Optometry, New York, NY Differential Diagnosis Of Glaucomatous RNFL Defects From Physiological RNFL "Slits"?

MacIver S, Sherman J, Sherman M, Slotnick S Comparison of RNFL assessment with Optos P200 and P200DX.

Kum C, Kruger P, Dul M, Stark L. Is A Deep Foveal Pit A Specialized Wavefront Vergence Detector For Accommodation?

Samantha Slotnick¹, Ivan Bodis-Wollner^{2,3}. ¹SUNY State College of Optometry, New York, NY; ²SUNY Eye Institute, New York, NY; ³SUNY Downstate Medical Center, Brooklyn, NY. Veridicality of SD-OCT in Oblique Retinal Scans

Yuka Okada^{1A}, Peter S. Reinach², Kumi Shirai^{1A}, Ai Kitano^{1A}, Masayasu Miyajima^{1B}, Shizuya Saika Effects Of Loss Of TRPV4 On The Inflammation And Scarring Of An Alkali-burned Cornea In Mice

Akihiro Inoue¹, Yuka Okada¹, Ai Kitano¹, Peter S. Reinach², Nili Parekh², Shizuya Saika¹. ¹Department of Ophthalmology, Wakayama Medical University, Wakayama, Japan; ²Biological Sciences, SUNY College of Optometry, New York, NY. Effects Of Ppar-beta/delta On Migration And Proliferation In Corneal Epithelium

Clio A. Rubinos, Miduturu Srinivas. Biological Sciences, SUNY State College of Optometry, New York, NY. Permeability of Lens Gap Junctions to Antioxidants

Anita E. Hendrickson¹, David Troilo², Alan D. Springer³. ¹Biological Structure & Ophthalmology, University of Washington, Seattle, WA; ²SUNY College of Optometry, New York, NY; ³Cell Biology & Anatomy, New York Medical College, Valhalla, NY. - Foveal Cone Density Shows a Rapid Postnatal Maturation in the Marmoset Monkey

Jody A. Summers Rada¹, Nicole A. Datson², David Troilo³. ¹Dept of Cell Biology, Univ of Oklahoma Hlth Sci Ctr, Oklahoma City, OK; ²Division of Medical Pharmacology, Leiden/Amsterdam Center for Drug Research and Leiden University Medical Center, Leiden, The Netherlands; ³SUNY College of Optometry, New York, NY. Early Changes in Gene Expression in RPE/Choroid of Marmoset Eyes in Response to Image Defocus

Thomas W. White^{1A,2}, Caterina Sellitto^{1A}, Leping Li^{1A}, Hong-Zhan Wang^{1A}, Michael L. Robinson³, Miduturu Srinivas^{4,5}, Richard Z. Lin^{1B}. ^APhysiology & Biophysics, ^BMedicine, ¹Stony Brook University, Stony Brook, NY; ²SUNY Eye Institute, Stony Brook, NY; ³Zoology, Miami University, Oxford, OH; ⁴Biological Sciences, SUNY College of Optometry, New York, NY; ⁵SUNY Eye Institute, New York, NY. Interactions Between Gap Junctional Communication And Phosphoinositide 3-kinase Signaling In Lens Growth

Jing Yuan, Fan Zhang, Hua Yang, Peter Reinach. Biological Science, SUNY State College of Optometry, New York, CB1 Receptor Activation Elicits Human Corneal Epithelial Layer Barrier Function Restoration During Exposure To A Hypertonic Stress

VSS 2011 (9 presentations, includes 2 PhD students)

95 **IMPROVEMENT IN STEREOACUITY THROUGH TRAINING WITH CORRELATED CUES**

Cristina Llerena Law^{1,2}, Benjamin Backus^{1,2}, Baptiste Caziot^{1,2}. ¹Graduate Center for Vision Research, SUNY State College of Optometry, ²SUNY Eye Institute

159 **FACE PRIORS OVERCOME SHAPE-FROM-MOTION SIGNALS IN THE ROTATING HOLLOW FACE ILLUSION**

Thomas Papathomas^{1,2}, Jordan Ash¹, James Hughes¹, Brian Keane³, Qasim Zaidi⁴. ¹ Department of Biomedical Engineering, Rutgers University, New Jersey, USA, ² Lab. of Vision Research, Center for Cognitive Sciences, Rutgers University, New Jersey, USA, ³ University Behavioral HealthCare, UMDNJ—Robert Wood Johnson Medical School, New Jersey, USA, ⁴ Graduate Center for Vision Research, State University of New York College of Optometry, New York, USA

294 **VISUAL PERCEPTION OF MATERIAL AFFORDANCES**

Martin Giesel, Qasim Zaidi. Graduate Center for Vision Research, SUNY College of Optometry

298 **DETECTING ANIMALS IN NATURAL SURROUNDINGS: THE ROLE OF COLOR DISTRIBUTIONS.**

Michael Jansen, Martin Giesel, Qasim Zaidi. Graduate Center for Vision Research, State University of New York, College of Optometry

454 **PERISACCADIC FLASH MISLOCALIZATION DEPENDS ON WHETHER A BACKGROUND STIMULUS APPEARS OR DISAPPEARS AROUND THE TIME OF THE FLASH**

Jordan Pola. Graduate Center for Vision Research, SUNY College of Optometry

571 **CLASSIFYING DYNAMIC 3-D SHAPE DEFORMATIONS FROM MOTION CUES**

Qasim Zaidi, Anshul Jain. Graduate Center for Vision Research, SUNY College of Optometry

712 **LEARNED BIAS FOR 3-D SHAPE PERCEPTION WITHOUT OBJECT MOTION**

Anshul Jain^{1,2}, Benjamin T. Backus^{1,2}. ¹ Graduate Center for Vision Research, SUNY College of Optometry, ² SUNY Eye Institute

7 **CUE RECRUITMENT FOR EXTRINSIC SIGNALS AFTER TRAINING WITH LOW- INFORMATION STIMULI**

Benjamin T. Backus^{1,2}, Anshul Jain^{1,2}, Stuart G. Fuller^{1,3}. ¹ Graduate Center for Vision Science, College of Optometry, State University of NY, ² SUNY Eye Institute, ³ Department of Psychology, New York University

878 **PHYSIOLOGICAL SIGNATURE OF TIME-VARYING COLOR AFTER-IMAGES**

Robert Ennis, Barry Lee, Qasim Zaidi. Graduate Center for Vision Research, SUNY College of Optometry


984 **SPECIFICITY OF LEARNING IN ACQUIRED BIAS FOR 3D ROTATION**

Baptiste Caziot, Benjamin T. Backus. Graduate Center for Vision Research, SUNY College of Optometry and SUNY Eye Institute

AAO- 2010 (24presentations: includes 5 PhD and 2 OD/MS students)

105697	Rosenfield, Mark, Yuliya Bababekova B.S. (State University of New York College of Optometry), Rae Huang B.A. (State University of New York College of Optometry), Jennifer Hue B.S. (State University of New York College of Optometry)	FONT SIZE AND VIEWING DISTANCE OF HAND-HELD SMART PHONES	2010
100698	Chu, Christina Ai-Ling, Mark Rosenfield OD, PhD, FAAO, Diplomate, Binocular Vision, Perce (State University of New York College of Optometry), Joan K. Portello OD, MPH, MS, FAAO (State University of New York College of Optometry)	COMPUTER VISION SYNDROME: BLINK RATE AND DRY EYE DURING HARD COPY OR COMPUTER VIEWING	2010
100722	Yuan, Jing, Fan Zhang (State University of New York College of Optometry), Peter S Reinach (State University of New York College of Optometry)	PPARγ MEDIATES HYPERTONICITY-INDUCED INCREASES IN PROINFLAMMATORY RELEASE IN HUMAN CORNEAL EPITHELIAL CELLS	2010
105776	Bass, Sherry J., Jerome Sherman OD (State University of New York College of Optometry)	SPECTRAL DOMAIN (SD)-OCT IN "AMBLYOPIA" ASSOCIATED WITH UNILATERAL HIGH MYOPIA AND MYELINATED RETINAL NERVE FIBERS	2010
105777	Bass, Sherry J., Doreen Ng OD, Jerome Sherman OD, FAAO (State University of New York College of Optometry)	BILATERAL COATS RESPONSE IN A FEMALE PATIENT LEADS TO DIAGNOSIS OF FACIOSCAPULOHUMERAL MUSCULAR DYSTROPHY	2010
105778	Bass, Sherry J., Roshnee Patel OD	MOLECULAR GENETICS HELPS TO DEFINE THE DIAGNOSIS OF A BULL'S EYE MACULOPATHY	2010
100793	Scheiman, Mitchell M., G. Lynn Mitchell BS, MAS, FAAO (Ohio State University), Susan A. Cotter OD, MS, FAAO (Southern California College of Optometry), Marjean T. Kulp OD, MS, FAAO (Ohio State University), Mary Bartuccio OD, FAAO (Nova Southeastern University College of Optometry), Mark Boas OD,MS (Pennsylvania College of Optometry at Salus University), Ida Chung OD, FCOVD,FAAO (State University of New York College of Optometry), Michael F. Gallaway OD, FAAO (Pennsylvania College of Optometry at Salus University),	EFFECTIVENESS OF VISION THERAPY FOR IMPROVING ACCOMMODATIVE AMPLITUDE AND FACILITY	2010

	Kristine B. Hopkins OD, MSPH, FAAO (University of Alabama at Birmingham), CITT Investigator Group		
100842	Kulp, Marjean T., G. Lynn Mitchell BS, MAS, FAAO (Ohio State University), Mitchell M. Scheiman OD, FAAO, FCOVD (Pennsylvania College of Optometry at Salus University), Susan A. Cotter OD, MS, FAAO (Southern California College of Optometry), Ida Chung OD, FCOVD,FAAO (State University of New York College of Optometry), Jeffrey Cooper MS, OD, FAAO (State University of New York College of Optometry), Rachel A. Coulter OD, FAAO (Nova Southeastern University College of Optometry), Michael F. Gallaway OD, FAAO (Pennsylvania College of Optometry at Salus University), Richard Hertle MD, Kristine B. Hopkins OD, MSPH, FAAO (University of Alabama at Birmingham), Susanna Tamkins OD, FAAO (Bascom Palmer Eye Institute), Yin C. Tea OD, FAAO (Nova Southeastern University College of Optometry), Study Group CITT	DOES ACCOMMODATIVE INSUFFICIENCY AFFECT SUCCESS OF CONVERGENCE INSUFFICIENCY THERAPY?	2010
105927	McLeod, Heather Mira, Scott Richter OD (State University of New York College of Optometry)	PERIPHERAL NEOVASCULARIZATION RESPONSE IN COBALAMINE C DEFICIENCY ASSOCIATED RETINOPATHY	2010
105957	Thiagarajan, Preethi, Kenneth J. Ciuffreda OD, PhD, FAAO, Diplomate, Binocular Vision, Perce (State University of New York College of Optometry)	VISUAL FATIGUE EFFECTS ON ACCOMMODATIVE DYNAMICS	2010
105961	Thiagarajan, Preethi, Kenneth J. Ciuffreda OD, PhD, FAAO, Diplomate, Binocular Vision, Perce (State University of New York College of Optometry), Diana Ludlam B.S. VT (State University of New York College of Optometry)	STEADY-STATE VARIABILITY AS AN INDICATOR FOR VERGENCE FATIGUE	2010
105993	Portello, Joan K., Mark Rosenfield OD, PhD, FAAO, Diplomate, Binocular Vision, Perce (State University of New York College of Optometry), Christina Ai-Ling Chu BS (State University of New York College	INCOMPLETE BLINKS AND COMPUTER VISION SYNDROME	2010

	of Optometry)		
100020	Ciuffreda, Kenneth J., Naveen Yadav BSc (H) Optom, MSc (State University of New York College of Optometry), Esther Han (State University of New York College of Optometry), Diana Ludlam (State University of New York College of Optometry), Angela Peddle (State University of New York College of Optometry), Paul Hulse (State University of New York College of Optometry), Suzzane Walter (State University of New York College of Optometry)	DISTANCE PERCEPTION IN MILD TRAUMATIC BRAIN INJURY (MTBI)	2010
105022	Nehmad, Leon, Aurora Denial OD (New England College of Optometry), Julia Appel OD, FAAO (State University of New York College of Optometry)	AN INVESTIGATION OF CLINICAL TEACHING METHODOLOGY AT TWO OPTOMETRY COLLEGES	2010
105074	Kao, Kelly C., M.H. Esther Han OD, FCOVD (State University of New York College of Optometry), Steven Shaby OD, FCOVD (State University of New York College of Optometry)	SENSORY ADAPTATION CONSIDERATIONS IN STRABISMICS: A CASE REPORT FOCUSING ON HORROR FUSIONALIS	2010
			

105082	Mitchell, G. Lynn, Eric Borsting OD, MS, FAAO (Southern California College of Optometry), Chris Chase PhD (Western University of Health Sciences – College of Optometry), Mitchell M. Scheiman OD, FAAO, FCOVD (Pennsylvania College of Optometry at Salus University), Marjean T. Kulp OD, MS, FAAO (Ohio State University), Susan A. Cotter OD, MS, FAAO (Southern California College of Optometry), Rachel A. Coulter OD, FAAO (Nova Southeastern University College of Optometry), Kristine B. Hopkins OD, MSPH, FAAO (University of Alabama at Birmingham), Audra D Steiner (State University of New York College	THE CORRELATION BETWEEN INTELLIGENCE AND READING ABILITY IN CHILDREN WITH SYMPTOMATIC CONVERGENCE INSUFFICIENCY	2010

	of Optometry), Susanna Tamkins OD, FAAO (Bascom Palmer Eye Institute), CITT-RS Study Group		
105111	Liu, Tiffany, Mitchell W. Dul OD, MS, FAAO (State University of New York College of Optometry), William H. Swanson PhD, FAAO (Indiana University)	REDUCING EFFECTS OF RETINAL ILLUMINANCE AND BLUR ON PERIMETRIC STIMULI	2010
100113	Patel, Reena, Kenneth J. Ciuffreda OD, PhD, FAAO, Diplomate, Binocular Vision, Perce (State University of New York College of Optometry), Barry Tannen O.D. (State University of New York College of Optometry), Neera Kapoor OD, MS, FAAO (State University of New York College of Optometry)	ELEVATED COHERENT MOTION THRESHOLDS IN MILD TRAUMATIC BRAIN INJURY	2010
105120	Wang, Zheng, Hua Yang M.D. (State University of New York College of Optometry), Mario Wolosin (Mount Sinai Hospital), Jose Capó-Aponte , Peter Reinach (State University of New York College of Optometry)	JNK-1 AND DUSP1 MEDIATE TRPV1 CONTROL OF INFLAMMATION IN HUMAN CORNEAL EPITHELIAL CELLS	2010
100132	Borsting, Eric, G. Lynn Mitchell BS, MAS, FAAO (Ohio State University), Mitchell M. Scheiman OD, FAAO, FCOVD (Pennsylvania College of Optometry at Salus University), Chris Chase PhD (Western University of Health Sciences – College of Optometry), Marjean T. Kulp OD, MS, FAAO (Ohio State University), Susan A. Cotter OD, MS, FAAO (Southern California College of Optometry), Rachel A. Coulter OD, FAAO (Nova Southeastern University College of Optometry), Kristine B. Hopkins OD, MSPH, FAAO (University of Alabama at Birmingham), Audra D Steiner (State University of New York College of Optometry), Susanna Tamkins OD, FAAO (Bascom Palmer Eye Institute), Study Group CITT-RS	ADHD AND PROBLEM BEHAVIORS IN CHILDREN WITH SYMPTOMATIC CONVERGENCE INSUFFICIENCY	2010
105153	Yang, Hua, Zheng Wang (State University of New York College	DUAL SPECIFICITY PHOSPHATASE 6 REGULATES EGF INDUCED ERK, NKCC1 PHOSPHORYLATION AND PROLIFERATION IN CORNEAL	2010

	of Optometry), Mario Wolosin (Mount Sinai Hospital), Jose Capó-Aponte , Peter Reinach (State University of New York College of Optometry)	EPITHELIAL CELLS	
105168	Sherman, Jerome, Krishna Morar OD (State University of New York College of Optometry), Jeffrey M. Roth OD, FAAO, Alfredo Sadun MD,PhD	EARLY DETECTION OF LHON AND NOVEL TREATMENT OPTIONS	2010
105181	Parekh, Nili, Zheng Wang M.D (State University of New York College of Optometry), Hua Yang M.D. (State University of New York College of Optometry), Peter Reinach PhD (State University of New York College of Optometry)	PPARα MODULATION ALTERS INFLAMMATORY RESPONSE TO HYPERTONIC STRESS IN HUMAN CORNEAL EPITHELIAL CELLS(HCEC)	2010
105200	Millas, Themistocles D, Martin Copeland OD, FAAO (Kings County Hospital Center), Mitchell C. Wilkinson OD, FAAO (Kings County Hospital Center)	MISDIAGNOSED MENIERS DISEASE	2010
105236	Maclver, Sarah, Roshnee Patel OD (State University of New York College of Optometry), Ivan Bodis-Wollner MD,DSc, Jerome Sherman OD, FAAO (State University of New York College of Optometry)	SD OCT ABNORMALITIES IN PARKINSON'S DISEASE AND RELATED DISORDERS	2010
105241	Sherman, Jerome, Alyssa Taussig (State University of New York College of Optometry), Gulshan Karamchandani OD (Pennsylvania College of Optometry at Salus University)	NORMAL PUPILS IN OPTIC NERVE ATROPHY	2010
105271	Boneta Waite, Juliana E., Jerome Sherman OD, FAAO (State University of New York College of Optometry), Marc Sherman (State University of New York College of Optometry), Sanjeev Nath MD (Private Practitioner), Alyssa Taussig (State University of New York College of Optometry)	EARLY, PRE-PERIMETRIC AND "SLIT" RNFL DEFECTS DETECTED WITH OPTOMAP P200C AND P200	2010
105425	Jackson, Kevin M.	EARTHQUAKE RELATED EYECARE: AN EPIDEMIOLOGICAL STUDY OF OCULAR INJURY ABOARD USNS COMFORT IN HAITI	2010
100441	Boate, Alan, Brian Leonard MD (The University of Ottawa Eye	STRUCTURAL AND FUNCTIONAL EVALUATION OF MACULAR PATHOLOGY	2010

	Institute), Rick Clayton BAsC (Annidis Health Systems), Jeremy Gribben MCS (Annidis Health Systems), Stewart Coupland PhD (The University of Ottawa Eye Institute), Robert G. Devenyi MD (University of Toronto), Jerome Sherman OD, FAAO (State University of New York College of Optometry), Stuart P Richer OD, MS, PhD, FAAO (VA Medical Center)	BY MULTI-SPECTRAL FUNDUS IMAGING	
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105448	Kao, Kelly C. Jennifer Han OD (State University of New York College of Optometry), Grace Morano OD (State University of New York College of Optometry)	OVERVIEW OF THE IRWIN B. SUCHOFF VISION THERAPY AND REHABILITATION RESIDENCY AT SUNY COLLEGE OF OPTOMETRY	2010
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Butts, D. A., G. Desbordes, C. Weng, **J. Jin, J. M. Alonso** and G. B. Stanley (2010). The episodic nature of spike trains in the early visual pathway. *J Neurophysiol* 104(6): 3371-87.

Desbordes, G., **J. Jin, J. M. Alonso** and G. B. Stanley (2010). Modulation of temporal precision in thalamic population responses to natural visual stimuli. *Front Syst Neurosci* 4: 151.

Comment associated to previous paper published in 2009. Chen, Y., S. Anand, S. Martinez-Conde, S. L. Macknik, Y. Bereshpolova, H. A. Swadlow and J. M. Alonso (2009). The linearity and selectivity of neuronal responses in awake visual cortex. *J Vis* 9(9): 12 1-17.

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Lee, B.B. (2011). Visual pathways and psychophysical channels in the primate. *Journal of Physiology*. 589, 41-47

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Vision Institute, Weill Cornell Medical College, 1300 York Avenue, New York, NY 10065, USA. zap2001@med.cornell.edu

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Yuka Okada,* **Peter S. Reinach**,† Kumi Shirai,Ai Kitano,* Winston W.-Y. Kao,‡Kathleen C. Flanders,§ Masayasu Miyajima,Hongshan Liu,‡ Jianhua Zhang,‡ and Shizuya Saika* (2011) TRPV1 Involvement in the Inflammatory Tissue Fibrosis in Mice. *American Journal of Pathology* (in press: June 2011)

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Ron Margolis, MD, ¹ Sri Krishna Mukkamala, MD, ² Lee M Jampol, MD, ³ Richard F Spaide, MD, ⁴ Michael D Ober, MD, ⁵ John A Sorenson, MD, ⁴ Ronald C Gentile, MD, ² Joel A Miller, MD, ⁵ **Jerome Sherman, OD**, ⁶ K Bailey Freund, MD ⁴ The Expanded Spectrum of Focal Choroidal Excavation. Archives of Ophthalmology. June 2011
Asifa Shafi*, William H. Swanson†, and **Mitchell W. Dulz** Structure and Function in Patients with Glaucomatous Defects Near Fixation, VOL. 88, NO. 1, PP. 130–139
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Student Fellowships Awarded

Student		Advisor
Yadav, Naveen	2011 Student Travel Fellowship (ARVO)	\$ 750 Ciuffreda
Ennis, Robert	2011 Student Travel Fellowship (VSS)	\$ 500 Zaidi

Yang,
Yuanquan

2011

Minnie Flaura Turner Award

\$2500

Reinach

Appendix II

SIVR EXPENDITURE BUDGET PROPOSAL July 1, 2011- June 30, 2012

		Request	Allocated	Expended		
code		2011-12	2010-11	2010-11		
<u>Coding</u>		SIVR	SIVR	SIVR		
<u>Staff Support</u>						
Salaries Research (D. Berger inc. NY FB)	60090			\$ 20,000		
<u>Personnel Sub- Total</u>		-	-	<u>\$ 20,000</u>		
Research Support for Small Clinical Projects		\$ 12,400	\$ 12,400	16071		
New Grant and Funded Research Innovation Support		\$ 11,000	\$ 11,000			
Patient Care Collaborative Research Clinical Grants	60120	\$ 25,000	\$ 25,000	20,000		
Colloquium	60110	\$ 15,000	\$ 15,000	5542		
Broker fees	60000	9,600.00	9,600.00	9,600.00		
Sum		73,000.00	73,000.00	\$ 71,213		
		75,000.00				
Supplement clinical research equipment						
Grand Total		148,000				

Approved by: 

June 8, 2011

Dr. Jerry Feldman, Director

Dr. David Troilo, Dean

Date

Ann Warwick, Vice President for Development

Date