

## *CURRICULUM VITAE*

Lawrence J. Singerman, MD, FACS, FICS

**OFFICE ADDRESSES** Retina Associates of Cleveland, Inc.  
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### **EDUCATION**

*College* Case Western Reserve University  
Cleveland, Ohio  
September 1961 – June 1965, BA

*Medical School* Wayne State University  
Detroit, Michigan  
September 1965 – May 1969, MD

### **POSTGRADUATE TRAINING**

*Internship* Medical/Surgical  
Mt. Sinai Medical Center  
Cleveland, Ohio  
July 1969 – June 1970

*Residency* Ophthalmology  
Mt. Sinai Medical Center  
Assistant Resident  
July 1970 – June 1972  
Chief Resident  
July 1972 – June 1973  
Ulmer Award for Outstanding Research in Ophthalmology

*Fellowship*                      Retinal Fellowship  
   Retinal Vascular Center  
   The Wilmer Ophthalmological Institute of Johns Hopkins University  
   Baltimore, Maryland  
   July 1973 – June 1974

## LICENSURE AND BOARD CERTIFICATION

Licensed to practice medicine in Ohio, Florida, and Pennsylvania

Diplomate, American Board of Ophthalmology, 1975

## PROFESSIONAL POSITIONS

Retina Associates of Cleveland (Founder), 1974-

Practice limited to retinal diseases and surgery. Associates: Michael A. Novak, MD; Hernando Zegarra, MD; Z. Nicholas Zakov, MD; Scott D. Pendergast, MD; David G. Miller, MD; Joseph M. Coney, MD; Jerome P. Schartman, MD

The Macula Society: Founder; Executive Secretary, 1977-

Director, Retinal and Laser Surgery, Mt. Sinai Medical Center, Cleveland, Ohio, 1985-1999

Director of the Retinal Institute, Mt. Sinai Medical Center, Cleveland, Ohio, 1990-1997

Director, Retinal Fellowship Program, Mt. Sinai Medical Center, Cleveland, Ohio, 1985-1995

Director, Regional Eye Trauma Center (Northeastern Ohio) of the National Eye Trauma System and the National Eye Trauma Registry

Chairman, Great Lakes Region, American Academy of Ophthalmology Education Trust Fund, 1992-1997

State Coordinator of the American Academy of Ophthalmology Diabetes 2000 Program for Ohio, 1991-2001

Vice-Chairman of the Council, American Academy of Ophthalmology, 1994-1996

Chairman, Strategic Planning Committee, 1989-1994; First Honorary Board Member for Life; Diabetes Association of Greater Cleveland

Past-President, Diabetes Association of Greater Cleveland (1987-1989)

Past-President, Cleveland Ophthalmological Society

Past-President, Ohio Ophthalmological Society

Chairman, Committee for the Arnall Patz Chair in Ophthalmology of the Wilmer Institute of Johns Hopkins University School of Medicine

Jury Member, Pisart Vision Award (Lighthouse International's award for noteworthy contributions to the prevention, cure, or amelioration of severe vision impairment or blindness, 2005)

Scientific Advisory Council, The Macula Foundation, Inc., New York, New York

Advisory Board, American Society of Contemporary Ophthalmology

Medical Advisory Board, Macular Degeneration Partnership

Medical Advisory Board, National Association for the Visually Handicapped

Ophthalmology Advisory Board, Eli Lilly and Company

Scientific Advisory Board, EyeTech Pharmaceuticals

Scientific Advisory Board, Acuity Pharmaceuticals

Speakers Bureau, Allergan

Editorial Board, *Annals of Ophthalmology*

Editorial Board, *Journal of Diabetes and Its Complications*

Editorial Board, *Ophthalmic Surgery and Lasers*

Editorial Board, *Ophthalmology Times*

Editorial Board, *Retina, The Journal of Retinal and Vitreous Diseases*

Editorial Advisory and Review Board, *Retinal Physician*

Editorial Board, *Retina Vitreus (Turkish)*

Scientific Referee, *American Journal of Ophthalmology*

Scientific Referee, *Archives of Ophthalmology*

Scientific Referee, *New England Journal of Medicine*

Scientific Referee, *Ophthalmology*

## ACADEMIC APPOINTMENTS

Clinical Professor of Ophthalmology, Case Western Reserve University/University Hospitals of Cleveland, Cleveland, Ohio, July 1991-present

Associate Clinical Professor of Ophthalmology, July 1984-June 1991

Assistant Clinical Professor of Ophthalmology, July 1978-June 1984

Senior Clinical Instructor of Ophthalmology, July 1977-June 1978

Clinical Instructor of Ophthalmology, July 1975-June 1977

Member, Promotions Committee, Department of Ophthalmology, 1994-

Voluntary Professor of Clinical Ophthalmology, Bascom Palmer Eye Institute, Miami, Florida, 2003-

## TEACHING CONTRIBUTIONS

Regular teaching activities at ophthalmology grand rounds and basic science courses at Case Western Reserve University Department of Ophthalmology.

Varying teaching responsibilities for ophthalmology residents at local hospitals and with medical students, residents, retina fellows and others, since 1974.

Ongoing teaching of retinal fellows, visiting attendings, residents, and medical students on elective with Case Western Reserve University School of Medicine.

Recipient of First Annual Outstanding Teacher Award (with associates Drs. Thomas A. Rice and Michael A. Novak), Case Western Reserve University Hospitals, Ophthalmology Residents Program, 1985. Also recipient of outstanding teaching awards in the past at Mt. Sinai Medical Center and St. Luke's Hospital ophthalmology residency programs.

Research advisor of Sonia Yoo and co-author of poster, "Lysosomal Enzymes in the Retinal Pigment Epithelium of Patients with Age-related Macular Degeneration." Recipient of Dean's Prize at the Irwin H. Lepow Student Research Day at Case Western Reserve University, May 11, 1992, for this project.

Multiple lectures at meetings of the Cleveland Ophthalmological Society and the Ohio Ophthalmological Society.

## HONORS AND AWARDS

Honor Award, American Academy of Ophthalmology, 1984

Senior Honor Award, American Academy of Ophthalmology, 1994

Life Achievement Honor Award, American Academy of Ophthalmology, 2006

Recipient of the Albrecht von Graefe Award for distinguished contributions in Ophthalmology, presented by the American Society of Contemporary Ophthalmology, June 28, 1993

The J. Donald M. Gass Medal for Outstanding Contributions in the Study of Macular Diseases, 1999

The Arnall Patz Medal for Outstanding Contributions in the Study of Retinal Vascular Diseases, September 2009

Diabetes Research Lifetime Achievement Award, Dietrich Diabetes Research Institute of the Diabetes Association of Greater Cleveland, October 2007

Named 1 of the 111 best ophthalmologists and 1 of the 10 best medical retinal specialists in America by *Ophthalmology Times*, October 1996

*The Best Doctors in America*, 1992-2011; Best Doctors in Cleveland, *Cleveland Magazine*, 1998-2011

U.S. Registry's *Who's Who Among Outstanding Americans*, 1994-95

Honored Member, *Who's Who Among American Executives*, 1994-95

National Registry's *Who's Who in Executives and Professionals*, 2002

Inducted into the Shaker Heights Alumni Association Hall of Fame, October 2003

## MEMBERSHIP IN PROFESSIONAL SOCIETIES

American Academy of Ophthalmology – Board of Councilors  
Councilor, 1981 (Founding of Board of Councilors)-1987  
Alternate Councilor, 1987-1990  
Councilor, 1990-1994  
Vice Chair, Council, 1994-1996

American Academy of Ophthalmology – Board of Directors  
Member, Executive Committee, 1995-1996

American Association for Ophthalmic Standardized Echography

American Board of Ophthalmology – Diplomate

American College of Surgeons – Fellow  
Committee on Medical Motion Pictures, the Board of Regents, 1994-97  
Ohio Committee on Applicants District #1, 1998-2008

American Diabetes Association

American-Israeli Ophthalmological Society

American Medical Association

American Society of Contemporary Ophthalmology – Advisory Board

American Society of Retinal Specialists (formerly the Vitreous Society) – Charter Member

American Society for Laser Medicine and Surgery – Fellow

Anterior Segment Laser Society

Association for Research in Vision and Ophthalmology

Cleveland Academy of Medicine

Cleveland Medical Library Association – Life Member

Cleveland Ophthalmological Society – Past-President

Cleveland Surgical Society

Club Jules Gonin

Diabetes Association of Greater Cleveland

Past President; member of Executive Committee for 10 years; member of Board of Trustees for 15 years. During presidency, established formal strategic plan. Chaired Strategic Plan Committee and continues to chair Strategic Planning Committee Review. Presided over move to new location. First Honorary Board Member for Life.

European Society of Retina Specialists

International Association of Ocular Surgeons

International College of Surgeons – Fellow

International Diabetes Federation

International Society of Ocular Trauma

International Society of Ophthalmic Ultrasound

Johns Hopkins Medical and Surgical Association

Juvenile Diabetes Foundation – Medical Advisory Board

Juvenile Diabetes Foundation International – Medical Advisory Board, July 1996-July 1998

Laser Institute of America

Kentucky Diabetes Foundation – Consultant Panel

The Macula Society – Founder, 1977; continuously re-elected to 5-year terms as Executive Secretary since 1978

Michaelson Club – Council Member

New York Academy of Sciences

Ohio Ophthalmological Society

President, 1989-1991

President-Elect, 1987-1989

Secretary/Treasurer, 1986

Program Committee Chairman, 1986-1989, 1992-1993

Ohio State Medical Association

Ophthalmic Council of Higher Learning

Ophthalmic Photographers Society

Pan American Ophthalmology Association

Pennsylvania Academy of Ophthalmology and Otolaryngology

Pennsylvania Diabetes Academy, Member, Scientific Advisory Board

Research to Prevent Blindness – Ophthalmology Associate

Retinitis Pigmentosa Foundation – Medical Director, Cleveland; Life Member

Retina Society

Royal Society of Medicine

Schepens International Society

Society for Clinical Trials

Society for Geriatric Ophthalmology

Wilmer Residents Association, Johns Hopkins Hospital

Uveitis Society of America – Charter Member

Member, Scientific Committee, Third International Symposium on Ocular Circulation and Neovascularization. Paris, France. May 21-24, 1992.

Member, International Committee, Fourth International Symposium on Ocular Circulation and Neovascularization. Budapest, Hungary. May 22-27, 1995.

Member, Organizing Committee, First Jerusalem International Congress on Retinal and Vitreous Diseases. Jerusalem, Israel. 1996.

Member, Scientific Committee, Second International Symposium on Retinal Pigment Epithelium. Genoa, Italy. May 29-30, 1996.

Member, Scientific Committee, International Symposium on Fluorescein Angiography, University of St. Gall, St. Gall, Switzerland. September 8-12, 1996.

Member, International Nominating Committee, 5<sup>th</sup> Michaelson Medal and Award, 1996.

Member, EarthMed.com Health Advisory Board, 1999.

## RESEARCH ACTIVITIES

Research Fellowship Award, sponsored by the Retinal Vascular Service of the Wilmer Ophthalmological Institute, Johns Hopkins Hospital, July 1973-July 1974.

### *NIH-funded Grants*

*National Cooperative Diabetic Retinopathy Study (DRS)*. Participation included complete evaluation and laser or xenon treatment of patients. July 1973-July 1974.

#### *Macular Photocoagulation Studies (MPS)*

Principal Investigator, 1979-1988

Executive Committee, June 1982-June 1983; December 1987-November 1988;

December 1990-November 1991

#### *Krypton Macular Photocoagulation Study (KMPS)*

Principal Investigator, Cleveland Center, 1982-1991

Executive Committee, June 1982-June 1983

#### *Foveal Photocoagulation Study (FPS)*

Principal Investigator, Cleveland Center, 1986-1994

Executive Committee, 1990-1991

#### *Krypton-Argon Regression of Neovascularization Study (KARNS)*

National Study Co-Chairman (Fellow Co-Chairman: Frederick L Ferris III, at the National Institutes of Health)

Principal Investigator, Cleveland Center, 1984-1993

#### *Diabetes Control and Complications Trial (DCCT)*

Study Ophthalmologist for the Case Western Reserve University-Mt Sinai Medical Center and member of the National Ophthalmic Committee, 1984-1994

- Collaborative Ocular Melanoma Study (COMS)*  
Following and Enucleating Ophthalmologist, 1987-2003
- Central Vein Occlusion Study (CVOS)*  
Principal Investigator, 1988-1993
- Endophthalmitis Vitrectomy Study (EVS)*  
Co-investigator and Enucleating Surgeon, 1989-1993
- Central Vein Occlusion Study (CVOS) Electrophysiology Ancillary Study*  
Co-investigator, 1990-1992
- Tamoxifen-related Retinopathy Study*  
Principal Ophthalmologist, 1993-1994
- Epidemiology of Diabetes Interventions and Complications Trial (EDIC)*  
Study Ophthalmologist for the Case Western Reserve University-Mt Sinai Medical Center, 1994-  
Member, Research Review Committee, 1994-
- Choroidal Neovascularization Prevention Trial – Pilot Study*  
Principal Investigator, 1995-2001
- Submacular Surgery Trials*  
Principal Investigator, 1997-2004; Co-investigator, 1995-1997
- Complications of Age-related Macular Degeneration Prevention Trial (CAPT)*  
Principal Investigator, 1998-2006
- Diabetic Retinopathy Clinical Research Network (DRCRnet) Protocol #1A. A pilot study of laser photocoagulation for diabetic macular edema*  
Principal Investigator, 2003-2007
- DRCRnet Protocol B. A randomized trial comparing intravitreal triamcinolone acetonide and laser photocoagulation for diabetic macular edema*  
Principal Investigator, 2004-2007
- Standard Care vs Corticosteroid for Retinal Vein Occlusion (SCORE) Study*  
Principal Investigator, 2004-2009
- DRCRnet Protocol E. A pilot study of peribulbar triamcinolone acetonide for diabetic macular edema*  
Principal Investigator, 2005-2007
- DRCRnet Protocol H. A Phase 2 evaluation of anti-VEGF therapy for diabetic macular edema: bevacizumab (Avastin)*  
Principal Investigator, 2006-2008

*Age-Related Eye Disease Study 2 (AREDS2)*

Co-investigator, 2006-

*DRCRnet Protocol K. Course of response to focal photocoagulation for diabetic macular edema*

Co-investigator, 2007-2008

*DRCRnet Protocol I. Intravitreal ranibizumab or triamcinolone acetonide in combination with laser photocoagulation for diabetic macular edema*

Co-investigator, 2007-

*Comparison of age-related macular degeneration treatments trials: Lucentis-Avastin trial (CATT)*

Principal Investigator, 2008-

*DRCRnet Protocol O. Comparison of time-domain OCT and spectral domain OCT retinal thickness measurement in diabetic macular edema*

Co-investigator, 2009-2010

*DRCRnet Protocol N. Evaluation of intravitreal ranibizumab for vitreous hemorrhage due to proliferative diabetic retinopathy.*

Co-investigator, 2010-

***Other National Clinical Trials****Alfa-interferon treatment of choroidal neovascularization: a randomized clinical trial*

Principal Investigator, 1993-1994

*Hydrokinetic retinal manipulation using the viscous fluid perfluorocarbon perfluorophenanthrene study*

Co-investigator, 1993-1994

*Oculon Study: Evaluation of the efficacy of OC-2 in the inhibition of cataract formation associated with vitrectomy surgery*

Co-investigator, 1993-1994

*Vitrase™ for Vitreous Hemorrhage Study*

Co-investigator, 1998-1999

*Collaborative Study on Indocyanine Green Angiography. A study with the four other centers with the most extensive ICG experience in the country*

Principal Investigator, 1993-2000

*Laser to Drusen Trial*

Principal Investigator, 1995-2000

*Age-related Macular Degeneration and Thalidomide Study*

Principal Investigator, 1996-2000

*Ocular Coherence Tomography Study*  
Principal Investigator, 1997-2000

*Verteporfin in Age-related Macular degeneration (VAM) Study: Open-label, multicenter, safety study of the treatment of predominantly classic choroidal neovascularization secondary to age-related macular degeneration using photodynamic therapy with verteporfin for injection*  
Principal Investigator, 1999-2000

*Study of the matrix metalloproteinase inhibitor, AG3340, in patients with subfoveal choroidal neovascularization associated with age-related macular degeneration*  
Principal Investigator, 1998-2001

*Evaluation of safety and duration of efficacy of anecortave acetate sterile suspension versus placebo following a single sub-Tenon's injection for the inhibition of neovascularization in patients with exudative age-related macular degeneration*  
Principal Investigator, 1998-2001

*Phase I, multicenter study of the safety, tolerability, pharmacokinetics, and activity of single-dose intravitreal injection of rhuFab V2 in subjects with neovascular age-related macular degeneration*  
Principal Investigator, 1999-2001

*Evaluation of efficacy and safety of a sub-Tenon's injection of anecortave acetate sterile suspension versus placebo in patients with exudative age-related macular degeneration (AMD) following treatment with photodynamic therapy (PDT) using Visudyne™*  
Principal Investigator, 2000-2001

*Phase I open-label trial of NX1838 (anti-VEGF) to establish the safety and pharmacokinetic profile in patients with age-related macular degeneration*  
Principal Investigator, 2000-2001

*Treatment of Age-related Macular Degeneration with Photodynamic Therapy (TAP)*  
Principal Investigator, 1996-2002  
Member, TAP/VIP Study Advisory Group, July 2000-June 2001

*Protein kinase C  $\beta$  inhibitor studies: Diabetic Macular Edema Study and Diabetic Retinopathy Study*  
Principal Investigator, 1998-2002

*Feeder Vessel Study: Phase I randomized, single-blinded, placebo-controlled, two-armed, parallel group design study of enhanced ICG laser photocoagulation of choroidal neovascular feeder vessels in patients with age-related macular degeneration*  
Principal Investigator, 2001-2002

*EOP1000: Phase IB open-label multicenter trial to establish the safety and pharmacokinetic profile of three consecutive injections of EYE001 (anti-VEGF PEGylated aptamer) in*

*patients with age-related macular degeneration without previous or concomitant photodynamic therapy with Visudyne*

Principal Investigator, 2000-2002

*EOP1001: Safety and pharmacokinetic profile of 3 consecutive intravitreal injections in patients with exudative AMD who are scheduled to receive photodynamic therapy (PDT) with Visudyne*

Principal Investigator, 2000-2002

*Verteporfin in Photodynamic Therapy Study*

Principal Investigator, 1998-2003

Member, TAP/VIP Study Advisory Group, July 2000-June 2001

*Visudyne™ with Altered (Delayed) Light in Occult (VALIO) Study: A randomized, controlled, masked, multicenter, phase II study of the effect of Visudyne™ therapy with delayed light application in occult with no classic subfoveal choroidal neovascularization secondary to age-related macular degeneration*

Principal Investigator, 2001-2003

*EOP1005: A Phase II randomized, controlled, double-masked, dose-finding, multi-center, comparative trial, in parallel groups, to establish the safety and preliminary efficacy of intravitreal injections of EYE001 (anti-VEGF pegylated aptamer), given every 6 weeks for 12 to 30 weeks to patients with clinically significant diabetic macular edema (CSME) involving the center of the macula*

Co-investigator, 2002-2003

*TTT4CNV Study: Transpupillary thermotherapy for subfoveal occult choroidal neovascularization in age-related macular degeneration*

Principal Investigator, 2000-2004

*Oculex Study: A Phase 2 randomized, multicenter, dose-ranging, controlled, parallel-group trial to assess the safety and effectiveness of dexamethasone posterior segment drug delivery system (DEX PS DDS®) in the treatment of persistent macular edema*

Principal Investigator, 2001-2004

*Visudyne™ Early Retreatment (VER) Study: Multicenter, randomized, parallel group, double-masked, controlled phase IIIB, 2-year study comparing the efficacy and safety of Visudyne™ therapy with early retreatment to standard treatment in predominantly classic subfoveal choroidal neovascularization secondary to age-related macular degeneration*

Principal Investigator, 2001-2004

*The Implantable Miniature Telescope (IMT™) in patients with central vision impairment associated with age-related macular degeneration or Stargardt's macular dystrophy*

Principal Investigator, 2003-2005

*A randomized, double-masked, placebo-controlled, parallel group, multicenter, dose-ranging study of denufosol tetrasodium (INS37217) intravitreal injection in subjects with rhegmatogenous retinal detachment*

Co-investigator, 2004-2005

*Protein Kinase C  $\beta$  Inhibitor Studies, Diabetic Retinopathy Study 2*

Principal Investigator, 2001-2006

*Intravitreal Steroid Injection Studies (ISIS)*

Co-investigator, 2002-2006

*A randomized, single-masked, multicenter, Phase 2 evaluation of the effect of photodynamic therapy using verteporfin (Visudyne<sup>®</sup> Therapy) in combination with intravitreal injection of either 0 mg, 1 mg, or 4 mg of triamcinolone acetonide in occult subfoveal and minimally classic subfoveal choroidal neovascularization (CNV) secondary to age-related macular degeneration (AMD): Visudyne with Intravitreal Triamcinolone Acetonide (VisTA) Trial*

Principal Investigator, 2004-2006

*Diabetes Aminoguanidine/Pimagedine Trial*

Co-investigator, 1996

*Human Insulin Analogue Study*

Co-investigator, 1997

*Fluocinolone Acetonide in Diabetic Macular Edema (FAME 4) Study A multicenter, randomized, masked, controlled study to evaluate the safety and efficacy of Retisert<sup>™</sup>, an intravitreal fluocinolone acetonide implant, in the treatment of patients with diabetic macular edema*

Co-investigator, 2001-2007

*Protein Kinase C  $\beta$  Inhibitor Study B7A-MC-MBDL, Reduction in the occurrence of center-threatening diabetic macular edema*

Principal Investigator, 2004-2010

*Anecortave Acetate Risk-Reduction Trial (AART)*

Principal Investigator, 2004-2008

*Protocol A43221001: A Phase 1 / 2 randomized, masked, placebo-controlled, single and multiple-dose, sequential dose escalation study of the safety and efficacy of AG-013958 in subjects with subfoveal choroidal neovascularization associated with age-related macular degeneration*

Principal Investigator, 2004-2006

*A Phase 1 open-label study for the evaluation of tolerability of four dose levels of Cand5 administered by single intravitreal injection in patients with wet age-related macular degeneration*

Co-investigator, 2005-2007

*A Phase II, dose ranging, open-labeled, multi-center study to evaluate the safety and efficacy of combretastatin A4 phosphate for treating subfoveal choroidal neovascularization in subjects with pathologic myopia*

Principal Investigator, 2005-2006

*Interval Dose Evaluation of Anecortave Acetate (IDEAA)*

Principal Investigator, 2005-2008

*Eyetech 1012: A Phase 4, randomized, active controlled, double masked, single dummy, multi-center comparative trial, in parallel groups, to compare the safety and efficacy of intravitreal injections of Macugen® given every 6 weeks for 102 weeks plus sham photodynamic therapy (PDT), to Macugen® plus PDT with Visudyne in subjects with predominantly classic subfoveal choroidal neovascularization (CNV) secondary to age-related macular degeneration (AMD)*

Co-investigator, 2005-2007

*Cand5 Anti-VEGF RNAi Evaluation (CARE): Phase 2 dose comparison of Cand5 for subfoveal choroidal neovascularization associated with wet age-related macular degeneration*

Principal Investigator, 2005-2007

*Veritas: A 24-month randomized, double-masked, sham controlled, multicenter, phase IIIB study comparing photodynamic therapy with verteporfin (Visudyne®) plus two different dose regimens of intravitreal triamcinolone acetonide (1 mg and 4 mg) versus Visudyne® plus intravitreal pegaptanib (Macugen®) in patients with subfoveal choroidal neovascularization secondary to age-related macular degeneration*

Principal Investigator, 2005-2006

*Natural history and genetics study of macular telangiectasia (MacTel)*

Principal Investigator, 2005-

*RNAi Assessment of Cand5 in Diabetic Macular Edema (RACE)*

Co-investigator, 2005-2007

*A 6-month, Phase III, multicenter, masked, randomized, sham-controlled trial (with 6-month open-label extension) to assess the safety and efficacy of 700 µg and 350 µg dexamethasone posterior segment drug delivery system (DEX PS DDS) applicator system in the treatment of patients with macular edema following branch retinal vein occlusion or central retinal vein occlusion*

Principal Investigator, 2005-2007

*Visudyne Patient Registry*

Co-investigator, 2005-2007

*Phase IV study of daily dosing (vs previous "on demand") of Cialis vs Viagra vs placebo and its effect on visual functioning in healthy males or those with mild erectile dysfunction*

Principal Investigator, 2005-2006

*The effect of ruboxistaurin on clinically significant macular edema in patients with diabetes mellitus, as assessed by optical coherence tomography*

Co-investigator, 2005-

*A multi-center, double-masked, randomized, vehicle-controlled, parallel group evaluation of the safety and efficacy of OT-551 ophthalmic solution to prevent formation or delay progression of nuclear cataract formation in post-vitreectomy patients*

Co-investigator, 2005-2007

*A 3-year, Phase III, multicenter, masked, randomized, sham-controlled trial to assess the safety and efficacy of 700 µg and 350 µg dexamethasone posterior segment drug delivery system (DEX PS DDS) applicator system in the treatment of patients with diabetic macular edema*

Principal Investigator, 2006-2007

*A Phase IIIb, multicenter study to evaluate the safety and tolerability of ranibizumab in naïve and previously treated subjects with choroidal neovascularization secondary to age-related macular degeneration (SAILOR)*

Principal Investigator, 2006-2007

*Macugen (pegaptanib sodium) for angioid streaks and other uncommon conditions complicated by choroidal neovascular membrane*

Principal Investigator, 2006-2010

*Macugen (pegaptanib sodium) for pathological myopia complicated by subfoveal choroidal neovascularization*

Principal Investigator, 2006-2010

*Study of the efficacy and safety of intravitreal injection of Macugen for neovascular lesions of AMD with recent onset*

Principal Investigator, 2006-

*Eyetech 1023: Phase IV, open label, multicenter trial of maintenance intravitreal injections of Macugen® (pegaptanib sodium) given every 6 weeks for 48 weeks in subjects with subfoveal neovascular age-related macular degeneration (AMD) initially treated with a modality resulting in maculopathy improvement*

Co-investigator, 2006-2008

*Small Interfering RNA In MacUlar Degeneration Study (SIRIUS): A 2 year, multicenter, randomized, controlled, masked, dose-finding trial to assess the safety and efficacy of multiple intravitreal injections of AGN211745 (small interfering RNA) in subjects with subfoveal CNV secondary to AMD*

Co-investigator, 2007-2008

*Sirion Phase II randomized, double-masked, placebo-controlled, dose-comparison study of the safety and efficacy of fenretinide in the treatment of geographic atrophy in age-related macular degeneration*

Co-investigator, 2007-2010

*Age-related Macular Degeneration: Detection of Onset of new Choroidal neovascularization (AMD DOC) study comparing preferential hyperacuity perimetry (PHP) with supervised Amsler grid in detecting AMD for earlier treatment in high-risk fellow eyes (Johns Hopkins)*

Co-investigator, 2007-2009

*Denali: A 24-month randomized, double-masked, controlled, multicenter, phase IIIB study assessing safety and efficacy of verteporfin (Visudyne® photodynamic therapy administered in conjunction with ranibizumab (Lucentis™) versus ranibizumab (Lucentis™) monotherapy in patients with subfoveal choroidal neovascularization secondary to age-related macular degeneration*

Principal Investigator, 2007

*OMEGA: A randomized, double-masked, dose-ranging, multi-center, Phase II study comparing the safety and efficacy of OT-551 with placebo to treat geographic atrophy associated with age-related macular degeneration.*

Principal Investigator, 2007-2009

*COBALT: COmbining Bevasiranib And Lucentis Therapy. A phase III, randomized, double-masked, parallel-assignment study of intravitreal bevasiranib sodium, administered every 8 or 12 weeks as maintenance therapy following three injections of Lucentis®, compared with Lucentis® monotherapy every 4 weeks in patients with exudative age-related macular degeneration (AMD)*

Principal Investigator, 2007-2008

*A multicenter, randomized, placebo-controlled, double-masked, parallel group, dose-ranging clinical trial of intravitreal microplasmin in patients undergoing surgical vitrectomy: The MIVI III (Microplasmin for Vitreous Injection III) Trial*

Co-investigator, 2007-2008

*A masked, multicenter, randomized, controlled trial to assess the safety and efficacy of 700 µg dexamethasone posterior segment drug delivery system (DEX PS DDS) applicator system in combination with laser photocoagulation compared with laser photocoagulation alone in the treatment of subjects with diffuse diabetic macular edema*

Principal Investigator, 2007-2009

*A study of ranibizumab injection in subjects with clinically significant with macular edema center involvement secondary to diabetes mellitus (RIDE)*

Principal Investigator, 2007-

*Indocyanine green (ICG) angiographic evaluation of ranibizumab (Lucentis®) treatment of pigment epithelial detachment (PED) associated with age-related macular degeneration (AMD)*  
Principal Investigator, 2007-2009

*Phase I, single ascending dose trial to establish the safety, tolerability, and pharmacokinetic profile of intravitreal injections of E10030 (anti-PDGF pegylated aptamer) monotherapy and of E10030 given in combination with Lucentis 0.3mg/eye in subjects with neovascular AMD (Ophthotech 1000)*  
Principal Investigator, 2007-2008

*Phase I, single ascending dose and parallel group trial to establish the safety, tolerability, and pharmacokinetic profile of multiple intravitreal injections of Volociximab ( $\alpha 5\beta 1$  integrin antagonist) as monotherapy or given in combination with Lucentis 0.5mg/eye in subjects with neovascular AMD (Ophthotech 3000)*  
Principal Investigator, 2008-

*Natural History of Geographic Atrophy Progression (GAP) Study*  
Principal Investigator, 2008-2009

*Anecortave acetate for treatment of steroid- induced intraocular pressure (IOP) elevation*  
Principal Investigator, 2008-2010

*Randomized, placebo controlled, double-masked, multicenter trial of microplasmin intravitreal injection for non-surgical treatment of focal vitreomacular adhesion*  
Co-investigator, 2008-2010

*Phase 2, randomized, double-masked, placebo-controlled, dose-ranging clinical study to assess the safety and efficacy of subconjunctival injections of sirolimus in patients with DME secondary to diabetic retinopathy*  
Principal Investigator, 2008-2010

*Geographic Atrophy Treatment Evaluation (GATE) Study*  
Principal Investigator, 2009-

*Phase III, double-masked, multicenter, randomized, active treatment-controlled study of the efficacy and safety of 0.5 mg and 2.0 mg ranibizumab administered monthly or on an as-needed basis (PRN) in patients with subfoveal neovascular age-related macular degeneration (HARBOR)*  
Principal Investigator, 2009-

*Phase II, randomized, double-masked, placebo- controlled, add-on study to assess the efficacy of oral aliskiren 300 mg one daily for diabetic macular edema*  
Principal Investigator, 2009-2010

*Phase 1a, multicenter, open-label, single-dose, dose-escalation study of the safety, tolerability, pharmacokinetics, and immunogenicity of intravitreal injections of FCFD4514S in patients with geographic atrophy*  
Principal Investigator, 2009-2010

*Impact of Lucentis on psychological morbidity in patients with macular edema and neovascularization secondary to retinal vein occlusion*

Principal Investigator, 2009-

*Phase 2, randomized, double-masked, controlled trial to establish the safety and efficacy of intravitreal injections of E10030 (anti-PDGF pegylated aptamer) given in combination with Lucentis® in subjects with neovascular age-related macular degeneration*

Principal Investigator, 2010-

*Phase 2b dose-ranging study of pazopanib eye drops versus ranibizumab intravitreal injections for the treatment of neovascular age-related macular degeneration*

Principal Investigator, 2010-

*Multi-center, double-masked, parallel group, placebo-controlled study to assess the efficacy and safety of voclosporin as therapy in subjects with active noninfectious intermediate, posterior or pan-uveitis*

Co-investigator, 2011-

Chairman, Haas Fund Committee (for research), Mt. Sinai Medical Center, Cleveland, Ohio; 1992-1999.

Macula Society Meeting, 2004: Consultant for Allergan, Novartis, Eyetech, and Pfizer in roundtable panels to plan future clinical trials.

Multiple research projects in progress with medical students, residents, fellows, and senior investigators.

## SELECTED LECTURES AND PAPERS PRESENTED AT ANNUAL MEETINGS

### AMERICAN ACADEMY OF OPHTHALMOLOGY

NOVEMBER 1976, LAS VEGAS, NEVADA

- *Course Speaker:* Complications of argon laser photocoagulation: prevention and management

NOVEMBER 1977, DALLAS, TEXAS

- *Course Speaker:* Complications of argon laser photocoagulation: prevention and management

NOVEMBER 1978, KANSAS CITY, KANSAS

- *Course Speaker:* Randomized clinical study of partial laser treatment of choroidal neovascularization in the histoplasmosis syndrome

NOVEMBER 1980, CHICAGO, ILLINOIS

- *Course Director:* Evaluation and management of proliferative retinopathies
- *Course Speaker:* Complications of argon laser photocoagulation: prevention and management

## NOVEMBER 1981, ATLANTA, GEORGIA

- *Course Director:* Evaluation and management of proliferative retinopathies
- *Course Speaker:* The macula: preretinal, intraretinal, and subretinal disorders
- *Course Speaker:* Complications of argon laser photocoagulation: prevention and management

## NOVEMBER 1982, SAN FRANCISCO, CALIFORNIA

- *Co-Chairman, Symposium:* Update on macular diseases
- *Course Director:* Evaluation and management of proliferative retinopathies
- *Course Speaker:* Complications of argon laser photocoagulation: prevention and management
- *Course Speaker:* The macula: preretinal, intraretinal, and subretinal disorders

## OCTOBER 29-NOVEMBER 3, 1983, CHICAGO, ILLINOIS

- *Symposium Speaker:* Important points in management of patients with choroidal new vessel membranes (NVMs)
- *Course Director:* Evaluation and management of proliferative retinopathies
- *Course Speaker:* The macula: preretinal, intraretinal, and subretinal disorders
- *Course Speaker:* Laser photocoagulation for posterior and anterior segment disorders

## NOVEMBER 9-15, 1984, ATLANTA, GEORGIA

- *Course Director:* Evaluation and management of proliferative retinopathies
- *Course Speaker:* The macula: preretinal, intraretinal, and subretinal disorders
- *Course Speaker:* Laser photocoagulation for posterior and anterior segment disorders
- *Course Speaker:* YAG laser surgery for the practicing ophthalmologist

## SEPTEMBER 29-OCTOBER 4, 1985, SAN FRANCISCO, CALIFORNIA

- *Symposium Speaker:* Fluorescein angiography: practical role in the office management of macular diseases
- *Formal Discussion of Paper:* Recurrent multifocal inner choroiditis, by C Morgan, H Schatz
- *Course Director:* Evaluation and management of proliferative retinopathies
- *Course Speaker:* Krypton argon regression of neovascularization study
- *Course Speaker:* Diabetic retinopathy and pregnancy
- *Course Speaker:* Laser for complicated cases of choroidal neovascular membranes
- *Course Speaker:* YAG laser vitreous surgery

## NOVEMBER 10-13, 1986, NEW ORLEANS, LOUISIANA

- *Co-Chairman, Symposium:* Diabetic retinopathy: ten years after the Diabetic Retinopathy Study
- *Symposium Speaker:* Krypton laser for proliferative diabetic retinopathy and the KARNs
- *Course Director:* Evaluation and management of proliferative retinopathies
- *Course Speaker:* Laser therapy of choroidal neovascularization (CNV) associated with pigment epithelial detachments (PED) in patients over the age of 55
- *Course Speaker:* Diabetic retinopathy and pregnancy
- *Course Speaker:* Clinical experience with the tunable dye laser
- *Course Speaker:* Krypton laser for proliferative diabetic retinopathy

## NOVEMBER 7-12, 1987, DALLAS, TEXAS

- *Chairman, Symposium:* State of the art management of common ocular disorders – a salute to the NIH centennial

- *Formal Discussion of Paper:* Atrophic creep of the retinal pigment epithelium following focal macular photocoagulation, by C Morgan, H Schatz
- *Course Director:* Evaluation and management of proliferative retinopathies
- *Course Speaker:* Laser therapy for proliferative diabetic retinopathy
- *Course Speaker:* Pregnancy and diabetes
- *Course Speaker:* The Krypton Argon Regression of Neovascularization Study (KARNS)
- *Course Speaker:* Management of pigment epithelial detachments
- *Course Speaker:* Application of the dye laser

OCTOBER 8-12, 1988, LAS VEGAS, NEVADA

- *Co-Chairman, Symposium:* Retinal and choroidal manifestations of systemic disease
- *Formal Discussion of Paper:* Speed of growth of subretinal neovascularization in age-related macular degeneration, by J Vander, H Schatz, C Morgan
- *Course Director:* Evaluation and management of proliferative diabetic retinopathy
- *Course Speaker:* Rare, unusual, interesting, and/or instructive medical retinal cases
- *Course Speaker:* Evaluation and management of proliferative retinopathies
- *Course Speaker:* The macula: preretinal, intraretinal, and subretinal disorders
- *Course Speaker:* Argon and krypton laser photocoagulation for posterior segment disorders

OCTOBER 29-NOVEMBER 2, 1989, NEW ORLEANS, LOUISIANA

- *Co-Chairman, Symposium:* Update on cystoid macular edema
- *Formal Discussion of Paper:* Direct and feeder vessel photocoagulation of retinal angiomas with dye yellow laser, by CV Blodi
- *Course Director:* Evaluation and management of proliferative diabetic retinopathy
- *Course Speaker:* Rare, unusual, and/or interesting medical retinal cases
- *Course Speaker:* Diagnosis and treatment of preproliferative and proliferative diabetic retinopathy
- *Course Speaker:* Management of pigment epithelial detachments

OCTOBER 28-NOVEMBER 1, 1990, ATLANTA, GEORGIA

- *Co-Chairman and Summarizing Speaker, Symposium:* Pathogenesis, diagnosis, and management of less common causes of choroidal neovascular membranes
- *Course Director:* Evaluation and management of proliferative diabetic retinopathy
- *Course Speaker:* Rare, unusual, and/or interesting medical retinal cases
- *Course Speaker:* Unusual causes of CNV
- *Course Speaker:* Management of pigment epithelial detachments
- *Instructor, Skills Transfer Course:* Diabetes 2000 Diabetic Retinopathy Workshop

OCTOBER 13-17, 1991, ANAHEIM, CALIFORNIA

- *Co-Chairman and Introductory Speaker, Symposium:* Current concepts in evaluation and management of diseases causing retinal and iris neovascularization
- *Course Speaker:* Rare, unusual, and/or interesting medical retinal cases
- *Course Speaker:* Unusual causes of CNV
- *Course Speaker:* Management of pigment epithelial detachments
- *Instructor, Skills Transfer Course:* Diabetes 2000 Diabetic Retinopathy Workshop

NOVEMBER 8-12, 1992, DALLAS, TEXAS

- *Paper:* Krypton Argon Regression of Neovascularization Study: results of a randomized clinical trial

- *Co-Chairman and Summarizing Speaker, the Macula Society Symposium:* Hereditary retinal disorders
- *Speaker, the Retina Society Symposium:* Debate on controversies in the management of vitreoretinal disorders. Topic: (Pro) Is laser treatment of subfoveal neovascularization beneficial?
- *Senior Instructor:* Guidelines for the evaluation and treatment of choroidal neovascularization in the MPS
- *Associate Instructor, Skills Transfer Course:* Retinal vein occlusion
- *Instructor, Skills Transfer Course:* Diabetes 2000 Diabetic Retinopathy Workshop
- *Course Speaker:* Occult subretinal new vessels in age-related macular degeneration. Topic: Management of pigment epithelial detachments
- *Course Speaker:* Preretinal, intraretinal, and subretinal disorders. Topic: Other causes of choroidal neovascularization

NOVEMBER 14-18, 1993, CHICAGO, ILLINOIS

- *Formal Discussion of Paper:* Digital indocyanine green videoangiography of occult choroidal neovascularization by D Guyer, L Yannuzzi, J Slakter, M Hope-Ross, P Latsoudis, et al
- *Associate Instructor, Skills Transfer Course:* Branch and central vein occlusion
- *Senior Instructor:* Guidelines for the evaluation and treatment of choroidal neovascularization in the MPS
- *Course Speaker:* Occult subretinal new vessels in age-related macular degeneration. Topic: Management of pigment epithelial detachments
- *Course Speaker:* Preretinal, intraretinal, and subretinal disorders
- *Introductory Speaker at Symposium:* Advances in fundus imaging
- *Co-Chairman:* Free papers, Retina section

OCTOBER 29-NOVEMBER 3, 1994, SAN FRANCISCO, CALIFORNIA

- *Presiding Officer and Director of Symposium:* Systemic vascular diseases and the eye
- *Senior Instructor:* Guidelines and treatment for choroidal neovascularization in the MPS
- *Course Speaker:* Preretinal, intraretinal, and subretinal disorders
- *Instructor, Skills Transfer Course:* Diabetes 2000 Diabetic Retinopathy Workshop
- *Instructor, Skills Transfer Course:* Branch and central vein occlusion

OCTOBER 27-NOVEMBER 2, 1995, ATLANTA, GEORGIA

- *Speaker, the Macula Society Symposium:* Inflammatory chorioretinal diseases
- *Instructor, Skills Transfer Course:* Branch and central vein occlusion
- *Instructor, Skills Transfer Course:* Diabetes 2000 Diabetic Retinopathy Workshop
- *Speaker:* Central Vein Occlusion Study Symposium – Evaluation of prophylactic photocoagulation in non-perfused central vein occlusion
- *Formal Discussion of Paper:* Persistence and recurrence of choroidal neovascularization after photocoagulation in age-related macular degeneration

OCTOBER 25-31, 1996, CHICAGO, ILLINOIS

- *Moderator of Vitreoretinal Frontiers: 21st Century:* Management of age-related macular degeneration
- *Formal Discussion of Paper:* ICG videoangiography of drusen as a possible predictive indicator for exudative maculopathy, by P Hanutsaha, DR Guyer, LA Yannuzzi, et al
- *Co-Chairperson and Speaker, the Macula Society Symposium:* Retinal and choroidal manifestations of systemic diseases

- *Instructor, Skills Transfer Course:* Branch and central vein occlusion
- *Instructor, Skills Transfer Course:* Diabetes 2000 Diabetic Retinopathy Workshop

OCTOBER 24-30, 1997, SAN FRANCISCO, CALIFORNIA

- *Chairperson and Introductory Speaker, the Macula Society Symposium:* Age-related macular degeneration
- *Symposium Chairperson:* Retinal transplantation and translocation
- *Symposium Panelist:* Age-related macular degeneration
- *Course Speaker:* Central retinal vein occlusion
- *Instructor, Skills Transfer Course:* Branch and central vein occlusion
- *Instructor, Skills Transfer Course:* Macular Photocoagulation Studies guidelines for treatment
- *Instructor, Skills Transfer Course:* Diabetes 2000 Diabetic Retinopathy Workshop

NOVEMBER 5-11, 1998, NEW ORLEANS, LOUISIANA

- *Co-author:* Paper, with DAL Maberley, LA Yannuzzi, KA Gitter. Radiation exposure: a new risk factor for idiopathic parafoveal telangiectasia (IPT)
- *Co-presenter:* Poster, with H Tabandeh, HW Flynn, ML Lewis, FJ Rodriguez, A Rodriguez. Visual outcomes of untreated submacular neovascular membrane in patients with high myopia and age 50 years and over
- *Presiding Officer:* Free papers, Retina section
- *Symposium Presiding Officer:* Vitreoretinal Update 1998
- *Discussion Leader:* Diabetic macular edema
- *Instructor, Skills Transfer Course:* Branch and central vein occlusion
- *Instructor, Skills Transfer Course:* Guidelines from the Macular Photocoagulation Study for evaluating and treating choroidal neovascularization
- *Instructor, Skills Transfer Course:* Diabetes 2000 Diabetic Retinopathy Workshop

OCTOBER 22-27, 1999, ORLANDO, FLORIDA

- *Formal Discussion of Paper:* Light panretinal photocoagulation (LPRP) versus classic panretinal photocoagulation (CPRP) in proliferative diabetic retinopathy (PDR) by FM Bandello, R Brancato, U Menchini, P Lanzetta
- *Presiding Officer:* Free papers, Retina section
- *Presiding Officer and Introductory Speaker, the Macula Society Symposium:* Infectious diseases of the choroid and retina
- *Instructor, Skills Transfer Course:* Branch and central vein occlusion
- *Instructor, Skills Transfer Course:* Guidelines from the Macular Photocoagulation Study for evaluating and treating choroidal neovascularization
- *Instructor, Skills Transfer Course:* Diabetes 2000 Diabetic Retinopathy Workshop
- *Instructor:* Update from the Macula Society: Impact of randomized clinical trial results for age-related macular degeneration
- *Panelist, Vitreoretinal Update 1999:* A whole new world? Practical advice for dealing with patients with subfoveal CNV in 2000

OCTOBER 19-25, 2000, DALLAS, TEXAS

- *Speaker:* Anecortave acetate: What's going on?
- *Panelist, Retina 2000:* Photodynamic therapy: Controversies and consensus
- *Instructor:* Update from the Macula Society: Impact of randomized clinical trial results on treating retinal diseases.

- *Instructor, Skills Transfer Course:* Branch and central vein occlusion
- *Instructor, Skills Transfer Course:* Current treatment guidelines for choroidal neovascularization
- *Presiding Officer and Introductory Speaker, the Macula Society Symposium:* New therapies for age-related macular degeneration

## NOVEMBER 10-14, 2001, NEW ORLEANS, LOUISIANA

- *Speaker, 2001 Opening Session and Business Meeting:* Current studies on photodynamic therapy for age-related macular degeneration
- *Panelist, Retina 2001:* Controversies in the management of subfoveal choroidal neovascularization
- *Senior Instructor, Instructional Course:* Update from the Macula Society 2001: Impact of randomized clinical trials on the treatment of retinal diseases
- *Instructor, Skills Transfer Course:* Branch and central vein occlusion
- *Instructor, Skills Transfer Course:* Diabetes 2001: Workshop on diabetic retinopathy
- *Instructor, Skills Transfer Course:* Photodynamic therapy: current treatment guidelines for choroidal neovascularization

## OCTOBER 19-23, 2002, ORLANDO, FLORIDA

- *Section Co-Chair, Retina 2002:* The retinal office in the new millennium
- *Senior Instructor, Instructional Course:* Update from the Macula Society 2002: Impact of randomized clinical trials on the treatment of retinal diseases
- *Co-Chair and Introductory Speaker, the Macula Society Symposium:* Update on diabetic retinopathy
- *Moderator, Heidelberg Symposium:* Indocyanine green angiography for identification of feeder vessels associated with choroidal neovascularization
- *Co-author:* Paper, with JS Slakter, LA Yannuzzi, Russell SR, Hudson HL, D'Amico DJ, Jerdan J, Zilliox P, Robertson SM, the Anecortave Acetate Study Group. Anecortave acetate administered as posterior juxtasceral injection in patients with subfoveal choroidal neovascularization in AMD
- *Instructor, Skills Transfer Course:* Photodynamic therapy: current treatment guidelines for choroidal neovascularization
- *Instructor, Skills Transfer Course:* Diabetes 2002: Workshop on diabetic retinopathy
- *Instructor, Skills Transfer Course:* Branch and central vein occlusion

## NOVEMBER 15-18, 2003, ANAHEIM, CALIFORNIA

- *Panelist, Retina 2003:* The Experts Debate: Controversies in age-related macular degeneration
- *Co-Chair and Introductory Speaker, the Macula Society Symposium:* Update on the treatment of age-related macular degeneration
- *Formal Discussion of Paper:* Combined photodynamic therapy with verteporfin and intravitreal triamcinolone acetonide for choroidal neovascularization secondary to age-related macular degeneration by RF Spaide, JA Sorenson, LC Maranan
- *Instructor, Skills Transfer Course:* Photodynamic therapy: current treatment guidelines for choroidal neovascularization
- *Instructor, Skills Transfer Course:* Diabetes 2003: Workshop on diabetic retinopathy

## OCTOBER 22-26, 2004, NEW ORLEANS, LOUISIANA

- *Moderator, Panel Discussion, Retina 2004:* Alternative, pharmacologic, and surgical treatment of AMD, AMD case presentation and discussion
- *Formal Discussion of Paper:* The nature of the neovascularization in the fellow eye in patients with unilateral retinal angiomatous proliferation by A Aizman, NE Gross, AJ Brucker, LA Yannuzzi
- *Co-author:* Paper, with JS Heier, HL Hudson, DF Martin, DM Berinstein, P Sternberg Jr. An implantable miniature telescope for the treatment of moderate to profound vision loss due to macular degeneration
- *Moderator:* Current status of pharmacologic treatment of AMD (anti-VEGF, anecortave acetate)
- *Speaker:* Macular degeneration: management 20 years ago. Symposium, Twenty years of progress in the treatment of retinal diseases: Where we have been, where we are now, and where we will be

## OCTOBER 14-18, 2005, CHICAGO, ILLINOIS

- *Speaker, Retina 2005:* Changing concepts and controversies: Controversies in age-related macular degeneration; Section II, Pharmacologic therapy for visually significant AMD: Macugen update
- *Moderator, Breakfast with the Experts:* Pharmacotherapy for AMD
- *Co-Chair and Introductory Speaker, the Macula Society Symposium:* Pharmacotherapy for macular diseases
- *Co-author:* Paper, with HL Hudson, DF Martin, DM Berinstein, JS Heier, BD Kuppermann. One-year Phase 2/3 results of a visual prosthetic device for the treatment of vision loss due to macular degeneration
- *Co-author:* Poster, with MC Sharma, DG Miller, ZN Zakov, SD Pendergast, MA Novak, H Zegarra. Results of the surgical management of idiopathic epiretinal membrane

## NOVEMBER 10-14, 2006, LAS VEGAS, NEVADA

- *Speaker, Retina 2006:* Efficacy and safety of pegaptanib (Macugen): three-year results; Section II, AMD and pharmacologic monotherapy
- *Speaker,* Developing a low vision services team in an ophthalmology practice. Special Meeting, Vision rehabilitation program; Part II, Currents trends in vision rehabilitation
- *Co-Chair and Introductory Speaker, the Macula Society Symposium:* Diagnosis and management of macula edema from retinal vascular diseases
- *Moderator, Breakfast with the Experts:* Pharmacotherapy for AMD

## NOVEMBER 9-13, 2007, NEW ORLEANS, LOUISIANA

- *Speaker, Retina 2007:* Summary of other macular degeneration therapies under investigation

## NOVEMBER 7-11, 2008, ATLANTA, GEORGIA

- *Speaker, Retina 2008:* Fenretinide and AMD
- *Discussant, Retina 2008, Retina Luncheon Discussion Groups:* Management of vein occlusions
- *Co-Chair, Introductory Speaker, and Concluding Speaker, the Macula Society Symposium:* Current advances in the management of AMD
- *Co-Chair and Panelist, Retina, vitreous original paper session, AMD*

## OCTOBER 23-27, 2009, SAN FRANCISCO, CALIFORNIA

- *Moderator (with Albert J. Augustin, MD), Retina 2008:* AMD Part III, Exudative AMD

- *Discussant, Retina 2009, Retina Luncheon Discussion Groups: Pharmacologic treatments for AMD*
- *Co-Chair, Introductory Speaker, and Concluding Speaker, the Macula Society Symposium: Evaluation and management of macular edema*
- *Panelist, Retina, vitreous original paper session, AMD*
  - Nussenblatt RB, A randomized pilot study of AMD with systemic immunosuppressive therapy
  - Kuppermann BD, Interference of cell survival signals by targeting  $\alpha 5\beta 1$  integrin (Volociximab) and VEGF in neovascular AMD: A phase 1 study
  - Ho AC, Targeting platelet derived and vascular endothelial growth factors for neovascular AMD: phase 1 study
  - Rosenfeld PJ, Phase 1 results of the complement C3 inhibitor POT-4 in AMD
  - [prosenfeld@med.miami.edu](mailto:prosenfeld@med.miami.edu)
  - Roth DB, Inferior intravitreal injection site associated with higher incidence of post-injection endophthalmitis
- *Presenter, Media Briefing, Eye Medicine in the News: 2009 Year in Review. Advances in the management of dry age-related macular degeneration*

OCTOBER 15-19, 2010, CHICAGO, ILLINOIS

- *Speaker, Retina 2010: Pharmacotherapies for the reduction of retinal toxins*

#### AMERICAN SOCIETY OF CONTEMPORARY OPHTHALMOLOGY

JUNE 1979, LAS VEGAS, NEVADA

- *Course Director: Evaluation and management of retinal vascular and macular diseases*

MARCH 1980, ORLANDO, FLORIDA

- *Course Director: Evaluation and management of retinal vascular and macular diseases*

MARCH 1981, ORLANDO, FLORIDA

- *Course Director: Macular and retinal diseases*
- *Course Director: Diabetic retinopathy: current methods of management*

MARCH 1982, ORLANDO, FLORIDA

- *Course Director: Management of common vascular lesions of the retina*

MARCH 1983, MIAMI, FLORIDA

- *Course Director: Common eye problems for non-ophthalmologists*
- *Course Director: Management of common vascular lesions of the retina*
- *Course Speaker: Argon and krypton laser for angioid streaks*
- *Course Speaker: Background organization and inclusion criteria for the Macular Photocoagulation Study: results for SMD Study*
- *Course Speaker: Krypton Macular Photocoagulation Study*
- *Course Speaker: YAG laser*
- *Course Speaker: Importance of different wavelengths for therapy of retinal diseases*

MARCH 4-10, 1984, ORLANDO, FLORIDA

- *Speaker at Symposium: Retina / choroid / vitreous*
- *Speaker at Symposium: Laser techniques*

- *Course Director:* Angiography / laser therapy / fundus photography / interpretations
- *Course Director:* Management of common vascular lesions
- *Course Director:* Treatable macular diseases
- *Course Director:* Management of common eye problems for the non-specialist
- *Course Director:* Clinical importance of various laser wavelengths

NOVEMBER 30-DECEMBER 3, 1984, LAS VEGAS, NEVADA

- *Symposium Chairman:* YAG laser for vitreous surgery
- *Course Director:* Ambulatory eye surgery
- *Course Director:* Current management of macular diseases
- *Paper:* Krypton vs argon laser regression of neovascularization in diabetic retinopathy

MARCH 16-23, 1985, ORLANDO, FLORIDA

- *Course Director:* Fluorescein angiography
- *Course Director:* Treatable macular diseases
- *Course Director:* Angiography of common vascular lesions
- *Course Director:* Treatable macular diseases
- *Lecturer:* Retina / Choroid / Vitreous Symposium

MARCH 10-14, 1986, HOLLYWOOD, FLORIDA

- *Symposium Lecture:* Current Management of CNV Symposium
- *Course Director:* Treatable macular diseases
- *Course Director:* Diabetes and the eye
- *Course Director:* Fluorescein angiography

MARCH 15-20, 1987, LAS VEGAS, NEVADA

- *Symposium Lecture:* New studies of laser therapy for choroidal neovascularization
- *Course Director:* Treatable macular diseases
- *Course Director:* Fluorescein angiography

MARCH 11-14, 1988, HOLLYWOOD, FLORIDA

- *Symposium Co-Chairman:* Retina Seminar; Laser Surgery Seminar
- *Paper:* The tunable dye laser
- *Paper:* Advances in the management of diabetic retinopathy

MARCH 9-12, 1989, HOLLYWOOD, FLORIDA

- *Symposium Chairman:* Advances in ophthalmology
- *Symposium Lecture:* Management of pigment epithelial detachments
- *Paper:* Tunable dye laser—results in age-related macular degeneration

MARCH 29-31, 1990, PHOENIX, ARIZONA

- *Symposium Co-Chairman:* Retina Seminar
- *Paper:* Etiology and management of pigment epithelial detachments
- *Symposium Lecture:* Laser surgery for ocular disorders

JUNE 27-29, 1993, CHICAGO, ILLINOIS

- *Seminar Faculty:* Update on treatment of choroidal neovascularization complicating age-related macular degeneration  
– The Macular Photocoagulation Studies: An Update

**ASSOCIATION FOR RESEARCH IN VISION AND OPHTHALMOLOGY****MAY 2-11, 1983, SARASOTA, FLORIDA**

- Red krypton laser vs blue-green argon laser for proliferative diabetic retinopathy with neovascularization of the disc
- *Co-author with F Ferris.* Inexpensive collaborative clinical research

**APRIL 30-MAY 4, 1984, SARASOTA, FLORIDA**

- Red krypton and/or green or blue-green argon laser photocoagulation in treatment of angioid streaks

**APRIL 28-APRIL 29, 1991, SARASOTA, FLORIDA**

- *Moderator, Retina Section.* Macular disease and laser
- *Co-author with D Mirando, R Kalski, D Cano, W Bruner, R Wyszynski.* A decrease in alpha-mannosidase in the serum of patients with age-related macular degeneration and the augmentation of its activity with zinc
- *Co-author with ML Lewis, M Borup, M Elman.* Photocoagulation of pigment epithelial detachments: results of a randomized prospective pilot study

**MAY 3-MAY 8, 1992, SARASOTA, FLORIDA**

- *Moderator, Clinical Research Section.* Macular degeneration of aging
- *Co-author with DB Cano, S Schloff, DM Mirando, RS Kalski, WF Bruner, RE Wyszynski, WJ Castellani.* Serum alpha-mannosidase, albumin, protein and zinc levels from patients with age-related macular degeneration
- *Co-author with SP Bruder, DS Bardenstein.* Monoclonal antibody SB-3 reacts specifically with basement membrane of the retinal pigment epithelium

**MAY 2-MAY 7, 1993, SARASOTA, FLORIDA**

- *Co-author with L Zhou, JM Chokreff.* High-precision retinal vessel diameter measurement in angiography
- *Co-author with JJ Plantner, TA Drew, GJ Dwyer.* Metalloproteinases of the interphotoreceptor matrix
- *Co-author with RS Kalski, DB Cano, WE Bruner, RE Wyszynski, L Kanter, SH Yoo, DM Mirando, S Schloff.* Serum retinol binding protein and transthyretin levels from patients with age-related macular degeneration

**MAY 1-MAY 6, 1994, SARASOTA, FLORIDA**

- *Co-author with TA Quinn, WE Bruner, JJ Plantner.* Matrix metalloproteinases of the interphotoreceptor matrix and vitreous
- *Co-author with KA Cingle, RS Kalski, WE Bruner, L Kanter, SH Yoo, DB Cano, RE Wyszynski.* Age-dependent lysosomal enzyme activity of fresh retinal pigment epithelial cells from human eye donors

**MAY 14-MAY 20, 1995, FT LAUDERDALE, FLORIDA**

- *Co-author with WW Lee, D Wilson.* New approach on correcting spatial distortion and registration in ophthalmic angiography
- *Co-author with JM Chokreff, WW Lee.* Combination of vessel tracking and image registration in ophthalmic angiography
- *Co-author with B Horio.* An inherited pattern in a family with optic disc pits and iris colobomas,

- *Co-author with JR Alpers, MSR Gorla. Serum carotenoids and age-related macular degeneration*

APRIL 30-MAY 5, 2000, FT LAUDERDALE, FLORIDA

- *Paper, Writing Committee Chair with the TAP Study Group. Photodynamic therapy of subfoveal choroidal neovascularization in age-related macular degeneration using verteporfin (Visudyne): exploratory analysis of good visual outcomes—TAP report #4.*
- *Session Moderator. Photodynamic therapy II.*

APRIL 29-MAY 4, 2001, FT LAUDERDALE, FLORIDA

- *Co-author with LA Yannuzzi, S Russell, HL Hudson, J Jerdan, the Anecortave Acetate Research Group. Sub-Tenon's retrobulbar anecortave acetate with and without Visudyne photodynamic therapy in patients with subfoveal choroidal neovascularization in age-related macular degeneration (AMD). (Poster)*
- *Co-author with MG Maguire, SL Fine, AM Maguire, RJ D'Amato, the AMDATS Research Group. Results of the Age-related Macular Degeneration and Thalidomide Study (AMDATS). (Poster)*
- *Co-author with SD Schwartz, M Blumenkranz, PJ Rosenfeld, JW Miller, J Haller, G Fish, L Lobes, WL Greene, Reimann J. Safety of rhuFabV2, an anti-VEGF antibody fragment, as a single intravitreal injection in subjects with neovascular age-related macular degeneration. (Poster)*

MAY 5-MAY 10, 2002, FT LAUDERDALE, FLORIDA

- *Session Moderator. Age-related macular degeneration III.*
- *First author and presenter for the EyeTech Study Group. Anti-VEGF therapy for subfoveal choroidal neovascularization secondary to age-related macular degeneration: phase IB results.*
- *Presenter for AC Ho, the VAM Study Group. The VAM Study: An open-label, multicenter, safety study of verteporfin therapy for predominantly classic subfoveal choroidal neovascularization (CNV) due to AMD.*
- *Co-author with JS Slakter, LA Yannuzzi, SR Russell, HL Hudson, J Jerdan, P Zilliox, S Robertson, the Anecortave Acetate Group. Sub-Tenon's administration of the angiostatic agent anecortave acetate in AMD patients with subfoveal choroidal neovascularization (CNV) – the clinical outcome.*

APRIL 25-APRIL 29, 2004, FT LAUDERDALE, FLORIDA

- *First author and Presenter for Rosenfeld PJ, VALIO Study Group. Verteporfin with Altered (Delayed) Light In Occult (VALIO) – 12-month results of a Phase II controlled clinical trial.*
- *Co-author with Hudson HL, Martin DF, Berinstein DM, Singerman LJ, Leonard RE, Heier JS, Dehning DO, Connolly BP, IMT-002 Study Group. The Implantable Miniature Telescope in patients with macular degeneration – results of the Phase II/III IMT-002 trial at three months.*

MAY 1-MAY 5, 2005, FT LAUDERDALE, FLORIDA

- *First author and Presenter for Macugen Diabetic Retinopathy Study Group. Findings of the Phase 2 Trial of the safety and efficacy of pegaptanib sodium (Macugen™) in patients with diabetic macular edema.*

*DAVID J KELMAN RESEARCH FOUNDATION*

- YAG Laser Vitreous Surgery Course: October and December 1982; April, July, and October 1983, February and August 1984; June and December 1985; June 1986

*THE MACULA SOCIETY*

JANUARY 1978, KEY BISCAYNE, FLORIDA

- Partial treatment of subretinal neovascularization in the histoplasmosis ocular syndrome

JANUARY 1980, KEY BISCAYNE, FLORIDA

- Thrombotic thrombocytopenic purpura with ocular findings

FEBRUARY 1981, SCOTTSDALE, ARIZONA

- Treatment of SRNV in angioid streaks

FEBRUARY 1982, MIAMI, FLORIDA

- Spontaneous improvement in the first affected eye of patients with bilateral disciform macular degeneration
- Krypton laser for choroidal neovascularization

MARCH 1983, ORLANDO, FLORIDA

- Red krypton laser vs blue-green laser for proliferative diabetic retinopathy

JANUARY 25-28, 1984, SAN DIEGO, CALIFORNIA

- Red krypton and green argon laser photocoagulation of choroidal neovascularization complicating angioid streaks

FEBRUARY 27-MARCH 2, 1985, MARATHON, FLORIDA

- YAG laser for vitreous surgery

FEBRUARY 26-MARCH 1, 1986, BOCA RATON, FLORIDA

- Multifocal choroiditis-uveitis-subretinal fibrosis spectrum

JUNE 24-JUNE 27, 1987, CANNES, FRANCE

- Krypton Argon Regression of Neovascularization Study (KARNS)

FEBRUARY 24-FEBRUARY 27, 1988, TUCSON, ARIZONA

- Tunable dye laser therapy for choroidal neovascularization

JUNE 21-25, 1989, BOSTON, MASSACHUSETTS; COMBINED MEETING WITH THE RETINA SOCIETY

- Executive Committee for Combined Meeting
- *Chairman*: Session on choroidal neovascularization
- Tunable dye laser therapy for choroidal neovascularization complicating age-related macular degeneration

FEBRUARY 28-MARCH 3, 1990, MAUI, HAWAII

- Ocular involvement in a family with arteriohepatic dysplasia (Alagille's syndrome)

FEBRUARY 20-FEBRUARY 23, 1991, ORLANDO, FLORIDA

- Krypton-Argon Regression of Neovascularization Study (KARNS) as a model in ophthalmic clinical research

FEBRUARY 26-29, 1992, SCOTTSDALE, ARIZONA

- *Moderator*: Macula Section

FEBRUARY 24-27, 1993, NAPLES, FLORIDA

- *Moderator*: Retina Vascular II Section

FEBRUARY 23-26, 1994, RANCHO MIRAGE, CALIFORNIA

- Recurrent choroidal neovascularization: what have we learned from the macular photocoagulation study?

JUNE 18-22, 1997; 20TH ANNIVERSARY MEETING, FLORENCE, ITALY

- Planning Committee

FEBRUARY 18-21, 1998, BOCA RATON, FLORIDA

- Planning Committee

FEBRUARY 24-27, 1999, SAN DIEGO, CALIFORNIA

- Planning Committee

FEBRUARY 23-26, 2000, RIO GRANDE, PUERTO RICO

- Planning Committee

FEBRUARY 28-MARCH 1, 2001, SCOTTSDALE, ARIZONA

- Planning Committee, Program Committee

JUNE 12-15, 2002, BARCELONA, SPAIN

- Anti-VEGF therapy for subfoveal choroidal neovascularization secondary to age-related macular degeneration: Phase IB study results
- Planning Committee, Program Committee, Awards Committee, 25<sup>th</sup> Anniversary Meeting

FEBRUARY 26-MARCH 1, 2003, NAPLES, FLORIDA

- Four-year results of verteporfin therapy for subfoveal CNV due to AMD: second year of an open-label extension of the TAP investigation
- Planning Committee, Program Committee, Awards Committee

FEBRUARY 25-28, 2004, LAS VEGAS, NEVADA

- VEGF inhibition study in ocular neovascularization (VISION): efficacy outcomes from the pivotal Phase II/III Macugen<sup>TM</sup> (pegaptanib sodium) clinical trials
- Tribute to J. Donald M. Gass, MD; with William F. Mieler, MD; Paul Sternberg, MD; Lawrence A. Yannuzzi, MD; Harry W. Flynn, Jr, MD
- Planning Committee, Program Committee, Awards Committee

FEBRUARY 23-26, 2005, KEY BISCAYNE, FLORIDA

- Safety and efficacy of pegaptanib sodium (Macugen<sup>TM</sup>) in patients with diabetic macular edema: results of the Phase 2 trial
- Planning Committee, Program Committee, Awards Committee

FEBRUARY 22-25, 2006, NORTH SAN DIEGO, CALIFORNIA

- Two-year systemic safety of pegaptanib sodium in patients with neovascular age-related macular degeneration: results of the V.I.S.I.O.N trials.
- Planning Committee, Program Committee, Awards Committee

MAY 30-JUNE 2, 2007, LONDON, ENGLAND

- Phase II studies with bevasiranib. Overview of the CARE and RACE studies.
- Planning Committee, Program Committee, Awards Committee

MARCH 26-29, 2008, PALM BEACH, FLORIDA

- Planning Committee, Program Committee, Awards Committee

SEPTEMBER 30-OCTOBER 4, 2009, NEW YORK CITY

Retina Congress 2009. Combined Meeting of the American Society of Retina Specialists, The Macula Society, and The Retina Society

- Ranibizumab treatment for pigment epithelial detachment (PED) in age-related macular degeneration (AMD).
- Planning Committee, Program Committee, Awards Committee

FEBRUARY 24-27, 2010, TUCSON, ARIZONA

- Planning Committee, Program Committee, Awards Committee

MARCH 9-12, 2011, BOCA RATON, FLORIDA

- Planning Committee, Program Committee, Awards Committee

*WILMER INSTITUTE, JOHNS HOPKINS UNIVERSITY, BALTIMORE, MARYLAND*

APRIL 1974

- Hereditary foveal dystrophy

APRIL 1975

- Angioid streaks associated with hemochromatosis

APRIL 1976

- Idiopathic papillomacular subretinal neovascularization

APRIL 1978

- Protocol for a randomized controlled clinical trial of partial laser histoplasmosis syndrome

APRIL 1979

- Diabetic retinopathy and pregnancy

MAY 1980

- Proliferative diabetic retinopathy in juvenile onset diabetics

JUNE 1980, SUN VALLEY, IDAHO; RETINAL VASCULAR CENTER 10TH ANNIVERSARY MEETING

- PDR in juvenile onset diabetics: high-risk proliferative diabetic retinopathy in juvenile onset diabetics

SEPTEMBER 1980, DIABETIC RETINOPATHY MEETING

- Diabetic retinopathy and pregnancy

MAY 1981

- Laser treatment of subretinal neovascular membranes in angioid streaks

JULY 1981; BIG SKY, MONTANA; RETINAL VASCULAR CENTER 11TH ANNIVERSARY MEETING

- Prompt aggressive scatter treatment of proliferative diabetic retinopathy

APRIL 1982

- Krypton laser scatter treatment for proliferative diabetic retinopathy

APRIL 25-27, 1984

- Krypton versus argon laser treatment of choroidal neovascular membranes in angioid streaks

AUGUST 1-5, 1985; NEW SEABURY, MASSACHUSETTS; RETINAL VASCULAR CENTER 15TH ANNIVERSARY MEETING

- Management of choroidal neovascularization associated with pigment epithelial detachment in patients over 55

APRIL 16-18, 1986

- Laser photocoagulation of hemorrhagic pigment epithelial detachment (HPED) with choroidal neovascularization

APRIL 24-26, 1989

- *Co-author with MG Maguire, et al.* Persistent and recurrent neovascularization after krypton laser photocoagulation for neovascular lesions of ocular histoplasmosis

## SELECTED PRESENTATIONS AT LOCAL, NATIONAL, AND INTERNATIONAL MEETINGS AND SYMPOSIA

*First annual fluorescein angiography course.* Chicago, Illinois, April 1975.

Erie Ophthalmology Society. Erie, Pennsylvania, February 1977.

*Symposium on diabetes.* Cleveland, Ohio, April 1977.

*Medicine 1977 course.* Case Western Reserve University, Cleveland, Ohio, May 1977.

*Retinal vascular disease course.* Detroit, Michigan, June 1977.

*Youngstown Hospital Association Joint Ophthalmological Symposium.* Youngstown, Ohio, October 1977.

*Intraocular microsurgical and vitrectomy course.* Ingalls Memorial Hospital, Chicago, Illinois, December 1977.

*Clinical management of retinal diseases.* Kresge Eye Institute, Wayne State University, February 1978.

*Post-graduate diabetes course.* Case Western Reserve University, Cleveland, Ohio, March 1978.

Course Director, *Clinical management of retinal diseases.* St. Luke's Hospital, Cleveland, Ohio, June 1978.

Course Director, *Vitrectomy workshop*. St. Luke's Hospital, Cleveland, Ohio, September 1978, and August 1979.

*Intraocular microsurgical and vitrectomy course*. Henry Ford Hospital, Detroit, Michigan, October 1979.

Biennial Congress of the Israel Ophthalmology Society. Jerusalem, Israel, October 1979.

Ophthalmic Photographers Society Annual Meeting. San Francisco, California, November 1979.

*Intraocular microsurgical and vitrectomy course*. Ingalls Memorial Hospital, Chicago, Illinois, July 1980.

Course Director, *Intraocular microsurgical workshop*. St. Luke's Hospital, Cleveland, Ohio, July 1980.

Visiting Professor, Vanderbilt University, Nashville, Tennessee, March 1980.

Conference, High Risk Pregnancies. University Hospitals, Cleveland, Ohio, April 1980.

Education Symposium, Diabetes Association of Greater Cleveland. Cleveland, Ohio, May 1980.

American College of Surgeons. Dayton, Ohio, May 1980.

Ohio State Medical Association. Cincinnati, Ohio, May 1980.

American Diabetes Association 40th Annual Meeting. Washington DC, June 1980.

Retina Workshop. St. Mary's Hospital (San Francisco), Yosemite National Park. March 1981.

*Diabetes and pregnancy*. Pennsylvania Ophthalmological Academy. Philadelphia, Pennsylvania, May 1981.

Course Director, Ohio State Medical Association Meeting, Ophthalmology Symposium. Cleveland, Ohio, May 1981.

*Intraocular microsurgical and vitrectomy course*. Henry Ford Hospital, Detroit, Michigan, July 1981.

International Association of Ocular Surgeons. Monte Carlo, October 1981.

*Intraocular Microsurgical and Vitrectomy Course*. Scheie Institute, University of Pennsylvania, Philadelphia, Pennsylvania, October 1981.

Symposium on Ocular Histoplasmosis. Indiana University, Bloomington, Indiana, January 1982.

*Red krypton laser for macular and retinal vascular diseases.* New Orleans Academy of Ophthalmology. New Orleans, Louisiana, March 1982.

1) *Diabetic retinopathy including pregnancy.* 2) *High-risk PDR in juvenile onset diabetics.* 3) *Fundus aspects of systemic disease.* 4) *Management of common vascular lesions of the retina.* 5) *Red krypton laser for macular and retinal vascular diseases.* Visiting Professor, Ophthalmology Seminar. Southwestern University, Dallas, Texas, March 1982.

Ohio State Medical Association. Dayton, Ohio, May 1982.

International Symposium of Anterior and Posterior Segments Surgery. Gleneagles, Scotland, May 1982.

*Intraocular microsurgical and vitrectomy course.* Ingalls Memorial Hospital, Chicago, Illinois, June 1982.

Course Director, *Intraocular microsurgical workshop.* St. Luke's Hospital, Cleveland, Ohio, July 1982.

*Intraocular microsurgical and vitrectomy course.* Bethesda Hospital, Cincinnati, Ohio, August 1982.

*Intraocular microsurgical and vitrectomy course.* Georgetown University, Washington, DC, September 1982.

Course Director, *Intraocular microsurgical and vitrectomy course.* St. Luke's Hospital, Cleveland, Ohio, September 1982.

Guest of Honor, II International Symposium sponsored by the Venezuelan Society of Ophthalmology. Caracas, Venezuela, September 1982.

*Krypton laser scatter treatment for proliferative diabetic retinopathy.* XXIV International Congress of Ophthalmology, International Symposium on Retinal Diseases. San Diego, California, October 1982.

*YAG laser course.* Ernest A. Katzen Memorial Eye Research Institute and Mercy Hospital, Baltimore, Maryland, November 1982.

*YAG laser.* Soroka Hospital, Ben Gurion University of the Negev, Israel, February 1983.

1) *Special techniques: fluid gas exchange, bipolar cautery, and vacuum technique.* 2) *Role of argon laser photocoagulation therapy in the diabetic patient.* 3) *Anterior segment vitrectomy.* Diabetes Symposium. Scheie Eye Institute, University of Pennsylvania, Philadelphia, Pennsylvania, February 1983.

1) *Laser blue, green, yellow, red - theoretical considerations.* 2) *Management of SRCN with krypton red.* 3) *Treatment of macular pucker and results.* 4) *The myopic macula.* First Annual Retina Meeting. Indiana University, Indianapolis, Indiana, March 25-26, 1983.

1) *The krypton laser.* 2) *Krypton laser for proliferative diabetic retinopathy.* International Ophthalmic Laser Symposium. Washington, DC, April 8-9, 1983.

1) *Basics of common retinal disorders and therapeutic update.* 2) *Senile macular degeneration.* 3) *Presumed ocular histoplasmosis syndrome.* Cincinnati, Ohio, May 14, 1983.

*The argon laser.* Ohio State Medical Association. Columbus, Ohio, May 17, 1983.

*Intraocular microsurgical and vitrectomy course.* Georgetown University, Washington, DC, June 1983.

*Laser for presumed ocular histoplasmosis syndrome.* International College of Surgeons, Cleveland, Ohio, September 27, 1983.

*Krypton laser photocoagulation for proliferative diabetic retinopathy.* 5th International Congress of Laser Medicine and Surgery. Detroit, Michigan, October 7-9, 1983.

*Capabilities of different laser wavelengths.* International Association of Ocular Surgeons, Honolulu, Hawaii, December 5-9, 1983.

1) *Other chorioretinal diseases with choroidal neovascularization.* 2) *Management of proliferative diabetic retinopathy.* 3) *Management of the diabetic macula.* 4) *Management of maculopathy of aging.* University of Michigan 56th Annual Spring Postgraduate Course. Ann Arbor, Michigan, April 2-3, 1984.

Chairman, Macular and Retinal Disease Section. Speaker, *Photocoagulation treatment for diabetic retinopathy.* The American-Israeli International Ophthalmologic Society Laser Meeting. Jerusalem, Israel, June 18-22, 1984.

1) *Vitrectomy for proliferative diabetic retinopathy.* 2) *Clinical value of various laser wavelengths.* Hadassah Hospital Annual Meeting. Israel, June 1984.

Co-Chairman, Vitreous Surgery Section. Speaker, *YAG laser for vitreous surgery.* International Symposium on Surgical Lasers in Ophthalmology (Chaired by Dr. Danielle Aron-Rosa). Paris, France, June 28-29, 1984.

*YAG laser for vitreous surgery.* Vitreous Society. Palm Springs, California, November 29-December 1, 1984.

1) *Other choroidal neovascular membranes--diagnosis and treatment.* 2) *KARNS.* Symposium on Diseases of the Macula. Scheie Eye Institute, University of Pennsylvania, Philadelphia, Pennsylvania, April 17-19, 1985.

1) *Current management of choroidal neovascular membranes.* 2) *Proliferative diabetic retinopathy.* Kresge Eye Institute, Detroit, Michigan, April 24, 1985.

Visiting Professor. *YAG applications in anterior and posterior vitreous.* Heritage Hospital, Detroit, Michigan, May 18, 1985.

*Angioid streaks.* Fourth Annual Symposium on Retinal and Macular Disease. Paris, France, September 13-14, 1985.

*Krypton Argon Regression of Neovascularization Study (for proliferative diabetic retinopathy).* Retinal and Macular Disease and Fluorescein Angiography Symposium. Baden-Baden, West Germany, September 16-20, 1985.

*1) Posterior segment uses of the YAG laser. 2) Laser treatment for angioid streaks. 3) The Influence of pregnancy on diabetic retinopathy. 4) Krypton laser for proliferative diabetic retinopathy.* American College of Surgeons. Chicago, Illinois, October 13-18, 1985.

*Laser therapy for hemorrhagic pigment epithelial detachments.* Pan-American Association of Ophthalmology. Key Biscayne, Florida, January 10-12, 1986.

Member, Scientific Advisory Board. International Diabetologist Workshop of the Pennsylvania Diabetes Academy, Physicians' Leadership Series. Princeton, New Jersey, January 19-22, 1986.

Allied Health Professional Conference, Cleveland Diabetes Association. Cleveland, Ohio, April 23, 1986.

Program Chairman, New Studies of Laser Therapy for Choroidal Neovascularization. Ohio Ophthalmological Society, Annual Scientific Meeting, Columbus, Ohio, June 7-8, 1986.

*Laser photocoagulation for choroidal neovascularization (CNV) associated with pigment epithelial detachment in patients over the age of 55.* Club Jules Gonin. Copenhagen, Denmark, August 10-15, 1986.

*Optic nerve pit with sensory retinal detachment.* Wills Eye Hospital Conference on Fluorescein Angiography. Philadelphia, Pennsylvania, September 5, 1986.

*Clinical experience with the tunable dye laser.* International Association of Ocular Surgeons. Montreal, Canada, September 12-15, 1986.

*New studies in the treatment of choroidal neovascular membranes.* Keynote Speaker, Ophthalmic Laser Surgical Society. New York, New York, September 16, 1986.

*Clinical experience with the tunable dye laser.* Keynote Speaker, Boston University Department of Ophthalmology Annual Alumni Meeting. Boston, Massachusetts, October 15, 1986.

Consultant Panel Member, Standards of Care Conference to Set Standards for Care of Diabetic Retinopathy. Kentucky Diabetes Foundation. Lexington, Kentucky, October 16-17, 1986.

*Laser photocoagulation for choroidal neovascularization associated with pigment epithelial detachment.* International Laser Photocoagulation Meeting. New Orleans, Louisiana, November 5-8, 1986.

*Clinical experience with the tunable dye laser.* Retina Society of New Jersey. Newark, New Jersey, December 10, 1986.

Faculty Member, *Advanced Retinal-Laser Course.* Montego Bay, Jamaica, January 7-11, 1987.

*Optimal laser wavelengths for various retinal vascular and macular diseases.* Louisville Ophthalmological Society. Louisville, Kentucky, January 15, 1987.

Visiting Professor, University of Louisville School of Medicine, Department of Ophthalmology. Louisville, Kentucky, January 15, 1987.

1) *Laser therapy for diabetic retinopathy;* 2) *Macular diseases.* Guest of Honor, Mexican Retina Society. Mazatlan, Mexico, February 2-7, 1987.

1) *Laser treatment for common retinal problems.* 2) *Office management of common retinal problems.* Invited Guest Speaker, Retina Vitreous Education and Research Foundation. Pittsburgh, Pennsylvania, March 14, 1987.

1) *Retinal pigment epithelium detachments.* 2) *Choroidal neovascularization in myopia and angioid streaks.* 3) *Tunable dye laser for macula disease.* 4) *Update on macular photocoagulation.* Guest Faculty Member, the Thirtieth Annual Postgraduate Symposium in Ophthalmology, Ohio State University. Columbus, Ohio, March 27-28, 1987.

1) *Optimal laser wavelengths for fundus diseases.* 2) *Laser treatment for age-related macular degeneration.* 3) *Laser treatment for diabetic retinopathy revisited.* Visiting Professor, St. Louis University Department of Ophthalmology. St. Louis, Missouri, April 3, 1987.

1) *Age-related macular degeneration--current concepts in laser treatment'* 2) *Diabetic retinopathy and pregnancy.* American Academy of Ophthalmology North Central Regional Update Course. Chicago, Illinois, April 24-26, 1987.

*Clinical applications of the dye laser in maculopathies.* 13th Annual George N. Wise Day Symposium: Lasers in Ophthalmology. White Plains, New York, June 5, 1987.

1) *Tunable dye laser;* 2) *Current management of diabetic retinopathy.* Phillips Eye Institute, Current Trends in Ophthalmology. Minneapolis, Minnesota, September 12, 1987.

Program Chairman. Speaker, *Clinical Experience with the tunable dye laser.* Ohio Ophthalmological Society, Annual Scientific Meeting. Columbus, Ohio, September 18-20, 1987.

*The diabetic eye.* Ohio State Medical Association, Annual Meeting. Columbus, Ohio, September 18-20, 1987.

*Krypton laser for proliferative diabetic retinopathy: The KARNs Study.* Diabetic Retinal Symposium 4: Management Strategy. State University of New York Health Science Center at Brooklyn. New York, New York, November 20-21, 1987.

*Age-related macular degeneration symposium.* New York Academy of Medicine. New York, New York, December 7, 1987.

1) *Panretinal PRP--single session vs. multiple sessions--treatment techniques.* 2) *Photocoagulation treatment of pigment epithelial detachment associated with choroidal neovascularization.* 3) *Branch retinal vein occlusion: results of BRVO Trial--indications and treatment techniques.* Midwinter Laser Course and Fluorescein Angiography Workshop, Washington University School of Medicine. St. Louis, Missouri, February 5-6, 1988.

Meeting Moderator, *Update of laser therapy for choroidal neovascular membranes.* International Association of Ocular Surgeons. Hollywood, Florida, March 10, 1988.

1) *Diabetic retinopathy, KARNs, macular edema, and application of dye laser to diabetic retinopathy.* 2) *The dye laser when applied to subretinal neovascularization and pigment epithelial disease.* Retina Symposium: State of the Art, A Look to the Future. Retina Research Fund of St. Mary's Hospital and Medical Center. San Francisco, California, March 17-19, 1988.

1) *Branch vein occlusions.* 2) *Advances in the management of diabetic retinopathy.* 3) *The tunable dye laser for choroidal neovascularization.* Retina Update. New Orleans, Louisiana, April 23, 1988.

*The dye laser for choroidal neovascularization.* Guest of Honor, First Annual Meeting of the European Macula Group. Coimbra, Portugal, May 14, 1988.

1) *Photocoagulation for diabetic retinopathy.* 2) *The dye laser.* 3) *Age-related macular degeneration.* 4) *Ocular histoplasmosis syndrome.* 5) *Branch vein occlusion.* Guest Faculty Member, Clinical Advances in Treatment of Retina and Vitreous Diseases for the Practicing Ophthalmologist Symposium. Ophthalmology Center of Excellence of Humana Hospital, Lexington, Kentucky, May 20-21, 1988.

*Other diseases associated with subretinal neovascularization.* Symposium on Laser Treatment of Macular Disease. Pan-American Association of Ophthalmology Annual Meeting. Orlando, Florida, May 26-29, 1988.

*Natural history and results of treatment in pigment epithelial detachment with associated choroidal neovascularization.* Retina Society Annual Meeting. Philadelphia, Pennsylvania, June 17-18, 1988.

Speaker, *Natural history of pigment epithelial detachment with associated choroidal neovascular membrane in age-related macular degeneration.* Co-author, *The anatomy of the Kranenberg syndrome*, with H. Lincoff, I. Kreissig, L. Yannuzzi, M. Cox, T. Burton, F. Jakobiec. Club Jules Gonin. Brugge, Belgium, September 4-8, 1988.

Program Chairman. Speaker, *Laser photocoagulation for choroidal neovascularization associated with pigment epithelial detachment.* Ohio Ophthalmological Society Annual Meeting. Columbus, Ohio, June 24-26, 1988.

*Advantages, disadvantages, and indications for use of the dye laser.* American Society of Ophthalmic Registered Nurses Symposium, Advances in the Surgical Management of Retinal Pathology. Las Vegas, Nevada, October 11, 1988.

1) *Dye laser photocoagulation.* 2) *Management of pigment epithelial detachment.* Visiting Professor, Kansai Medical University and Nagoya National Hospital, Osaka, Nagoya, and Tokyo, Japan, March 18-28, 1989.

Faculty Member, Advanced Retinal Seminar, Retinal Specialists Think Tank. Cases presented: *Coats disease; Optic pits; Other diseases.* St. Mary's Hospital and Medical Center, Carmel, California, April 9-12, 1989.

*Tunable dye laser for choroidal neovascularization complicating age-related macular degeneration.* Second International Congress on Laser Technology in Ophthalmology. Lugano, Switzerland, May 24-27, 1989.

Program Co-Chairman. Speaker, *Multifocal choroiditis.* Ohio Ophthalmological Society Annual Meeting. Cleveland, Ohio, June 2-4, 1989.

Chair, Choroidal Neovascularization Section. Speaker, *Tunable dye laser therapy for choroidal neovascularization complicating age-related macular degeneration.* Combined Meeting of the Macula and Retina Societies. Boston, Massachusetts, June 21-25, 1989.

*Ocular involvement in a family with arteriohepatic dysplasia (Alagille's syndrome).* Nantucket Retina Meeting. Nantucket, Massachusetts, August 4-5, 1989.

*Unusual causes of subretinal neovascularization.* Current Concepts in Retinal Diseases Symposium. Case Western Reserve University School of Medicine, Cleveland, Ohio, September 22, 1989.

Moderator, *Choroidal Neovascularization Section.* Second International Symposium on Ocular Circulation and Neovascularization. Baltimore, Maryland, September 25-27, 1989.

1) *Less common causes of choroidal neovascularization.* 2) *Management of pigment epithelial detachments.* 3) *Current management of retinal vein occlusions.* Visiting Professor, Annual Ophthalmology Conference. University of Rochester Medical Center, Rochester, New York, April 5-7, 1990.

*A family with optic pits and optic nerve and iris colobomas.* Club Jules Gonin. Lausanne, Switzerland, September 3-6, 1990.

*Treatment of serous macular detachments associated with optic pits.* Section Chairman, International Symposium on Fluorescein Angiography. Venice, Italy, September 8-12, 1990.

*A Family with optic nerve pits and iris colobomas.* Retina Society. Key Largo, Florida, October 3-6, 1990.

*Unusual causes of choroidal neovascularization.* Grand Rounds Visiting Lecturer, Massachusetts Eye and Ear Infirmary and Harvard Medical School, Boston, Massachusetts, November 15, 1990.

Guest Faculty Member, *The Macula Symposium.* Manhattan Eye, Ear and Throat Hospital, New York, New York, January 11-12, 1991.

1) *The Krypton Argon Regression of Neovascularization Study.* 2) *Uncommon causes of choroidal neovascularization.* 3) *Recurrent choroidal neovascularization.* Guest Faculty Member, Combined Vitreoretinal Surgical-Medical Retina Course. Sarasota, Florida, February 7-9, 1991.

1) *Unusual causes of choroidal neovascularization;* 2) *Pigment epithelial detachment;* 3) *Fluorescein angiography and its importance in the office management of macular disease;* 4) *Update of the Macular Photocoagulation Studies.* Featured Speaker, Memphis Eye Convention and the University of Tennessee 20th Annual Ophthalmology Day. Memphis, Tennessee, April 13-14, 1991.

Faculty Member, *Advanced retina symposium.* San Francisco, California, May 10-11, 1991.

Speaker, *Krypton laser for proliferative retinopathy and the Krypton Argon Regression of Neovascularization Study (KARNS).* Panel Member, 1) *Management of macular edema;* 2) *Applying the results of the Diabetic Retinopathy and Vitrectomy Study.* Invited Faculty Member, *Diabetic Retinopathy: A Comprehensive Review and Update.* Baltimore, Maryland, September 20, 1991.

1) *Pigment epithelial detachment: natural course and treatment.* 2) *Update of the Macular Photocoagulation Study.* 3) *Uncommon causes of choroidal neovascularization.* 4) *Practical management of diabetic retinopathy.* Guest Lecturer, 1991 Annual Clinical Conference of the Kansas City Society of Ophthalmology and Otolaryngology. Kansas City, Missouri, December 5-6, 1991.

1) *Treatment of subfoveal choroidal neovascularization.* 2) *The Krypton Argon Regression of Neovascularization Study (KARNS): results of a randomized controlled, clinical trial.* Faculty Member, Aspen Retinal Detachment Society, Twentieth Annual Meeting. Aspen, Colorado, March 1-6, 1992.

1) *Classification of ARMD III: serous RPE detachment;* 2) *Unusual and less common causes of choroidal neovascularization.* Workshop Faculty Member, *Clinical management of age-related macular degeneration: angiographic interpretation, laser indications and techniques.* Invited Faculty Member, Sixteenth Annual Ophthalmology Meeting of the University of Wisconsin, Current Concepts Seminar '92. Madison, Wisconsin, March 26-29, 1992.

*Retinal pigment epithelium detachment.* Invited Faculty Member, Third Anniversary of the Retina Center at Saint Joseph Hospital. Baltimore, Maryland, April 3, 1992.

*Photocoagulation management of subfoveal choroidal neovascularization.* Invited Faculty Member, Controversial Management Decisions in Vitreo-Retinal Disorders, Macular Holes and Submacular Membranes. Wills Eye Hospital Annual Meeting. Philadelphia, Pennsylvania, April 4, 1992.

*Retinal manifestations of selected systemic diseases.* Case Western Reserve University School of Medicine Alumni Program, The Diagnostic Detective: Perplexing Patient Problems. Cleveland, Ohio, April 10, 1992.

*1) Complications of laser photocoagulation; 2) Evaluation and management of subfoveal choroidal neovascularization in age-related macular degeneration.* Management of Retinal Vascular and Macular Disorders. The Center for Advanced Eye Surgery at Humana Hospital-Lexington, Lexington, Kentucky, May 15-16, 1992.

Session Moderator, *Age-related macular degeneration.* Poster, *Automated detection and quantification of retinopathy in digital fluorescein angiograms by an adaptive method.* Third International Symposium on Ocular Circulation and Neovascularization. Paris, France, May 21-24, 1992.

*1) Management of pigment epithelial detachment. 2) Glycosidases in human ocular disease: age-related macular degeneration,* with WE Bruner, RS Kalski, DB Cano, DM Mirando, S Schloff, SH Yoo, RE Wyszynski, KM Morgan, HE Grossniklaus, WJ Castellani. Department of Ophthalmology Faculty and Alumni Symposium: Celebration in Honor of the New Department of Ophthalmology and Edward W. Purnell, MD. Case Western Reserve University School of Medicine, Cleveland, Ohio, May 29, 1992.

*Retinopathy.* No-Nonsense Diabetes Management Symposium. Diabetes Association of Greater Cleveland and Case Western Reserve University School of Medicine, Cleveland, Ohio, June 3, 1992.

*Management of pigment epithelial detachments.* Angiofluoresceina Ocular y Laser en Oftalmologia. Guest of Honor, Grupo Latino Americano de Angiografia Ocular y Fotocoagulacion. Cancun, Mexico, July 16-18, 1992.

*Unusual case presentations.* Invited Presenter, The Retina Society. September 23-26, 1992, New York, New York.

*Best cases for laser therapy for subfoveal neovascularization.* Cleveland Ophthalmological Society. Cleveland, Ohio, October 13, 1992.

*Optimal management of diabetic retinopathy.* Clinical Day jointly sponsored by Long Island Jewish Medical Center and North Shore University Hospital/Cornell University Medical College, October 14, 1992.

*Results of the randomized, controlled recurrent subfoveal choroidal neovascularization study.* The Vitreoretinal Frontier. Dallas, Texas, November 6-7, 1992.

Moderator, *Indocyanine green angiography (ICG) Symposium*. Manhattan Eye, Ear and Throat Hospital, New York, New York, January 15-16, 1993.

*New findings from the Macular Photocoagulation Study*. Cleveland Ophthalmological Society. Cleveland, Ohio, April 13, 1993.

*Management of proliferative diabetic retinopathy with vitreous hemorrhage*. Guest Faculty Comprehensive Course in Diabetic Retinopathy. Scheie Eye Institute, University of Pennsylvania, Philadelphia, Pennsylvania, May 22, 1993.

Program Chairman. Speaker, *Indocyanine green angiography*. Ohio Ophthalmological Society. Cleveland, Ohio, June 4-5, 1993.

*Beyond the DCCT: management of diabetic retinopathy in insulin-dependent diabetes mellitus*. Diabetes Association of Greater Cleveland, November 1993.

*Management of choroidal neovascularization not evaluated by clinical trials*. Wilmer Ophthalmological Institute, January 1994.

*Angioid and choroidal rupture with neovascularization*. Fluorescein Angiography for the General Ophthalmologist. Scheie Eye Institute, University of Pennsylvania, Philadelphia, Pennsylvania, May 7, 1994.

*Update of the Macular Photocoagulation Study*. Macula: New Frontiers - An International Symposium. Kansas City, Missouri, June 23-25, 1994.

Panel Discussions, 1) *Age-related macular degeneration*. 2) *Vitreoretinal interfaces*. 3) *AIDS and other retinal inflammations*. San Francisco, California, October 28-29, 1994.

*Multifocal choroiditis*. Cleveland Ophthalmological Society. Cleveland, Ohio, February 7, 1995.

*New developments in the diagnosis and treatment of retinal vascular diseases*. University of Louisville, Department of Ophthalmology & Visual Sciences, Louisville, Kentucky, May 17-18, 1995.

*Vascularized pigment epithelial detachment*. X<sup>th</sup> Congress European Society of Ophthalmology. Milan, Italy, June 25-29, 1995.

*Less common causes of choroidal neovascularization*. Palm Beach County Ophthalmology Society. West Palm Beach, Florida, February 6, 1996.

*Diagnosis and treatment of retinal diseases*. Summit County Optometric Society Spring Conference. March 19, 1996.

*Update of the results of the Central Vein Occlusion Studies*. Grand Rounds, St. Luke's Hospital Department of Ophthalmology, June 7, 1996.

*Advances in the diagnosis and treatment of retinal diseases.* Ohio Optometric Association, June 19, 1996.

*Update of the results of the central vein occlusion studies to date.* Case Western Reserve University Department of Ophthalmology, 1996 Second Annual Faculty, Resident, and Alumni Research Day. Cleveland, Ohio, June 21, 1996.

*AMD laser results may now be better than perceived.* First Jerusalem International Congress on Retinal and Vitreous Diseases. Jerusalem, Israel, June 30-July 6, 1996.

*Your eyes and diabetes: a look at diabetic retinopathy.* Mt. Sinai Medical Center, Wellness Wednesday Programs. Cleveland, Ohio, May 17, 1995.

*Age-related macular degeneration: for the patient and family.* Mt. Sinai Medical Center, Wellness Wednesday Programs. Cleveland, Ohio, August 31, 1994; December 6, 1995; July 10, 1996.

*CNV studies.* University of Milan, Scientific Institute. Milan, Italy. September 10, 1996.

*Ocular fundus manifestations of systemic disease.* Summit County Optometric Society Winter Conference. Akron, Ohio, December 4, 1996.

*Retinal and choroidal manifestations of systemic disease.* Grand Rounds, Mt. Sinai Medical Center. Cleveland, Ohio, December 11, 1996.

*Age-related macular degeneration.* Retina-Vitreous Didactic Lecture Series. University Hospitals of Cleveland, Cleveland, Ohio, March 12, 1997.

*Diabetes and retinopathy.* Diabetes Association of Greater Cleveland, 1997 Allied Health Professionals Symposium, How Complicated Can Diabetes Get? Cleveland, Ohio, March 19, 1997.

1) *Central Vein Occlusion Studies.* 2) *Less common causes of choroidal neovascularization.* 3) *New studies of age-related macular degeneration.* Guest Speaker, Chicago Ophthalmological Society, 49th Annual Clinical Conference. Chicago, Illinois, April 24, 1997.

*Ocular manifestations of systemic diseases / Ocular inflammatory syndromes / Spots and dots.* Fifteenth Annual Retinal Disease Update. Innovative Images and Imaging. Department of Ophthalmology, Case Western Reserve University School of Medicine, Cleveland, Ohio, April 25, 1997.

1) *Central retinal vein occlusion study.* 2) *Unusual causes of choroidal neovascularization.* Retina Update '98. Phillips Eye Institute, Minneapolis, Minnesota, January 24, 1998.

Ophthalmic Director, Retina Session. Speaker, 1) *Age-related macular degeneration.* 2) *Less common causes of choroidal neovascularization.* 3) *Central retinal vein occlusion.* 4) *Optical*

*coherence tomography*. Island Ophthalmology Seminar '98. St. Thomas, US Virgin Islands, February 28-March 6, 1998.

1) *Less common causes of choroidal neovascularization*. 2) *Results of laser treatment for recurrent CNV in AMD are better than most ophthalmologists realize*. 3) *Diabetic retinopathy: medical considerations*. 4) *Laser treatment for proliferative diabetic retinopathy*. 5) *Ocular coherence tomography (OCT)*. 6) *Central retinal vein occlusion*. Round Table Moderator, Management of Macular Degeneration. New Orleans Academy of Ophthalmology, Symposium on Vitreoretinal and Uveitis Update. New Orleans, April 3-5, 1998.

1) *Central retinal vein occlusion*; 2) *Ocular coherence tomography*. Midwest Eye Spring Update Course. Indianapolis, Indiana, May 15, 1998.

1) *Management of diabetic retinopathy: laser and medical treatments*. 2) *Laser treatment of choroidal neovascularization*. Second Annual Meeting of the Georgia Society of Ophthalmology and the Tennessee Academy of Ophthalmology. Amelia Island, June 11-14, 1998.

Chairman, *Symposium on cystoid macular edema (Macula Society)*. Speaker, *Macular edema in central retinal vein occlusion*. Twenty-eighth International Congress of Ophthalmology. Amsterdam, The Netherlands, June 21-26, 1998.

Moderator, *Fluorescein angiography and interesting cases conference*. The Retina Society, Thirty-first Annual Scientific Session. Washington, DC, September 24-27, 1998.

*Formes exsudatives associées de DMLA avec néovascularization choroidienne occulte et bien définie (classic)*. (*Exudative forms associated with occult and well-defined (classic) choroidal neovascularization*.) III<sup>e</sup> Symposium International de Créteil: La DMLA en 1998: le Present, le Futur. Paris, France, November 20-21, 1998.

*Unusual placoid lesions*. Cleveland Ophthalmological Society. Cleveland, Ohio, December 15, 1998.

1) *Laser treatment of venous retinal occlusion*; 2) *Angiography in retinal vein occlusion*. XII Congress of the European Society of Ophthalmology. Stockholm, Sweden, June 27-July 1, 1999.

Speaker, *One-year angiographic outcomes following verteporfin therapy for subfoveal choroidal neovascularization in age-related macular degeneration: results of 2 randomized clinical trials*. Panelist, *Controversies from the first annual Vitreous Society 'Preferences and Trends' (PAT) Survey*. Vitreous Society 17<sup>th</sup> Annual Meeting. Rome, Italy, September 21-25, 1999.

Discussant, *Age-related macular degeneration symposium: medical treatment (prophylactic drusen treatment, antivasogenic drugs, transpupillary thermotherapy, radiation therapy,*

*feeder vessel technique, photodynamic therapy*). Section Moderator and Case Presenter. Macula 2000: Atlantic Coastal Retinal Meeting. New York, New York, January 14-15, 2000.

*Photodynamic therapy: overtreatment is traumatic, case selection is critical*. Cleveland Ophthalmological Society. Cleveland, Ohio, February 15, 2000.

*Basics of macular degeneration & photodynamic therapy for age-related macular degeneration*. Bombay Ophthalmologists Association Meeting. Mumbai, India, March 29, 2000.

1) *Update on photodynamic therapy*; 2) *Other treatments for age-related macular degeneration*; 3) *Other causes of choroidal neovascularization*. Current Subjects in Retina, Congress of the Institution of Ocular Microsurgery of the Autonomous University of Barcelona. Barcelona, Spain, May 18-19, 2000.

Speaker, *Choroidal changes in central serous chorioretinopathy and age-related macular degeneration*. Session Co-chairman, *Diabetic retinopathy*. Session Co-chairman, *VI<sup>th</sup> Michaelson Symposium on Ocular Circulation and Neovascularization*. VI<sup>th</sup> Mediterranean Ophthalmological Society Congress. Jerusalem, Israel, May 21-26, 2000.

1) *Management of choroidal neovascularization from causes other than macular degeneration*; 2) *Laser photocoagulation of patients with macular degeneration*. Ophthalmology 2000: Lasers for the General Ophthalmologist in the New Millennium. Brooklyn, New York, June 15, 2000.

*Results from multicenter trials: how did they change knowledge and therapy of diabetic retinopathy? The Diabetes Control and Complications Trial*. DR 2000, International Forum on Diabetic Retinopathy. Naples, Italy, September 7-9, 2000.

*The Krypton Argon Regression of Neovascularization Study*. Randomized Clinical Trials in Ophthalmology: A Symposium to Celebrate the 25th Anniversary of the First Publication from the Diabetic Retinopathy Study and The 30-year History of Sponsorship of Multicenter Randomized Trials by the National Eye Institute. Baltimore, Maryland, The Johns Hopkins Center for Clinical Trials and The Wilmer Ophthalmological Institute, April 2-3, 2001.

*Update on photodynamic therapy (with Visudyne)*. Cleveland Ophthalmological Society. Cleveland, Ohio, April 10, 2001.

1) *Macular Photocoagulation Studies*. (Symposium: What is New in Age-related Macular Degeneration?) 2) *Photodynamic therapy in subfoveal CNV*. (Symposium: Myopic CNV.) XIII Congress of the European Council of Ophthalmology. Istanbul, Turkey, June 10, 2001.

*Antiangiogenic agents for treatment of choroidal neovascularization in age-related macular degeneration*. Cleveland Ophthalmological Society. Cleveland, Ohio, June 15, 2001.

*Antiangiogenic agents for treatment of choroidal neovascularization in age-related macular degeneration.* CWRU Department of Ophthalmology Seventh Annual Faculty, Resident, & Alumni Research Day. Cleveland, Ohio, June 18, 2001.

*Advances in treatment of age-related macular degeneration.* Optometric Retinal Update. Youngstown, Ohio, August 29, 2001.

*New treatments for age-related macular degeneration.* Buffalo Ophthalmological Society. Buffalo, New York, November 1, 2001.

*Advances in treatment of age-related macular degeneration.* Optometric Retinal Update. Cleveland, Ohio, February 26, 2002.

Second Annual Applications of Verteporfin Therapy Seminar. Phoenix, Arizona, February 28- March 2, 2002.

Course Chair, *Practical decision making for the patient with age-related macular degeneration.* Symposium Chair, *Age-related macular degeneration: pathogenesis, risk factors and prevention.* Symposium Speaker, *Experimental treatment: results of PDT in the VIP trial* (Symposium: Current Nonsurgical Management of Exudative Age-related Macular Degeneration; Gisele Soubrane, Chair). Symposium Speaker, *Parafoveal telangiectasia* (Symposium: Unusual Retinal Disorders; Alexander Brucker, Chair). Symposium Speaker, *Optimal clinical utilisation of digital fluorescein angiography and photography* (Symposium: Diagnostic Methods in Macular Disease: New Insights in Angiography, Ocular Coherence, Tomography and Ultrasound; Gabriel Coscas, Chair). XXIX<sup>th</sup> International Congress of Ophthalmology. Sydney, Australia, April 22-25, 2002.

*Anti-VEGF therapy for exudative AMD.* Eleventh Annual Ocular Surgery News Symposium. New York, New York, September 21, 2002.

*Two-year results of an open-label extension of the TAP investigation evaluating verteporfin therapy for subfoveal CNV due to AMD.* Retina Congress 2002 (The 20th Annual Vitreous Society and The 35th Annual Retina Society Meeting). San Francisco, California, September 28-October 2, 2002.

Section Moderator, *Macula 2003: advances in diagnosis and treatment.* New York, New York, January 18, 2003.

*Update on diabetic retinopathy.* Grand Rounds, Hillcrest Hospital. Cleveland, Ohio, January 22, 2003.

*Advances in treatment of age-related macular degeneration.* Optometric Retinal Update. Cleveland, Ohio, February 20, 2003.

*An overview of the treatment of age-related macular degeneration from the macular photocoagulation studies to the present.* Conference, Age-related Macular Degeneration:

Current Approaches to Diagnosis and Treatment. Inova Institute of Research and Education. Fairfax, Virginia, May 10, 2003.

*Clinical trials in age-related macular degeneration.* Dayton Vitreo-Retinal Consultants, Dayton, Ohio, May 14, 2003.

1) *Predictive value of lesion size and outcome on vision benefits.* 2) *Multicourse therapy.* 3) *Beyond visual acuity: contrast sensitivity.* 4) *Alternative treatment strategies: anecortave acetate overview.* AMD Management: PDT Applications and the Role of Emerging Therapies. Chicago, Illinois, May 31, 2003.

Section Chairman, *Age-related macular degeneration.* Speaker, *Four-year results of PDT in AMD.* Speaker, *Anecortave acetate.* Retina in Progress. Milan, Italy, June 19-21, 2003.

Symposium Moderator, *Dynamic ICG angiography (DICGA): diagnostics.* Speaker, *Perspectives on MPS grading of choroidal neovascular lesions.* Second Annual Heidelberg Retina Angiograph (HRA) Symposium. San Diego, California, June 27-29, 2003.

*Newer findings in photodynamic therapy clinical trials.* Optometric Retinal Update. Cleveland, Ohio, August 12, 2003.

*Macular degenerative disease.* Community Leadership Council Meeting. Hillcrest Hospital, Cleveland, Ohio, October 14, 2003.

*Pharmacological treatment for diabetic retinopathy.* Schupf Invitational Symposium, Lighthouse International. New York, New York, October 17, 2003.

*Current approaches in photodynamic therapy.* Pilkerton Lecturer, the Retina Group of Washington. Washington DC, October 18, 2003.

*Advances in treatment of age-related macular degeneration.* East West Eye Conference. Cleveland, Ohio, October 25, 2003.

*Anti-VEGF aptamer (Macugen) for diabetic macular edema.* Bascom Palmer Eye Institute's Angiogenesis 2004. Coral Gables, Florida, February 6, 2004.

*Phase III results of Macugen for CNV in AMD.* Cleveland Ophthalmological Society Meeting. Cleveland, Ohio, February 10, 2004.

Chair, Retina Section. Speaker, *Pharmacotherapy of diabetic retinopathy.* Ohio Ophthalmological Society Annual Meeting, March 20, 2004.

*VEGF Inhibition Study in Ocular Neovascularization (VISION): efficacy outcomes from the Macugen clinical trials.* Fourth Euretina Congress, Milan, Italy, May 13-15, 2004.

*New treatments for age-related macular degeneration.* Tenth Annual Faculty, Resident, & Alumni Research Day, Case Department of Ophthalmology, Case School of Medicine. Cleveland, Ohio, June 18, 2004.

*The Heidelberg retina angiograph 2.* Optometric Retinal Update. Cleveland, Ohio, July 29, 2004.

*Clinical outcomes of the Patient InSight Registry: 2004.* Twenty-fourth Meeting of the Club Jules Gonin. Athens, Greece, September 8-12, 2004.

*Unusual cases.* Optometric Retinal Update. Youngstown, Ohio, October 6, 2004.

*Anti-vascular endothelial growth factor (VEGF) aptamer (Macugen) for diabetic macular edema.* Angiogenesis and its Inhibition, University of Pittsburgh, Pittsburgh, Pennsylvania, October 8-9, 2004.

*Controversies in the treatment of age-related macular degeneration.* Guest of Honor, New England Ophthalmological Society Meeting. Boston, Massachusetts, October 15, 2004.

*Intravitreal triamcinolone injection / vascular endothelial growth factor.* Advances in the Management of Neovascular Age-related Macular Degeneration, Continuing Medical Education Regional Meeting. Chicago, Illinois, November 17, 2004.

Participant, Optical Coherence Tomography Research Meeting, sponsored by Carl Zeiss Meditec. Miami, Florida, December 11-12, 2004.

Participant, Retina Expert Meeting. New York, New York, December 17-19, 2004.

*VEGF and its role in AMD: implications for therapeutics.* Continuing Medical Education Dinner Meeting. Rosemont, Illinois, January 19, 2005.

*Advances in management of neovascular age-related macular degeneration.* Cleveland, Ohio, January 20, 2005.

Co-author, with Barrett Katz, for the Macugen Diabetic Retinopathy Study Group. *A Phase 2 clinical trial of the safety and efficacy of pegaptanib sodium (Macugen™) for treatment of diabetic macular edema.* Poster displayed at the seventh annual meeting of the Association for Ocular Pharmacology and Therapeutics (AOPT). Catania, Sicily, Italy, February 3-5, 2005.

*New treatments for diabetic macular edema.* Optometric Retinal Update Seminar. Cleveland, Ohio, February 15, 2005.

*Posterior juxtasclear depot: critical steps in managing reflux.* Posterior Juxtasclear Depot: Emerging AMD Therapies and Administration Techniques. Cleveland, Ohio, April 29, 2005.

Speaker, 1) *Anti VEGF therapy for macular edema*, 2) *Anti VEGF therapy for AMD*. Co-chair, with Ursula Schmidt-Erfurth, *Session on Age-related Macular Degeneration*. EURETINA 2005, 5<sup>th</sup> Euretina Congress. Milan, Italy, May 19-21, 2005.

*Diabetic retinopathy and other retinal disorders.* Department of Family Practice CME Conference. Hillcrest Hospital, Cleveland, Ohio, July 27, 2005.

*Recent Advances in Treatment of age-related macular degeneration.* Optometric Retinal Update Seminar. Cleveland, Ohio, September 14, 2005.

*Complications of intravitreal injections.* Cleveland Ophthalmological Society Meeting. Cleveland, Ohio, October 11, 2005.

Moderator, *Medical retinal diseases.* Speaker, *Avastin; Discussion on neovascular AMD: what-when-how to treat.* Macula 2006 and Atlantic Coast Retina Club. New York, New York, January 13-14, 2006.

*Macugen for neovascular age-related macular degeneration.* Angiogenesis 2006, Bascom Palmer Eye Institute. Miami, Florida, February 4, 2006.

*Lucentis and Avastin for choroidal neovascularization in age-related macular degeneration.* Optometric Retinal Update Seminar. Cleveland, Ohio, February 9, 2006.

*Clinical trials in private practice.* Mentoring in Ophthalmology Vitreoretinal Fellows Program, Annenberg Center for Health Sciences. Rancho Mirage, California. March 3, 2006.

*Pharmacotherapy for age-related macular degeneration,* Ophthalmology Grand Rounds. *Laser therapy for posterior segment disease,* Lecture. Case Western Reserve University/University Hospitals of Cleveland. Cleveland, Ohio, March 29, 2006.

*Newest research and treatments for macular degeneration.* Seminar on Age-related Macular Degeneration, in conjunction with Macula Vision Research Foundation SupportSight. Solon, Ohio, June 3, 2006.

1) *Update on Lucentis.* 2) *Small interfering RNA treatment for AMD with CNV.*  
3) *Summarizing the treatments for AMD.* Mediterranean Retina II Meeting. Antalya, Turkey, June 23-25, 2006.

Speaker, *VEGF small interfering (si) RNA for treatment of wet age-related macular degeneration (AMD).* Presiding Officer, *Symposium II: Anti-Angiogenesis (Part 2).* Annual meeting of the American Society of Retina Specialists. Cannes, France, September 8-13, 2006.

*Update on Lucentis and small interfering RNA (siRNA) for the treatment of neovascular age-related macular degeneration.* Optometric Retinal Update Seminar. Cleveland, Ohio, September 25, 2006.

1) *Update on Lucentis and small interfering RNA (siRNA) for the treatment of neovascular age-related macular degeneration.* 2) *Introduction to new retinal technology* (with ZN Zakov, MD). Optometric Retinal Update Seminar. Youngstown, Ohio, September 28, 2006.

*Pharmacotherapy of diabetic retinopathy.* Optometric Retinal Update Seminar. Beachwood, Ohio, February 15, 2007.

*Pegaptanib (Macugen) therapy for diabetic retinopathy and central retinal vein occlusion.* Angiogenesis 2007, Bascom Palmer Eye Institute. Miami, Florida, February 23-24, 2007.

*Macular degeneration – newest information on research and treatments.* Macula Vision Research Foundation SupportSight Seminar. Middleburg Hts, Ohio, March 24, 2007.

*Current therapy for diabetic retinopathy.* Association of Indian Physicians of Northeast Ohio. Hillcrest Hospital, Mayfield Hts, Ohio, April 28, 2007.

*Review of Phase II Studies with bevasiranib: the CARE and RACE Studies.* Clinical Study Team Investigator Meeting, Opko Health (Acuity Pharmaceuticals). Denver, Colorado, June 9-10, 2007.

*Safety and efficacy of the Anti-VEGF small interfering RNA bevasiranib administered intravitreally in subjects with exudative age-related macular degeneration (AMD) or diabetic macular edema (DME).* Case Department of Ophthalmology 13th Annual Faculty, Resident, & Alumni Research Day. Cleveland, Ohio, June 15, 2007.

*Update on Lucentis therapy for age-related macular degeneration.* Optometric Retinal Update Seminar. Westlake, Ohio, July 17, 2007.

*Bevasiranib for treatment of age-related macular degeneration (AMD) and diabetic macular edema (DME).* Retina Society Annual Meeting. Boston, Massachusetts, September 28, 2007.

*Intravitreal bevasiranib in exudative age-related macular degeneration or diabetic macular edema.* 25<sup>th</sup> Annual Meeting of the American Society of Retina Specialists. Indian Wells, California, December 3, 2007.

*Management of age-related macular degeneration – Parts 1 and 2.* Current Concepts in Ophthalmology 2008, sponsored by SUNY Downstate Medical Center, Department of Ophthalmology. Atlantic City, New Jersey, January 12, 2008.

1) *Pharmacotherapy of diabetic retinopathy.* 2) *New treatments for macular degeneration.* Ohio Ophthalmological Society Annual Meeting. Columbus, Ohio, January 26, 2008.

*New drugs under investigation for wet and dry age-related macular degeneration.* Optometric Retinal Update Seminar. Beachwood, Ohio, February 21, 2008.

*Bevasiranib update.* Bascom Palmer Eye Institute Angiogenesis, Exudation, and Degeneration 2008. Key Biscayne, Florida, February 22-23, 2008.

*Pharmacological management of diabetic eye disease.* Cleveland Ophthalmological Society Meeting. Cleveland, Ohio, April 8, 2008.

1) *Bevasiranib.* 2) *Fenretinide for geographic atrophy.* 3) *Pegaptanib sodium injection in a ranibizumab world.* Retinal Physician Symposium. Naples, Florida, May 28-31, 2008.

*Bevasiranib*. Combination Therapy for AMD Symposium. Philadelphia, Pennsylvania, June 6, 2008.

1) *Current advances in the treatment of age-related macular degeneration*. Melvin L. Rubin Lecture. 2) *Case presentation: endogenous Nocardia chorioretinitis in an immunocompetent patient*. Florida Society of Ophthalmology. Palm Beach, Florida, June 21-22, 2008.

*New treatments for age-related macular degeneration*. Yonsei Retina Symposium. Seoul, South Korea, June 25, 2008.

1) *Next generation targets for AMD Therapy: beyond VEGF inhibitors*. 2) Macula Society Symposium Speaker, *Bevasiranib for AMD*. 3) Macula Society Symposium Co-chair, with Wai-Man Chan, MD, and Alexander J. Brucker, MD. World Ophthalmology Congress. Hong Kong, June 28 – July 2, 2008.

1) *Classification of AMD*. 2) *Pigment epithelial detachment, polypoidal choroidal vasculopathy, and retinal angiomatous proliferation*. 3) *Future therapies*. Advances in Age-related Macular Degeneration. University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania, October 3-4, 2008.

Moderator, *Dry AMD Symposium*. Macula 2009. New York, New York, January 16-17, 2009.

1) *Treatment of geographic atrophy: medical treatments under investigation*. 2) *Diabetic macular edema: results of randomized clinical trials*. Macula of Paris. Paris, France, January 23, 2009.

Co-moderator, *Retina*. Speaker, *Advances in the management of dry AMD*. Cleveland Ophthalmological Society. Cleveland, Ohio, February 10, 2009.

1) *Incorporating clinical trials in a private retinal practice*. 2) *Future pharmacotherapy for AMD*. 3) *Current treatment of diabetic retinopathy*. Pittsburgh Ophthalmology Society 45<sup>th</sup> Annual Meeting. Pittsburgh, Pennsylvania, March 6, 2009.

*Current treatment of diabetic retinopathy*. Guest speaker, Dietrich Diabetes Research Institute and Endocrinology Club Joint Meeting, Diabetes Association of Greater Cleveland. Cleveland, Ohio, March 12, 2009.

*Pharmacotherapy for AMD*. Retinal Update for Ophthalmologists. Beachwood, Ohio, May 13, 2009.

*Visual cycle inhibitors*. Angiogenesis 2010: Clinical Trials. Bascom Palmer Eye Institute. Miami, Florida, February 20, 2010.

*Recent advances in the treatment of exudative macular degeneration*. Optometric Retinal Update Seminar. Beachwood, Ohio, March 25, 2010.

*Update on wet age-related macular degeneration management.* Case Western Reserve University 28th Annual Update for the Comprehensive Ophthalmologist Conference. Cleveland, Ohio, April 23, 2010.

*Ozurdex for macular edema (and comments about the Implantable Miniature Telescope).* Optometric Retinal Update Seminar. Westlake, Ohio, August 19, 2010.

*Clinical trials of treatment of dry AMD.* Cleveland Ophthalmological Society. Cleveland, Ohio, October 12, 2010.

*Visual cycle inhibitors for dry AMD.* Angiogenesis, Exudation and Degeneration 2011. Bascom Palmer Eye Institute. Miami, Florida, February 12, 2011.

*Treatment of geographic atrophy.* Optometric Retinal Update Seminar. Beachwood, Ohio, March 3, 2011.

*Progress in the management of age-related macular degeneration.* Keynote speaker, Cleveland Ophthalmic Personnel Society Annual Brunch, Cleveland, Ohio, April 3, 2011.

*Macular edema from vein occlusion – response to Ozurdex after anti-VEGF failure.* North Coast Retina Symposium. Cole Eye Institute, Cleveland Clinic Foundation, May 13, 2011.

## PUBLICATIONS

### **Books**

1. Singerman LJ, Jampol LM (eds.). *Retinal and Choroidal Manifestations of Systemic Disease*. Baltimore: Williams and Wilkins, 1991.
2. Singerman LJ, Coscas G (eds.). *Current Techniques in Ophthalmic Laser Surgery*. Philadelphia: Current Medicine, 1999.
3. Bressler NM, Lim J, Rosenfeld P, Sapinski S, Schachat A, Singerman LJ, Williams G. *Educational Initiatives in AMD and Related Retinal Diseases*. Second Edition. London: Chameleon Medical Communications, 2002.

### **Book Chapters**

1. Rodman H, Singerman LJ, Aiello L, Merkatz I. Diabetic retinopathy and its relationship to pregnancy In Merkatz I, Adam PJ (eds.). *Diabetes and Pregnancy: A Perinatal Perspective*. New York: Grune and Stratton, 1979, pp 73-91.
2. Singerman LJ. Diabetic retinopathy in juvenile onset diabetes: 1. Laser therapy in high-risk proliferatives. 2. The effects of pregnancy. In Fine SL, Owens SL (eds.). *Management of Retinal Vascular and Macular Disorders*. Baltimore: Williams & Wilkins, 1983, pp 43-46.

3. Singerman LJ, Rice TA, Passloff R. Krypton laser scatter treatment for proliferative diabetic retinopathy. In Ryan SJ, Dawson AK, Little HL (eds.). *Retinal Diseases*. Orlando: Grune & Stratton, 1985, pp 43-46.
4. Singerman LJ. Stries angioides: traitement par le laser a argon et le laser a krypton. In Coscas G, Soubrane G (eds.). *Neovaisseaux Sous-Retiniens Maculaires et Laser*. Paris: Doin, 1987, pp 221-223.
5. Singerman LJ. Laser photocoagulation for choroidal neovascularization associated with pigment epithelial detachment in patients over the age of 55. In Brancato R, Coscas G, Lumbroso B (eds.). *Retinal Diseases 2*. Amsterdam-Berkeley/Milano: Kugler Publications/Ghedini Editore, 1987, pp 39-46.
6. Singerman LJ. Laser photocoagulation for choroidal neovascularization associated with pigment epithelial detachment. In Gitter KA, Schatz H, Yannuzzi L, McDonald HR (eds.). *Laser Photocoagulation of Retinal Disease*. San Francisco: Pacific Medical Press, 1988, pp 201-215.
7. Singerman LJ, Novak MA. Subretinal neovascularization. In Yannuzzi LA (ed.). *Laser Photocoagulation of the Macula*. Philadelphia: JB Lippincott, 1989, pp 27-46.
8. Singerman LJ. Laser photocoagulation for choroidal neovascularization associated with hemorrhagic pigment epithelial detachment. In Blodi F, Brancato R, Christini G, et al (eds.). *Acta XXV Concilium Ophthalmologicum*. Milano: Ghedini Editore, 1988, pp 2231-2236.
9. Flood TP, Orth DH, Singerman LJ. Complications of krypton red laser photocoagulation for choroidal neovascularization. In Blodi F, Brancato R, Christini G, et al (eds.). *Acta XXV Concilium Ophthalmologicum*. Milano: Ghedini Editore, 1988, pp 2063-2074.
10. Sunness JS, Gass JDM, Singerman LJ, Ober RR, Soubrane G, Aiello LM. Retinal and choroidal changes in pregnancy. In Singerman LJ, Jampol LM (eds.). *Retinal and Choroidal Manifestations of Systemic Disease*. Baltimore: Williams and Wilkins, 1991, pp 262-286.
11. Saggau DD, Singerman LJ. Cystoid macular edema: causes, diagnosis and treatment. In Weinstock FJ (ed.). *Management and Care of the Cataract Patient*. Boston: Blackwell Scientific Publications, Inc, 1992, pp 308-322.
12. Singerman LJ, Fine SL. Wavelength selection: Its importance for laser treatment of retinal and choroidal disease. In Schachar AP (ed.). *Current Practice in Ophthalmology*. St. Louis: Mosby Year Book, 1992, pp 355-368.
13. Singerman LJ, Lamkin JC, Addiego R, Zegarra H. Laser treatment of choroidal neovascularization. In Karlin DB (ed.). *Lasers in Ophthalmic Surgery*. Cambridge, Mass: Blackwell Scientific Publications, Inc, 1995, pp 112-139.

14. Zegarra H, Zakov ZN, Singerman LJ, Lamkin JC. Laser treatment of retinal vein occlusions. In Karlin DB (ed.). *Lasers in Ophthalmic Surgery*. Cambridge, Mass: Blackwell Scientific Publications, Inc, 1995, pp 140-151.
15. Singerman LJ, Addiego R, Lamkin JC, Zegarra H. Laser treatment of less common macular diseases. In Karlin DB (ed.). *Lasers in Ophthalmic Surgery*. Cambridge, Mass: Blackwell Scientific Publications, Inc, 1995, pp 152-178.
16. Sugin SL, Singerman LJ, Yannuzzi LA. Angioid Streaks. In Roy FH (ed.). *Master Techniques in Ophthalmic Surgery*. Philadelphia: Lea & Febiger, 1995, pp 53-59.
17. Niffenegger JH, Singerman LJ. Other causes of choroidal neovascularization. In Guyer DR, Yannuzzi LA, Chang S, Shields J, Green WR (eds.). *Retina, Vitreous, Macula: A Comprehensive Text*. Philadelphia: Saunders, 1998.
18. Singerman LJ, Niffenegger JH, Pendergast SD. Less common causes of choroidal neovascularization. In Saer JB (ed.). *Vitreo-Retinal and Uveitis Update. Proceedings of the New Orleans Academy of Ophthalmology Symposium*. The Hague: Kugler Publications, 1998, pp 7-41.
19. Miller DG, Singerman LJ. Diabetic retinopathy: medical considerations. In Saer JB (ed.). *Vitreo-Retinal and Uveitis Update. Proceedings of the New Orleans Academy of Ophthalmology Symposium*. The Hague: Kugler Publications, 1998, pp 239-244.
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22. Zegarra H, Singerman LJ, Pendergast SD. Central retinal vein occlusion. In Saer JB (ed.). *Vitreo-Retinal and Uveitis Update. Proceedings of the New Orleans Academy of Ophthalmology Symposium*. The Hague: Kugler Publications, 1998.
23. Niffenegger JH, Pendergast SD, Singerman LJ. Laser management of less common macular diseases. In Singerman LJ, Coscas G (eds.). *Current Techniques in Ophthalmic Laser Surgery*. Philadelphia: Current Medicine, 1999, pp 111-128.
24. Niffenegger JH, Pendergast SD, Singerman LJ. Photocoagulation of other causes of choroidal neovascularization. In Singerman LJ, Coscas G (eds.). *Current Techniques in Ophthalmic Laser Surgery*. Philadelphia: Current Medicine, 1999, pp 91-110.

25. Pendergast SD, Singerman LJ. Lasers in the treatment of proliferative retinopathies. In Singerman LJ, Coscas G (eds.). *Current Techniques in Ophthalmic Laser Surgery*. Philadelphia: Current Medicine, 1999, pp 35-54.
26. Zegarra H, Finkelstein D, Singerman LJ, Niffenegger JH. Laser management of branch and central retinal vein occlusions. In Singerman LJ, Coscas G (eds.). *Current Techniques in Ophthalmic Laser Surgery*. Philadelphia: Current Medicine, 1999, pp 67-76.
27. Pendergast SD, Singerman LJ. Choroidal ruptures. In Fraunfelder FT, Roy FH (eds.). *Current Ocular Therapy*. Philadelphia: WB Saunders Company, 2000, pp 313-314.
28. Miller DG, Singerman LJ. Laser treatment of age-related macular degeneration. In Boyd BF, Boyd S (eds.). *Retinal and Vitreoretinal Surgery: Mastering the Latest Techniques*. Panama: Highlights of Ophthalmology Press, 2002, pp 249-261.
29. Miller DG, Singerman LJ. Key questions for a focused history. In Steidl SM, Hartnett ME (eds.). *Clinical Pathways in Vitreoretinal Disease*. New York: Thieme, 2003, pp 3-12.
30. Singerman LJ. Pharmacology for age-related macular degeneration. *Retina Handbook*. Bloomfield, NJ: Jobson, 2004, pp.12-15.
31. Miller DG, Sharma MC, Singerman LJ. Laser treatment of age-related macular degeneration. In Boyd BF, Boyd S (eds.). *Retinal and Vitreoretinal Surgery: Mastering the Latest Techniques*. Panama: Highlights of Ophthalmology Press, 2005, pp. 250-261.
32. Singerman LJ, Sharma MC, Hornik JH. Pegaptanib sodium therapy. In Peyman GA, Meffert SA, Conway MD. *Vitreoretinal Surgical Techniques*. London: Informa UK Ltd, 2007, pp.634-641.

### **Journal Articles**

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2. Singerman LJ, Berkow JW, Patz A. Dominant slowly progressive macular dystrophy. *Am J Ophthalmol* 1977;83:680-693.
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4. Yassur Y, Pickle L, Fine SL, Singerman LJ, Orth DH, Patz A. Optic disc neovascularization in diabetic retinopathy: natural history and results of photocoagulation treatment. *Br J Ophthalmol* 1980;64 (2):77-86.

5. Lewellen D, Singerman LJ. Thrombotic thrombocytopenic purpura with disc neovascularization, vitreous hemorrhage, retinal detachment, and optic atrophy. *Am J Ophthalmol* 1980;89:840-844.
6. Singerman LJ, Schlaegel T, Orth DH, Joondeph H. Randomized controlled clinical trial of partial laser treatment of choroidal neovascularization in the histoplasmosis ocular syndrome. *Documenta Ophthalmologica Proceedings* 1980;25:141-148.
7. Singerman LJ, Guest Editor, *Albrecht Von Graefes Arch Klin Exp Ophthalmol* 1980;1-70.
8. Singerman LJ, Weaver DT. High-risk proliferative diabetic retinopathy in juvenile onset diabetics. *Retina* 1981;1:18-26.
9. Singerman LJ, Hatem G. Laser treatment of subretinal neovascular membranes in angioid streaks. *Retina* 1981;1:75-83.
10. Singerman LJ. Vitrectomy for complications of proliferative diabetic retinopathy. *Clin Dec Ophthalmol* 1982;6:3-5.
11. Singerman LJ. Photocoagulation: current concepts and new approaches. *Audio Journal Review of Ophthalmology*, Vol. 8, No. 1, 1982.
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### ***Book reviews***

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2. Bloom SM, Brucker AJ. *Laser Surgery of the Posterior Segment*, 2nd edition (1997), Lippincott-Raven. *Am J Ophthalmol* 1997;124:576.
3. Natarajan S, Sharma S, Mehta HB. *Diagnostics in Macular Disorders. An Overview of FFA, ICGA and OCT*. Foreword by Lawrence J. Singerman. New Delhi: Jaypee Brothers Medical Publishers, 2005.

### ***Selected scientific exhibits, posters, and other contributions***

CHAIRMAN OF THE MACULA SOCIETY EXHIBIT: Current evaluation and management of macular diseases

- American Academy of Ophthalmology Annual Meeting, Atlanta, Georgia, November 1981
- Wills Eye Institute, 1981
- Association for Research in Vision and Ophthalmology (the first clinical exhibit ever accepted), 1981

CHAIRMAN OF THE MACULA SOCIETY EXHIBIT: Evaluation and management of proliferative retinopathies

- American Academy of Ophthalmology Annual Meeting and the XXIV International Congress of Ophthalmology Meeting, San Francisco, California, November 1982
- Macula Society Meeting, Miami, Florida, March 1983
- First Annual Retinal Meeting, University of Indiana, Indianapolis, Indiana, March 1983
- Forty-second Clinical Meeting of the Wilmer Ophthalmological Institute, The Johns Hopkins Hospital and University, Baltimore, Maryland, April 1983
- Author of Scientific Poster: Krypton laser for proliferative diabetic retinopathy
- American Academy of Ophthalmology Annual Meeting, November 1982

- Scheie Institute, University of Pennsylvania, February 1983

CO-AUTHOR OF THE MACULA SOCIETY EXHIBIT: Acute retinal necrosis syndrome

- American Academy of Ophthalmology Annual Meeting, Chicago, Illinois, October 29-November 3, 1983

CO-AUTHOR OF EXHIBIT (*WITH E AI, WR GREEN, P COONAN, R STEINMETZ*): Age-related maculopathy: clinical course, histopathology and treatment

- American Academy of Ophthalmology Annual Meeting, San Francisco, September 29-October 4, 1985

MACULAR PHOTOCOAGULATION STUDY GROUP (*L SINGERMAN A PRINCIPAL INVESTIGATOR*) POSTER: Recurrent choroidal neovascularization after argon laser photocoagulation for neovascular maculopathies

- American Academy of Ophthalmology Annual Meeting, New Orleans, Louisiana, November 1986

MACULAR PHOTOCOAGULATION STUDY GROUP (*L SINGERMAN A PRINCIPAL INVESTIGATOR*) POSTER: The Macular Photocoagulation Studies: randomized trials for neovascular membranes within the foveal avascular zone

- American Academy of Ophthalmology Annual Meeting, New Orleans, Louisiana, November 1986

CO-AUTHOR OF THE MACULA SOCIETY EXHIBIT (*WITH RP MURPHY, JH YEO, MF MARMOR, JL SHAKIN, MS BLUMENKRANZ*): The appearance and progression of retinal pigment epithelial rips

- American Academy of Ophthalmology Annual Meeting, Las Vegas, Nevada, October 1988

MACULAR PHOTOCOAGULATION STUDY GROUP (*L SINGERMAN A PRINCIPAL INVESTIGATOR*) POSTER: Macular Photocoagulation Study Reading Center techniques to evaluate choroidal neovascularization and laser treatment

- American Academy of Ophthalmology Annual Meeting, Las Vegas, Nevada, October 1988

MACULAR PHOTOCOAGULATION STUDY GROUP (*L SINGERMAN A PRINCIPAL INVESTIGATOR*) POSTER: Laser Treatment for subfoveal neovascular membranes in the Macular Photocoagulation Study

- American Academy of Ophthalmology Annual Meeting, Las Vegas, Nevada, October 1988

CO-AUTHOR OF THE MACULA SOCIETY EXHIBIT (*WITH JC FOLK, HJ KAPLAN, ET AL*): Choroidal and retinal inflammatory syndromes

- American Academy of Ophthalmology Annual Meeting, New Orleans, Louisiana, October 29-November 2, 1989

MACULAR PHOTOCOAGULATION STUDY GROUP (*L SINGERMAN A PRINCIPAL INVESTIGATOR*) POSTER: Trends in patient accrual rates by clinical center over a 10-year period

- Eleventh Annual Meeting of Society for Clinical Trials, Toronto, Canada, May 1990

MACULAR PHOTOCOAGULATION STUDY GROUP (*L SINGERMAN A PRINCIPAL INVESTIGATOR*) POSTER:  
Factors influencing reading ability in patients with choroidal neovascularization

- Association for Research in Vision and Ophthalmology Annual Meeting, Sarasota, Florida, April 28-May 3, 1991

CO-AUTHOR OF SCIENTIFIC POSTER: Prospective evaluation of the effect of pseudophakic cystoid macular edema on contrast sensitivity

- American Academy of Ophthalmology Annual Meeting, November 1992

MACULAR PHOTOCOAGULATION STUDY GROUP (*L SINGERMAN A PRINCIPAL INVESTIGATOR*) POSTER:  
Effect of the variability in photographic quality on a grading scheme of drusen characteristics and retinal pigment epithelium abnormalities

- Association for Research in Vision and Ophthalmology Annual Meeting, Sarasota, Florida, May 1992

MACULAR PHOTOCOAGULATION STUDY GROUP (*L SINGERMAN A PRINCIPAL INVESTIGATOR*) POSTER:  
Causes of decreased visual acuity in patients with peripapillary or nasal choroidal neovascularization (CNV) and ocular histoplasmosis (OH) in the Macular Photocoagulation Study (MPS)

- Association for Research in Vision and Ophthalmology Annual Meeting, Sarasota, Florida, May 1993

Case Western Reserve University, Continuing Medical Education Activity Director for The Macula Society annual meetings, 1978-1996.

Case Western Reserve University, Continuing Medical Education Activity Director for Cleveland Ophthalmological Society annual Tuesday meetings, 1987-1996.