Supplementary Online Content


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eAppendix 1. Supplementary Characteristics of the AREDS2 Population

eAppendix 2. The Age-Related Eye Disease Study 2 (AREDS2) Research Group

This supplementary material has been provided by the authors to give readers additional information about their work.
5,178 Assessed for Eligibility

- 975 Excluded
  - 494 Did not meet inclusion criteria
  - 259 Declined participation
  - 222 Other

4,203 Randomized

- 1,012 Placebo
  - 1,007 included in the Analysis
    - 31 lost to follow-up

- 1,044 Lutein and Zeaxanthin
  - 1,038 included in the Analysis
    - 30 lost to follow-up

- 1,068 DHA and EPA<sup>a</sup>
  - 1,062 included in the Analysis
    - 38 lost to follow-up

- 1,079 Lutein/Zeaxanthin + DHA and EPA<sup>a</sup>
  - 1,069 included in the Analysis
    - 42 lost to follow-up

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Secondary Randomization

- 1,036 AREDS Supplements<sup>c</sup>
  - 19 No AREDS Supplements<sup>c</sup>
    - Non randomized
  - 3,036 AREDS Supplements<sup>c</sup>
    - Randomized<sup>d</sup>
  - 1,148 AREDS Supplements<sup>c</sup>
    - Non randomized

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- 659 AREDS
  - 656 included in the Analysis
    - 21 lost to follow-up

- 863 No Beta carotene
  - 858 included in the Analysis
    - 30 lost to follow up

- 689 Low Zinc
  - 685 included in the Analysis
    - 26 lost to follow up

- 825 No Beta-carotene and Low Zinc
  - 818 included in the Analysis
    - 28 lost to follow up

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<sup>a</sup>DHA+EPA: docosahexanoic acid and eicosapentaneoic acid
<sup>b</sup>AMD: age-related macular degeneration
<sup>c</sup>AREDS (Age-Related Eye Disease Study ) Supplements: vitamins C (500 mg), E (400 international units), beta carotene (15 mg), zinc (oxide 80 mg) and copper (cupric oxide 2 mg).
Smokers were not randomized to beta-carotene and are excluded from analyses of the beta-carotene main effect.
<sup>d</sup>Randomization is factorial: original AREDS supplements(AS), AS minus beta-carotene, AS with low zinc, or AS with combination of no beta-carotene and low zinc.
eFigure 1. Flow Diagram of Participants in the Age-Related Eye Disease Study 2 (AREDS2)

Caption: Participants in the Age-Related Eye Disease Study 2 (AREDS2) were randomly assigned to lutein/zeaxanthin and/or omega-3 long-chain polyunsaturated fatty acids for the treatment for age-related macular degeneration. Participants were offered a secondary randomization for variations of the AREDS supplement.
**eFigure 2.** Comparison of Participants Randomized to Lutein/Zeaxanthin Plus Beta Carotene vs Participants Assigned to Beta Carotene Only (Without Lutein/Zeaxanthin)

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<tr>
<th>Condition</th>
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L/Z: Lutein/zeaxanthin

ATS: Age-Related Eye Disease Study (AREDS) type supplement

BC: beta-carotene
**eTable 1.** Baseline Characteristics of the Age-Related Eye Disease Study 2 (AREDS2) Participants by the Main Effects Analyses of Those Randomized to Lutein/Zeaxanthin and Those Not Randomly Assigned to Lutein/Zeaxanthin

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IQR: interquartile range
### eTable 2: Secondary Randomization of Participants Randomly Assigned to Beta Carotene vs No Beta Carotene

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**Table 3.** Serum Lutein/Zeaxanthin in the Age-Related Eye Disease Study 2 (AREDS2) by Randomization to Lutein/Zeaxanthin and Beta Carotene at Baseline and 1, 3, and 5 Years of Follow-up Stratified by High-Density Lipoprotein Cholesterol Levels

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The comparison of serum lutein levels with and without beta-carotene (shaded boxes) using a mixed effects (longitudinal) model adjusting for serum high density lipoprotein (HDL) cholesterol levels showed a statistically significant decrease in serum lutein levels when beta-carotene was administered simultaneously, P=.05.
eAppendix 1. Supplementary Characteristics of the AREDS2 Population

The majority of AREDS2 participants (66%) had bilateral large drusen. Most of the other participants had late AMD and large drusen in the fellow eye (34%), but 11 (0.3%) did not meet eligibility requirements because late AMD was judged to be present in both eyes when evaluated at the Reading Center. These participants were excluded from the AMD progression analyses.

During the course of the study 290/4203 (6.9%) and 182/3036 (6.0%) of the primary and secondary study cohorts, respectively, permanently stopped their study medications. The percentages were comparable across treatment groups for both randomizations. 132/4203 (3.1)% of participants began taking lutein/zeaxanthin and 469/4203 (11.1)% took omega-3 LCPUFAs on their own, and 85/469 (18.1)% of these participants stopped their study medications permanently. 3420/4069 (84.1)% of the participants took the study medications at least 75% of the time, as assessed by pill count. There were no differences in adherence among the treatment groups.

Follow-up:

Of the 4,203 randomized participants, 141 (3%) were lost to follow-up and 368 (9%) died. Distributions of losses to follow-up and the deaths were similar across the 4 treatment groups.
Appendix 2. The Age-Related Eye Disease Study 2 (AREDS2) Research Group

**(NEI) National Eye Institute**
Emily Y. Chew, MD, Study Chair
Frederick L. Ferris III, MD, NEI Clinical Director
John Paul SanGiovanni, ScD, Project Officer
Elvira Agrón, MA, Statistician

**Coordinating Center, The EMMES Corporation**
Traci Clemons, PhD, Principal Investigator
Anne Lindblad, PhD, Co-Investigator
Robert Lindblad, MD, Chief Medical Officer
Nilay Shah, MD, Medical Monitor
Robert Spurdo, MD, Consultant
Wendy McBee, MA, AREDS2 Project Director
Gary Gensler, MS, Statistician
Molly Harrington, MS, Statistician
Alice Henning, MS, Genetics Project Director
Katrina Jones Data Manager
Kumar Thotapally Programmer
Diana Tull, MA, CPS, Administrative Coordinator
Valerie Waton Systems Coordinator
Kayla Williams Data Manager
Christina Gentry, Cognitive Function Specialist
Francine Kaufman Cog. Function/Data Mgr
Chris Morrison, Cognitive Function Specialist
Elizabeth Saverino Protocol Monitor
Sherrie Schenning Protocol Monitor

**Cardiovascular Outcomes Adjudicators**
Denise Bonds, MD, MPH, (NHLBI)
Bradford Worrell, MD, MSc, (UVA)
Judith Hsia, MD
Jennifer Robinson, MD, MPH
Chuck Eaton, MD
Alain Bertoni, MD

**Fundus Photograph Reading Center**
Barbara Blodi, MD, Co-PI
Ronald P. Danis, MD, Principal Investigator
Matthew Davis, MD, Co-PI
Amita Domalpally Co-Director
Kathy Glander Research Project Mgr
Gregory Guilfoil Research Project Mgr
Larry D. Hubbard, MA, Assoc. Dir. Grading
Kristine Johnson Inventory Assistant
Ronald Klein, MD, Co-PI
Barbara Nardi Asst. to Ron Danis
Michael Neider Assoc. Dir. Photography
Nancy Robinson Assoc. Dir Operations
Eileen Rosensteel Inventory Assistant
Hugh Wabers Photographer
Grace Zhang AREDS2 Data Manager

**Antonio Capone, Jr., MD, (Ophthalmologist)**
Bawa Dass, MD, (Ophthalmologist)
Kimberly Drenser, MD, PhD, (Ophthalmologist)
Bruce R. Garretson, MD, (Ophthalmologist)
Tarek S. Hassan, MD, (Ophthalmologist)
Michael Trese, MD, (Ophthalmologist)
George A. Williams, MD, (Ophthalmologist)
Jeremy Wolfe, MD, (Ophthalmologist)
Tina Bell (Clinical Coordinator)
Mary Zajicek (Clinical Coordinator)
Dennis Bezaire (Photographer)
Fran McVier (Photographer)
Anthony Medina, CRA, (Photographer)
Jackie Pagett (Photographer)
Stephanie Hatch Smith (Photographer)
Lynn Swartz (Photographer)
Tom Treuter (Photographer)

**(002) Charlotte Eye Ear Nose and Throat Associates**
Andrew Antoszyk, MD, (Site PI)
Justin Brown, MD, (Ophthalmologist)
David J. Browning, MD, PhD, (Ophthalmologist)
Walter Holland, MD, (Ophthalmologist)
Angella Karow (Clinic Coordinator)
Kelly Stafford (Clinic Coordinator)
Angela Price, MPH, CCRC, Dir. Of Research
Sarah Ennis (Ophthalmic Technician)
Sherry Fredenberg (Ophthalmic Technician)
Jenna Herby (Ophthalmic Technician)
Uma Balasubramaniam (Photographer)
Loraine Clark (Photographer)
Donna McClain (Photographer)
Michael McCown, CRA, (Photographer)
Lynn Watson (Photographer)

**(003) Devers Eye Institute**
Michael Klein, MD, (Site PI)
Steven T. Bailey, MD, (Ophthalmologist)
Thomas J. Hwang, MD, (Ophthalmologist)
Andreas Lauer, MD, (Ophthalmologist)
J. Timothy Stout, MD, PhD, FACS, (Ophthalmologist)
Patty McCollum (Clinic Coordinator)
Milt Johnson (Photographer)
Patrick B. Rice CRA (Photographer)

**(004) Massachusetts Eye and Ear Infirmary**
Ivana Kim, MD, (Site PI)
John Loewenstein, MD, (Ophthalmologist)
Joan Miller, MD, (Ophthalmologist)
Lucia Sobrin, MD, (Ophthalmologist)
Lucy Young, MD, PhD, (Ophthalmologist)
Jacqueline Sullivan (Clinic Coordinator)
Patricia Houlihan (Assistant Coordinator)
Linda Merry, RN, (Assistant Coordinator)
Ann Marie Lane (Office Manager)
Ursula Lord Bator, OD, (Ophthalmic Technician)
Claudia Evans, OD, (Ophthalmic Technician)
Sarah Brett (Photographer)
Charleen Callahan (Photographer)
Marcia Grillo (Photographer)
(005) Texas Retina Associates
Gary Edd Fish, MD, JD, (Site PI)
Rajiv Anand, MD, (Ophthalmologist)
Lori E. Coors, MD, (Ophthalmologist)
Rand Spencer, MD, (Ophthalmologist)
Robert C. Wang, MD, (Ophthalmologist)
Karen Duignon (Clinic Coordinator)
Sally Arceneaux, COA, (Assistant Coordinator)
Hank Aguado, CRA, (Photographer)
Nicholas Hesse (Photographer)
Michael Mackens (Photographer)
Brian Swan (Photographer)

David Walsh (Photographer)
Kamella Lau Zimmerman (Photographer)

(006) National Eye Institute
Wai T. Wong, MD, PhD, (Site PI)
Catherine Cukras, MD, (Ophthalmologist)
Monica Dalal, MD, (Ophthalmologist)
Naima Jacobs-El, MD, (Ophthalmologist)
Catherine Meyerle, MD, (Ophthalmologist)
Benjamin Nicholson, MD, (Ophthalmologist)
Henry Wiley, MD, (Ophthalmologist)
Katherine Hall Shimel, RN,COT,MSN, (Clinic Coordinator)
Angel Garced, RN, (Assistant Coordinator)
Janice Oparah, RN, (Assistant Coordinator)
Greg Short, COMT, (Assistant Coordinator)
Alana Temple, RN, (Assistant Coordinator)
Babilonia Ayukawa, RN, (Phlebotomist)
Guy Foster, COT, (Ophthalmic Technician)
Darryl Hayes, COA, (Ophthalmic Technician)
Dessie Koutsandrreas (Ophthalmic Technician)
Roula Nashwintner (Ophthalmic Technician)
John Rowan (Ophthalmic Technician)
Emily Y. Chew, MD, Study Chair (Project Sponsor Staff (NEI))
Michael Bono (Photographer)
Denise Cunningham (Photographer)
Mariloa Palmer (Photographer)
Alicia Zetina (Photographer)

(007) Ingalls Memorial Hospital
David H. Orth, MD, (Site PI)
Kouroos Rezaei, MD, Co-PI (Site Co-PI)
Joseph Civantos, MD, (Ophthalmologist)
Sohail Hasan, MD, PhD, (Ophthalmologist)
Kirk Packo, MD, (Ophthalmologist)
Celeste Figliulo (Clinic Coordinator)
Pam Stanberry (Phlebotomist)
Tara Farmer (Photographer)
Kiersten Nelson (Photographer)
Shannya Townsend-Patrick (Photographer)

(008) Bascom Palmer Eye Institute
Philip Rosenfeld, MD, PhD, (Site PI)
Royce Chen, MD, (Ophthalmologist)
Rishi Doshi, MD, (Ophthalmologist)
Sander Dubovy, MD, (Ophthalmologist)
Brian T. Kim, MD, (Ophthalmologist)
Matthew Lowrance, DO, (Ophthalmologist)
Andrew Moshfeghi, MD, (Ophthalmologist)
Zayna Nahas, MD, (Ophthalmologist)
Gary Schienbaum, MD, (Ophthalmologist)
John Vishak, MD, (Ophthalmologist)
Christina Weng, MD, (Ophthalmologist)
Zohar Yehoshua, MD, (Ophthalmologist)
Belén Rodríguez (Clinic Coordinator)
Jose Rebimbasa (Assistant Coordinator)
Jane Gleichauf, RN, (Phlebotomist)
Mike Kicak (Ophthalmic Technician)
Jason Mena (Ophthalmic Technician)
Tim Oden (Ophthalmic Technician)
Elizabet Sferza-Camp (Ophthalmic Technician)
Alicia Disgdiert (Photographer)
Jim Oramas (Photographer)
Isabel Rams (Photographer)
Stephanie Thatcher (Photographer)

(009) The Retina Division at the Wilmer Eye Institute
Susan B. Bressler, MD, (Site PI)
Neil M. Bressler, MD, (Ophthalmologist)
Daniel Finkelstein, MD, (Ophthalmologist)
Steven H Sherman, MD, (Ophthalmologist)
Sharon Solomon, MD, (Ophthalmologist)
Howard S. Ying, MD, (Ophthalmologist)
Rita Denbow (Clinic Coordinator)
Deborah Phillips (Assistant Coordinator)
Elizabeth Radcliffe (Phlebotomist)
Judy Belt (Photographer)
Dennis Cain (Photographer)
David Emmert (Photographer)
Mark Herring (Photographer)
Jacquelyn McDonald (Photographer)

(010) Emory University Eye Center
G. Baker Hubbard, MD, (Site PI)
Chris S Bergstrom, MD, (Ophthalmologist)
Blaine Cribbs, MD, (Ophthalmologist)
Andrew Hendrick, MD, (Ophthalmologist)
Brandon Johnson, MD, (Ophthalmologist)
Philip Laird, MD, (Ophthalmologist)
Sonja Mehta, MD, (Ophthalmologist)
Timothy Olsen, MD, (Ophthalmologist)
Justin Townsend, MD, (Ophthalmologist)
Jion Yan, MD, (Ophthalmologist)
Steven Yeh, MD, (Ophthalmologist)
Linda Curtis, BSM, (Clinic Coordinator)
Judy Brown (Assistant Coordinator)
Hannah Yi (Assistant Coordinator)
Jannah Rutter Dobbs (Photographer)
Debbie Jordan (Photographer)

(011) Elman Retina Group, PA
Michael J. Elman, MD, (Site PI)
Robert A Liss, MD, (Ophthalmologist)
JoAnn Starr (Clinic Coordinator)
Jennifer Belz (Assistant Coordinator)
Charlene Putzulo (Assistant Coordinator)
Teresa Coffey (Ophthalmic Technician)
Ashley Davis (Ophthalmic Technician)
Pamela Singletary (Ophthalmic Technician)
Giorya Shabi Andreani (Photographer)
Theresa Cain (Photographer)
Daniel Ketner (Photographer)
Peter Sotirakos (Photographer)

(012) University of Wisconsin
Suresh Chandra, MD, (Site PI)
Barbara A. Blodi, MD, (Site Co-PI)
Ronald P. Danis, MD, (Ophthalmologist)
Justin L. Gottlieb, MD, (Ophthalmologist)
Ronald Klein, MD, (Ophthalmologist)
T. Michael Nork, MD, (Ophthalmologist)
Thomas S. Stevens, MD, (Ophthalmologist)
Kathryn Burke (Clinic Coordinator)
Shelly Olson (Clinic Coordinator)
Krystine Dietzman (Assistant Coordinator)
Barbara Soderling (Assistant Coordinator)
Guy Somers, RN, (Assistant Coordinator)
Angie Wealti (Assistant Coordinator)
Denise Krolnik (Photographer)
John Peterson (Photographer)
Sandra Reed (Photographer)

(013) UPMC Eye Center
Thomas Friberg, MD, (Site PI)
Andrew Eller, MD, (Ophthalmologist)
Denise Gallagher, MD, (Ophthalmologist)
Leanne Labriola, DO, (Ophthalmologist)
Melissa Pokriffka (Clinic Coordinator)
Aron Gedansky (Assistant Coordinator)
Natalie Anthony (Photographer)
Cassandra Grzybowski (Photographer)
Dawn Matthews (Photographer)
Sharon Murajda-Jumba (Photographer)
Jessica Toro (Photographer)

(014) Texas Retina Associates
Gary Edd Fish, MD, JD, (Site PI)
David G. Callanan, MD, (Ophthalmologist)
Wayne A. Solley, MD, (Ophthalmologist)
Patrick Williams, MD, (Ophthalmologist)
Sandy Lash (Clinic Coordinator)
Bob Boleson (Photographer)
Chris Dock (Photographer)

(015) Texas Retina Associates
Gary Edd Fish, MD, JD, (Site PI)
Michel Shami, MD, (Ophthalmologist)
Brenda Arrington (Clinic Coordinator)
Ashaki Meeks (Ophthalmic Technician)

(017) Vision Research Foundation
Alan J. Ruby, MD, (Site PI)
Alan R Margherio, MD, (Ophthalmologist)
Paul Raphaelian, MD, (Ophthalmologist)
Debra Markus (Clinic Coordinator)
Justin Langdon (Ophthalmic Technician)
Elizabeth Truax (Ophthalmic Technician)
Sandy Lewis (Photographer)

Brad Terry (Photographer)

(018) Vision Research Foundation
Alan J. Ruby, MD, (Site PI)
Amy Noffke, MD, (Ophthalmologist)
Kean Oh, MD, (Ophthalmologist)
Ramin Sarrafizadeh, MD, PhD, (Ophthalmologist)
Scott Sneed, MD, (Ophthalmologist)
Julie Hammersley, RN, (Clinic Coordinator)
Serena Neal (Assistant Coordinator)
Mary Doran (Ophthalmic Technician)
Nan Jones (Ophthalmic Technician)
Lisa Preston (Ophthalmic Technician)
Heather Jessick (Photographer)
Tanya Tracy Marsh (Photographer)

(020) Center for Retina and Macular Disease
Michael Tolentino, MD, (Site PI)
Adam Berger, MD, (Ophthalmologist)
Richard Hamilton, MD, (Ophthalmologist)
David Misch, MD, (Ophthalmologist)
Suk Jin Moon, MD, (Ophthalmologist)
Dawn Sutherland (Clinic Coordinator)
Vera Delts (Assistant Coordinator)
Sara Henderson (Assistant Coordinator)
Esmeralda Medina (Clinic Coordinator)
Donald Trueman (Assistant Coordinator)
Laura Holm, LPN, (Ophthalmic Technician)
Jason Strickland (Photographer)

(021) Delaware Valley Retina Associates
Darmakusuma le, MD, (Site PI)
Jeffrey L. Lipkowitz MD (Ophthalmologist)
Kekul B. Shah, MD, (Ophthalmologist)
Susan Geraghty (Clinic Coordinator)
Beverly Sannazzaro (Clinic Coordinator)
Morgan Harper (Ophthalmic Technician)
Krista Bayer (Photographer)

(022) Eldorado Retina Associates, PC
Mary B. Lansing, MD, (Site PI)
Lauren B. Fox (Clinic Coordinator)
Rebecca Lee (Photographer)

(023) Georgia Retina, PC
Jay B. Stallman, MD, FACS, (Site PI)
Michael Jacobson, MD, (Ophthalmologist)
Sean Koh, MD, (Ophthalmologist)
Scott Lampert, MD, (Ophthalmologist)
John Miller, MD, (Ophthalmologist)
Mark Rivellese, MD, (Ophthalmologist)
Atul Sharma, MD, (Ophthalmologist)
Robert A. Stoltz, MD, (Ophthalmologist)
Stephanie Vanderveldt, MD, (Ophthalmologist)
Leslie Marcus (Clinic Coordinator)
Starr Hendricks (Assistant Coordinator)
Ryan Hollman (Assistant Coordinator)
Grethel Betanzos (Ophthalmic Technician)
Leslie Ellorin (Ophthalmic Technician)
Shelly Fulbright (Ophthalmic Technician)
Debbie McCormick (Photographer)
(024) Henry Ford Health System - Eye Care Services
Paul A. Edwards, MD, (Site PI)
Julianne Hall (Clinic Coordinator)
Mary Monk (Clinic Coordinator)
Melanie Gutkowski (Assistant Coordinator)
Melina Mazurek (Assistant Coordinator)
Janet Murphy (Assistant Coordinator)
Katherine Guas (Office Manager)
Crystal Moffett (Office Manager)
David Burley (Photographer)
Nicole Chesney (Photographer)
Katie Kilgo (Photographer)
Brian Rusinek (Photographer)
Bradley Stern (Photographer)
Rhonda Baker-Levingston (Pharmacist)

(025) Paducah Retinal Center
Carl W. Baker, MD, (Site PI)
Tracey Caldwell (Clinic Coordinator)
Tammy Walker (Assistant Coordinator)
Lynnette F. Lambert (Ophthalmic Technician)
Tracey Martin (Ophthalmic Technician)
Mary Jill Palmer (Ophthalmic Technician)
Tana Williams (Photographer)

(026) Retina Associates of Cleveland
Michael A Novak, MD, (Site PI)
Joseph Coney, MD, (Ophthalmologist)
David G. Miller, MD, (Ophthalmologist)
Scott Pendergast, MD, (Ophthalmologist)
Lawrence Singerman, MD, (Ophthalmologist)
Nicholas Zakov, MD, (Ophthalmologist)
Hernando Zegarra, MD, (Ophthalmologist)
Kim DuBois (Clinic Coordinator)
Susan Rath (Clinic Coordinator)
Lori Revella (Clinic Coordinator)
Tammy Brink (Ophthalmic Technician)
Kim Drury (Ophthalmic Technician)
Lisa Hogue (Ophthalmic Technician)
Mary Ilc (Ophthalmic Technician)
Connie Keller (Ophthalmic Technician)
Elizabeth McNamara (Ophthalmic Technician)
Vivian Tanner (Ophthalmic Technician)
Tamara Cunningham (Photographer)
John DuBois (Photographer)
Gregg Greanoff (Photographer)
Trina Nitzsche (Photographer)
Sheila Smith-Brewer (Photographer)

(027) Retina Associates of Kentucky
Ricky D. Isemhagen, MD, (Site PI)
John W. Kitchens, MD, (Ophthalmologist)
Thomas W. Stone, MD, (Ophthalmologist)
William J. Wood, MD, (Ophthalmologist)
Diana Holcomb (Clinic Coordinator)
Virginia Therrien (Office Manager)
Michelle Buck, COT, (Ophthalmic Technician)
Jeanne Van Arsdall (Ophthalmic Technician)
Edward Slade, CRA,COA, (Photographer)

(029) Retina Center Northwest
Todd E. Schneiderman, MD, (Site PI)
David J. Spinak, MD, (Ophthalmologist)
Jackie Gaedke (Clinic Coordinator)
Heather Davis Brown (Assistant Coordinator)
Dan Helgren (Assistant Coordinator)
Jenifer Garrison Pangelinan (Photographer)

(030) Retina Group of Florida
Lawrence Halperin, MD, (Site PI)
Scott Anagnoste, MD, (Ophthalmologist)
Mandeep Dhalla, MD, (Ophthalmologist)
Krista Rosenberg, MD, (Ophthalmologist)
W. Scott Thompson, MD, (Ophthalmologist)
Jaclyn Lopez (Clinic Coordinator)
Monica Hamlin (Assistant Coordinator)
Monica Lopez (Assistant Coordinator)
Jamie Mariano, COA, (Ophthalmic Technician)
Evelyn Quinchia (Ophthalmic Technician)
Patricia Aramayo (Photographer)
Rita Vekslser (Photographer)

(031) Retina Northwest, PC
Michael Lee, MD, (Site PI)
Richard Dreyer, MD, (Ophthalmologist)
Irvin Handelman, MD, (Ophthalmologist)
Colin Ma, MD, (Ophthalmologist)
Mark Peters, MD, (Ophthalmologist)
Stephen Hobbs III (Clinic Coordinator)
Amanda Milliron (Assistant Coordinator)
Marcia Kopfer (Ophthalmic Technician)
Michele Connaughton (Photographer)
A. Christine Hoerner (Photographer)
R. Joseph Logan (Photographer)
Harry J. Wohlsein (Photographer)

(032) Retina-Vitreous Associates Medical Group
David Boyer, MD, (Site PI)
Thomas G. Chu, MD, PhD, (Ophthalmologist)
Pouya Dayani, MD, (Ophthalmologist)
David Liao, MD, (Ophthalmologist)
Roger L. Novack, MD, PhD, (Ophthalmologist)
Firas M. Rahhal, MD, (Ophthalmologist)
Richard Roe, MD, (Ophthalmologist)
Homayoun Tabandeh, MD, (Ophthalmologist)
Janet Bayramyan (Clinic Coordinator)
Tammy Gasparian (Assistant Coordinator)
Connie Hoang (Assistant Coordinator)
Janet Kurokouchi (Assistant Coordinator)
Tammy Eileen Lo (Assistant Coordinator)
Richard Ngo (Assistant Coordinator)
Mary Ann Nguyen (Assistant Coordinator)
Michael Peyton (Assistant Coordinator)
Charles Yoon (Assistant Coordinator)
Julio Sierra (Ophthalmic Technician)
Adam Zamboni (Ophthalmic Technician)
Jeff Kessinger (Photographer)
Eric Protacio (Photographer)
Adam Smucker (Photographer)
(033) Retina Vitreous Consultants
Pamela Rath, MD, (Site PI)
Robert Bergren, MD, (Ophthalmologist)
Bernard Doft, MD, (Ophthalmologist)
Judy Liu, MD, (Ophthalmologist)
Karl Olsen, MD, (Ophthalmologist)
Lori Merlotti, (Clinic Coordinator)
Willia Ingram, (Assistant Coordinator)
Kellianne Mathis (Ophthalmic Technician)
Kimberly Yeckel, (Ophthalmic Technician)
Heather Schultz Carmelo, (Photographer)
Amanda Fec, (Photographer)
Keith McBroom, (Photographer)
David Steinberg, (Photographer)

Matthew S. Benz, MD, (Ophthalmologist)
Richard H. Fish, MD, FACS, (Ophthalmologist)
Rosa Y. Kim, MD, (Ophthalmologist)
James Major Jr, MD, (Ophthalmologist)
Tien Pei Wong, MD, (Ophthalmologist)
Charles Wycoff, MD, PhD, (Ophthalmologist)
Cassandra Cone, (Clinic Coordinator)
Debbie Goates Gilaspia, (Assistant Coordinator)
Nubia Landaverde, (Assistant Coordinator)
Robert Smith, (Assistant Coordinator)
Deneva Zamora, (Assistant Coordinator)
Veronica Sneed, (Ophthalmic Technician)
Melina Vela, (Ophthalmic Technician)
Eric Kegley, (Photographer)

(034) Sarasota Retina Institute
Marc Levy, MD, (Site PI)
Jody Abrams, MD, (Ophthalmologist)
Melvin Chen, MD, (Ophthalmologist)
Waldemar Torres, MD, (Ophthalmologist)
Peggy Jelemsky, (Clinic Coordinator)
Mark Prybylski, (Ophthalmic Technician)
Tara Raphael, (Ophthalmic Technician)
Diana Appleby, (Photographer)
Charlotte Rodman, (Photographer)
Mark Sneath, COA, (Photographer)

Craige Greven, MD, (Site PI)
Shree Kurup, MD, (Ophthalmologist)
Charles Richards, MD, (Ophthalmologist)
Madison Slusher, MD, (Ophthalmologist)
Cara Everhart, (Clinic Coordinator)
Joan Fish, RN, CCRC, (Assistant Coordinator)
Mark Clark, (Photographer)
David Miller, (Photographer)
Marshall Tyler, CRA, FOPS, (Photographer)

(035) Scott and White Memorial Hospital
Robert H. Rosa, Jr., MD, (Site PI)
Vanessa Hoelscher, (Clinic Coordinator)
Adelia Castano, (Ophthalmic Technician)
Jocelyn Parker, (Photographer)

J. Michael Jumper, MD, (Site PI)
Arthur D. Fu, MD, (Ophthalmologist)
Robert N. Johnson, MD, (Ophthalmologist)
Brandon Lujan, MD, (Ophthalmologist)
H. Richard McDonald, MD, (Ophthalmologist)
Rosa Rodriguez, (Clinic Coordinator)
Nina Ansari, (Ophthalmic Technician)
Jeanifer Joaquin, (Ophthalmic Technician)
Silvia Linares, (Ophthalmic Technician)
Lizette Lopez, (Ophthalmic Technician)
Jessica Sabio, (Ophthalmic Technician)
Sean Grout, (Photographer)
Chad Indermill, (Photographer)
Yesmin Urias, (Photographer)
Roberto Zimmerman, (Photographer)

(036) Southeastern Retina Associates, PC
John Hoskins, MD, (Site PI)
Nicholas Anderson, MD, (Ophthalmologist)
Joseph Googe, Jr., MD, (Ophthalmologist)
Todd A McMillan, MD, (Ophthalmologist)
James Miller Jr., MD, (Ophthalmologist)
Stephen Perkins, MD, (Ophthalmologist)
Kristina Oliver, (Clinic Coordinator)
Jennifer Beerbower, (Ophthalmic Technician)
Bruce Gilliland, OD, (Ophthalmic Technician)
Cecile Hunt, (Ophthalmic Technician)
Mike Jacobus, (Photographer)
Raul Lince, (Photographer)
Christopher Morris, (Photographer)
Sarah Oelrich, (Photographer)
Jerry Whetstone, (Photographer)

Linda Margules, MD, (Site PI)
Sara J. Schmidt, PharmD, (Clinic Coordinator)
Joy L. Meier, PharmD, (Assistant Coordinator)
Sherry L. Hadley, COA, FOPS, (Ophthalmic Technician)

(037) Southern California Desert Retina Consultants, MC
Clement K. Chan, MD, (Site PI)
Steven Lin, MD, (Ophthalmologist)
Kim Walther, (Clinic Coordinator)
Tiana Gonzales, (Assistant Coordinator)
Lenise Myers, (Ophthalmic Technician)
Kenneth Huff, COA, (Photographer)

William Rosenthal, MD, (Site PI)
Barbara Johnson, RN, (Clinic Coordinator)
Lois Swafford, (Office Manager)
Richard Shields, RN, (Ophthalmic Technician)
R. Scott Varner, (Photographer)

(038) Retina Consultants of Houston
David M. Brown, MD, (Site PI)
Eric Chen, MD, (Ophthalmologist)

Richard Rosen, MD, (Site PI)
Ronald Gentle, MD, (Ophthalmologist)
Melissa Rivas, (Clinic Coordinator)
Katy W. Tai, CRC, (Assistant Coordinator)
Wanda Carrasquillo-Boyd (Photographer)
Robert Masini (Photographer)

(044) Ophthalmic Consultants of Long Island
Glenn Stoller, MD, (Site PI)
Ken Carnevale, MD, (Ophthalmologist)
Diane M. LaRosa, CRNO, (Clinic Coordinator)
Barbara Burger, RN, CCRC, (Assistant Coordinator)
Tereza Conway (Assistant Coordinator)
Carla Del Castillo (Assistant Coordinator)
Julissa Diaz (Assistant Coordinator)
Susan Jones (Assistant Coordinator)
Nina Mondoc (Assistant Coordinator)
Charlene Balfour (Ophthalmic Technician)
CH Vitha (Ophthalmic Technician)
Jennifer Lutz (Photographer)
Barbara McGinley (Photographer)

(045) The Research Foundation of SUNY/SB
Fadi El Baba, MD, (Site PI)
Ann Marie Lavorna (Clinic Coordinator)
Renee Jones (Assistant Coordinator)
Jean Lewis (Assistant Coordinator)
Ruth Tenzler, RN, BSN, (Assistant Coordinator)
Mary Salvas-Mladen, CRA, (Ophthalmic Technician)
Diane Van Kesteren, COA, (Ophthalmic Technician)

(046) Western Carolina Retinal Associates
W. Copley McLean, Jr., MD, (Site PI)
W. Zachery Bridges, Jr., MD, (Ophthalmologist)
Cameron Stone, MD, (Ophthalmologist)
Denise Ammons (Clinic Coordinator)
Mary Lamy (Assistant Coordinator)
Andrea Menzel (Assistant Coordinator)
Lea Doll Raymer (Assistant Coordinator)
Barbara Campbell (Ophthalmic Technician)
Lisa Hawkins (Ophthalmic Technician)
Leslie Rickman (Ophthalmic Technician)
Lorraine Sherlin (Ophthalmic Technician)
Paula Price (Photographer)
Albert Sinyai (Photographer)

(047) Dean McGee Eye Institute
Ronald Kingsley, MD, (Site PI)
Reagan H. Bradford, Jr., MD, (Ophthalmologist)
Robert E. Leonard II, MD, (Ophthalmologist)
Sonny Icks (Clinic Coordinator)
Vanessa Bergman (Ophthalmic Technician)
Brittany Ross (Ophthalmic Technician)
Russ Burris (Photographer)
Amanda Butt (Photographer)
Rob Richmond (Photographer)

(048) Northwestern University, Ophthalmology
Alice Lyon, MD, (Site PI)
Manjot Gill, MD, (Ophthalmologist)
Lee Jampol, MD, (Ophthalmologist)
Ruhksana Mizra, MD, (Ophthalmologist)
Zuzanna Rozenbajgier (Clinic Coordinator)
Jeremy Chapman (Assistant Coordinator)
Lori Kaminski (Assistant Coordinator)
Andrea Degillio (Photographer)
Evica Simjanoski, CRA, (Photographer)

(049) Ophthalmic Consultants of Boston
Jeffrey Heier, MD, (Site PI)
Hyung Cho, MD, (Ophthalmologist)
Tina Scheufe Cleary, MD, (Ophthalmologist)
Darin Goldman, MD, (Ophthalmologist)
Chirag Shah, MD, (Ophthalmologist)
Trexler Topping, MD, (Ophthalmologist)
Marissa Weber, MD, (Ophthalmologist)
Torsten Wiegand, MD, PhD, (Ophthalmologist)
Jeremy Schindelheim (Clinic Coordinator)
Joy Bankert (Assistant Coordinator)
Jennifer Stone (Assistant Coordinator)
Alison Nowak (Office Manager)
Sandy Chong (Ophthalmic Technicians)

(050) Pacific Eye Associates
Anne Fung, MD, (Site PI)
Jan-Kristine Bayabo (Clinic Coordinator)
Razelda Bosch (Assistant Coordinator)
Esperanza Cruz (Assistant Coordinator)
Ashley Emerson (Assistant Coordinator)
Alycia Fleming (Ophthalmic Technician)
Denise Barsness (Photographer)
Jorge Rodriguez (Photographer)
Marina Soboleva (Photographer)

(051) Penn State M.S. Hershey Medical Center
Ingrid U. Scott, MD, MPH, (Site PI)
Esther Bowie, MD, (Ophthalmologist)
Kimberly A Neely, MD, PhD, (Ophthalmologist)
David A. Quillen, MD, (Ophthalmologist)
Laura Walter (Clinic Coordinator)
Timothy Bennett (Photographer)
James Strong (Photographer)

(052) Palmetto Retina Center
John Wells, III, MD, (Site PI)
Lloyd Clark, MD, (Ophthalmologist)
David Johnson, MD, (Ophthalmologist)
Peggy Miller (Clinic Coordinator)
Mallie Taylor (Assistant Coordinator)
Tiffany Swinford (Ophthalmic Technician)
Robbin Spivey (Photographer)

(053) Pennsylvania Retina Specialists, PC
Michael Banach, MD, (Site PI)
Lawrence Ho, MD, (Ophthalmologist)
Richard Lanning, MD, (Ophthalmologist)
Thomas R Pheasant, MD, (Ophthalmologist)
Jay G Prensky, MD, (Ophthalmologist)
Steven Truong, MD, (Ophthalmologist)
Julia Teatsworth, COT, (Clinic Coordinator)
Paula Morris, CRA, (Photographer)

(063) Loma Linda University
   Michael R. Ascher, MD, (Site PI)
   Joseph Fan, MD, (Ophthalmologist)
   Mukesh Suthar, MD, (Ophthalmologist)
   Gisela Santiago, (Clinic Coordinator)
   Joseph K. McKnight, MD, (Ophthalmologist)
   Josephine K. Halsey, (Assistant Coordinator)

(064) Baylor College of Medicine
   Richard Allan Lewis, MD, MS, (Site PI)
   Cindy Dorenbach, COT, (Clinic Coordinator)
   Steven Spencer, COMT, (Ophthalmic Technician)
   Dana Barnett, (Photographer)

(065) Carolina Retina Center
   Barron C. Fishburne, MD, (Site PI)
   Jeffrey G. Gross, MD, (Ophthalmologist)
   Michael A. Magee, MD, (Ophthalmologist)
   Amy Flowers, (Clinic Coordinator)
   Angie McDowell, (Ophthalmic Technician)
   Randall Price, (Photographer)

(066) Case Western Reserve University
   Suber Huang, MD, MBA, (Site PI)
   Johnny Tang, MD, (Ophthalmologist)
   Shawn Wilker, MD, (Ophthalmologist)
   Cherie Hornsby, (Clinic Coordinator)
   Lisa Ferguson, (Assistant Coordinator)
   Riva Adamovsky, (Ophthalmic Technician)
   Peggy Allchin, (Ophthalmic Technician)
   Kathleen Carlton, (Optical Technician)
   Claudia Clow, (Optical Technician)
   Kelly Shollis, (Optical Technician)
   Stephanie Burke, (Photographer)
   Mark Harrod, (Photographer)
   Stacie Hrvatin, (Photographer)
   Geoffrey Pankhurst, (Photographer)

(067) Eye Foundation of Kansas City
   Nelson R. Sabates, MD, (Site PI)
   Michael Cassell, MD, (Ophthalmologist)
   Komal Desai, MD, (Ophthalmologist)
   Abraham Poulose, MD, (Ophthalmologist)
   Felix Sabates, MD, (Ophthalmologist)
   Yin Chen, (Clinic Coordinator)
   Gary Gallimore, COMT, (Photographer)
   Yolanda Konior, (Photographer)

(068) Jones Eye Institute - UAMS
   Nicola Kim, MD, (Site PI)
   Sami Uwaydat, (Ophthalmologist)
   Deborah Troillet, (Clinic Coordinator)
   Karen Aletter, (Photographer)

(069) Kresge Eye Institute
   Robert N. Frank, MD, (Site PI)
   Gary Abrams, MD, (Ophthalmologist)
   James Fukun, MD, (Ophthalmologist)
   Asha Shewari, MD, (Ophthalmologist)
   Cheryl Milanovic, (Clinic Coordinator)
   Melanie Bailey, (Photographer)
   Nana M. McDonald, (Photographer)
   Dena McDonald, (Photographer)
   Kit Morehead, (Photographer)
   Zlatan Pavlovic, (Photographer)
   Lisa Schillace, (Photographer)
   Elizabeth Silvis, (Photographer)

(070) Colorado Retina Associates PC
   Brian Joondep, MD, (Site PI)
   Nancy Christmas, MD, (Ophthalmologist)
   David Johnson, MD, (Ophthalmologist)
   Alan Kimura, MD, (Ophthalmologist)
   Mimi Liu, MD, (Ophthalmologist)
   Stephen Petty, MD, (Ophthalmologist)
   John Zilis, MD, (Ophthalmologist)
   Jenny Benitez, (Clinic Coordinator)
   Cassandra Berryman Catlett, (Assistant Coordinator)
   Eric Fluegel, RN, (Assistant Coordinator)
   Shane Mowry, (Photographer)
   Hoang Nguyen, (Photographer)
   David Reflow, (Photographer)

(071) UNC Department of Ophthalmology
   Odette M. Houghton, MD, (Site PI)
   Seema Garg, MD, PhD, (Ophthalmologist)
   Maurice F. Landers, MD, (Ophthalmologist)
   Travis Meredith, MD, (Ophthalmologist)
   Sandy Barnhart, MPH, (Clinic Coordinator)
   Megha Karmalkar, (Assistant Coordinator)
   Debra Cantrell, (Photographer)
   Rona Lyn Esquejo-Leon, (Photographer)
   Linda Manor, (Pharmacist)
   Sue Pope, (Pharmacist)
   David Stines, (Pharmacist)
   Amelia Stokely, (Pharmacist)

(072) University Health Care - Mason Eye Institute
   Dean Hainsworth, MD, (Site PI)
   Dyann Helming, (Clinic Coordinator)
   Debbie Eichelberger, (Office Manager)
   Mary Paige Leaton, (Ophthalmic Technician)
   Chuck Hams, (Photographer)

(073) University of Tennessee HSC
   Edward Chaum, MD, PhD, (Site PI)
   Alessandro Iannaccone, MD, (Ophthalmologist)
   Barbara Jennings, MA, OD, (Clinic Coordinator)
   Tracy Murray, (Ophthalmic Technician)
   Joe Mastelone, (Photographer)

(074) Fletcher Allen Health Care
   Robert Millay, MD, (Site PI)
   Brian Kim, MD, (Ophthalmologist)
   Theresa Goddard, (Clinic Coordinator)
   Liza Jarrett Beaudette, (Ophthalmic Technician)
   Nina Changhelian-Aitken, (Ophthalmic Technician)
(078) Mayo Clinic
Raymond Iezzi, MD, (Site PI)
Sophie J. Bakri, MD, (Ophthalmologist)
Jose S. Pulido, MD, (Ophthalmologist)
Diane Vogen (Clinic Coordinator)
Rebecca Nielsen, LPN, (Assistant Coordinator)
Karin Berg (Ophthalmic Technician)
Jean Berrington, COA, (Ophthalmic Technician)
Shannon Howard, COA, (Ophthalmic Technician)
Joan Overend (Ophthalmic Technician)
Zbigwiew Krasow (Photographer)
Denise Lewison (Photographer)
Thomas Link, CRA, (Photographer)

(079) The Retina Institute
Kevin J. Blinder, MD, (Site PI)
Nicholas E. Engelbrecht, MD, (Ophthalmologist)
M. Gilbert Brand, MD, (Ophthalmologist)
Daniel P. Joseph, MD, PhD, (Ophthalmologist)
Gaurav K. Shah, MD, (Ophthalmologist)
Bradley Smith, MD, (Ophthalmologist)
Matthew Thomas, MD, (Ophthalmologist)
Rhonda Weeks (Clinic Coordinator)
Lynda Boyd (Ophthalmic Technician)
Dana Gabel (Photographer)

(080) Yale University Eye Center
Ron Adelman, MD, (Site PI)
John Huang, MD, (Ophthalmologist)
James Kempton, MD, (Ophthalmologist)
Aaron Parnes, MD, (Ophthalmologist)
Jennifer Dupont (Clinic Coordinator)
Elizabeth Perotti (Assistant Coordinator)
Victoria Donaldson (Ophthalmic Technician)
Kenneth Feng (Photographer)
Pamela Ossorio (Photographer)

(081) Vanderbilt Eye Institute
Anita Agarwal, MD, (Site PI)
Paul Sternberg, MD, (Ophthalmologist)
Sandy Owings (Clinic Coordinator)
Tony Adkins (Photographer)
Elaine Lok (Photographer)
Garvin Munn (Photographer)
Buddy Skellie (Photographer)

(082) UMDNJ
Neelakshi Bhagat, MD, MPH, (Site PI)
Monique S. Roy, MD, (Ophthalmologist)
Marco Zarbin, MD, PhD, (Ophthalmologist)
Catherine Fay (Clinic Coordinator)
Michael Lazar (Photographer)
Beth Malpica (Photographer)
Tatiana Mikheyav (Photographer)

(084) The University of Illinois
Lawrence Ulanski II, MD, (Site PI)
Jennifer Lim, MD, (Ophthalmologist)
Marcia Nieg, BS CCRP, (Clinic Coordinator)

(085) Jules Stein Eye Institute
Steven Schwartz, MD, (Site PI)
David Cupp, MD, (Ophthalmologist)
Michael Gorin, MD, PhD, (Ophthalmologist)
Gad Helweil, MD, (Ophthalmologist)
Hamid Hosseini, MD, (Ophthalmologist)
Jean-Pierre Hubschman, MD, (Ophthalmologist)
Allan Kreiger, MD, (Ophthalmologist)
Tara Young McCannel, MD, (Ophthalmologist)
Carolyn Pan, MD, (Ophthalmologist)
David Sarraf, MD, (Ophthalmologist)
Irena Tsui, MD, (Ophthalmologist)
Joshua Udoteak MD(Ophthalmologist)
Vinad Voleti, MD, (Ophthalmologist)
Logan Hitchcock (Clinic Coordinator)
Rosaleen Ostrick (Assistant Coordinator)
Melissa Chun, OD, (Ophthalmic Technician)
Jennie Kageyama, OD, (Ophthalmic Technician)
Nilo Davila (Photographer)
Kristin Lipka (Photographer)
Christina Shin (Pharmacist)

(086) Univ. of Alabama at Birmingham
Cynthia Owsley, PhD, (Site PI)
Michael Albert, Jr., MD, (Ophthalmologist)
Richard Feist, MD, (Ophthalmologist)
John Mason, MD, (Ophthalmologist)
Martin Thomley, MD, (Ophthalmologist)
Angelia Johnson (Clinic Coordinator)
Mark Clark (Assistant Coordinator)
Tracy Emont (Assistant Coordinator)
Joanna Hamela (Assistant Coordinator)
Angela Marsh (Office Manager)
Karen Searcey (Office Manager)
Kia Rookard (Ophthalmic Technician)

(087) UT Southwestern Medical Center
Yu-Guang He, MD, (Site PI)
Rafael L. Ufret-Vincenty, MD, (Ophthalmologist)
Mike Molai (Clinic Coordinator)
William Anderson (Photographer)
John Horna (Photographer)

(088) Ohio State University
Alan Letson, MD, (Site PI)
Colleen Cebulla, MD, PhD, (Ophthalmologist)
Susie Chang, MD, (Ophthalmologist)
Fred Davidson, MD, (Ophthalmologist)
Jill Salerno (Clinic Coordinator)
Laura Sladoje (Office Manager)
Christina Stetson (Office Manager)
Jeni Perry (Ophthalmic Technician)
Scott Savage (Photographer)

(089) Duke University
Cynthia Toth, MD, (Site PI)
Glenn Jaffe, MD, (Ophthalmologist)
Stefanie Schuman, MD, (Ophthalmologist)
Neeru Sarin, MBBS, (Clinic Coordinator)
Jim Crowell (Photographer)
Tiffanie Keaton (Photographer)
Michael Kelly (Photographer)
Brian Lutman (Photographer)
Marriner Skelly (Photographer)
Lauren Welch (Photographer)

Lawrence Morse, MD, PhD, (Site PI)
Allan Hunter, MD, (Ophthalmologist)
Susanna Soon-Chun Park MD, PhD (Ophthalmologist)
Cynthia Wallace (Clinic Coordinator)
Ember Dhillon (Assistant Coordinator)
Marisa Salvador (Assistant Coordinator)
Barbara Holderreed (Office Manager)
Karishma Chandra (Photographer)
Sashi Kaur (Photographer)
Ellen Redenbo (Photographer)
Smiley Hom (Pharmacist)

Michael Cooney, MD, (Site PI)
Irene Barbazetto, MD, (Ophthalmologist)
James M. Klaasen, Jr., MD, (Ophthalmologist)
John A. Sorenson, MD, (Ophthalmologist)
Lawrence Yannuzzi, MD, (Ophthalmologist)
Maria Salaro (Clinic Coordinator)
Eugene Agresta (Photographer)
Nancy Gonzalez (Photographer)

Sandeep Grover, MD, (Site PI)
K.V. Chalam, MD,PhD, (Ophthalmologist)
Shailesh Gupta, MD, (Ophthalmologist)
Christopher Lyons (Clinic Coordinator)
Wenhua Li (Assistant Coordinator)
Chirag Patel, MD, (Assistant Coordinator)
Jose Carrion (Photographer)

Henry Ferreyra, MD, (Site PI)
Amberly Rodriguez (Clinic Coordinator)
Ilania Molina (Assistant Coordinator)
Gabriel Balea (Photographer)
Pam Emory (Photographer)
Marlene Rico (Photographer)
Giorgio Siqueiros (Photographer)

Alexander J. Brucker, MD, (Site PI)
Joshua Duniaef, MD, (Ophthalmologist)
Juan Grunwald, MD, (Ophthalmologist)
Benjamin Kim, MD, (Ophthalmologist)
Albert M. Maguire, MD, (Ophthalmologist)
Brian VanderBeek, MD, (Ophthalmologist)
Sheri Drossner, MSW, (Clinic Coordinator)
Joan DuPont (Assistant Coordinator)
Rebecca Salvo (Assistant Coordinator)
Jim Berger (Photographer)