

# Ram Rao Peddada, MD, DSc

*Board Certified Ophthalmologist, Fellowship Trained in Medical and Surgical Retina*

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## **Primary Interests**

- Medical and Surgical management of vitreoretinal diseases including retinal detachments, age-related macular degeneration, diabetic retinopathy, vascular occlusion, macular edema, macular hole, epiretinal membrane

## **Clinical Employment**

- Founder, *Retina of Auburn & Metro-Columbus, LLC*, July, 2016
- Associate/Partner, *Eye Center South*, September, 2011- Present
- Founder, Retina Specialist, *Retina Associates of Mid-Wyoming, LLC*, 2005 - 2011

## **Clinical Training**

- Fellow, Vitreoretinal Surgery, Northwestern University, Chicago, July, 2003 – June, 2005
- Chief Resident, Ophthalmology, University of South Carolina, July, 2002 – June, 2003 (Selected by Faculty, Concurrent with Third Year Ophthalmology Residency)
- Resident, Department of Ophthalmology, University of South Carolina, July, 2000 - June, 2003
- Intern, Internal Medicine, Franklin Square Hospital Center, Baltimore, July, 1999 - June, 2000

## **Education and Other Non-Clinical Employment (Listed together to preserve chronology)**

- **M.D.**, School of Medicine, University of Maryland, Baltimore, August, 1995 – May, 1999
- Tenure-Track Assistant Professor, Mechanical Engineering/Biomedical Engineering, University of Maryland (UMBC), August, 1989 - July, 1995
- Research Assistant, Mechanical Engineering, Washington University, St. Louis, September, 1982 – July, 1989
- **D.Sc. (Ph.D.)** and **M.S.**, Mechanical Engineering, Washington University, St. Louis, September, 1982 – December, 1989
- **B.S.**, Mechanical Engineering, Indian Institute of Technology, New Delhi, May, 1982

## **Recent Other Professional Activities**

- Clinical Faculty, Alabama College of Osteopathic Medicine, Dothan, AL, 2014 - Present
- Adjunct Faculty, University of Wyoming Family Medicine Residency Program, 2007-11
- President and CEO, innovative solutions in medicine & surgery, LLC – Developer CeViT, SiteforSight.net, and CompCharts EHR System

### Professional Services

- Reviewer - RETINA, *Lippincott Williams & Wilkins*, 2014 - 2017  
- Journal of Ophthalmology, *Hindawi Publishing Corporation*, 2014 - 2015
- Councilor, State of Wyoming, American Academy of Ophthalmology, 2008-2011
- Editor, American Society of Mechanical Engineers, ECTC, 2012

### Patents

- System and method for central vision assessment and tracking  
US 20170188809 A1 (Published, July 2017)
- System and method for identifying or alerting an appropriate eye care provider  
US 20170188806 A1 (Published, July 2017)
- Enhanced Blood Circulation By Analogues of Aspirin  
(Hosmane and **Peddada Rao**, U.S. Patent # 5,599,959).

### Awards and Honors

- American Academy of Ophthalmology Service Award, 2011
- Invited Speaker, Retinal Degeneration Symposium, International Congress for Eye Research, Sydney, Australia
- Outstanding Resident Research Award, University of South Carolina, Department of Ophthalmology
- George Frick Award for Excellence in Ophthalmology to Graduating Senior, University of Maryland
- Best Overall Clinical Research Presentation, 24th Annual International ESRF Proceedings, University of Miami, Florida
- National Institutes of Health Summer Research Fellowship

### Grants Received

- Principal Investigator (PI), HARBOR Clinical Trial for Treatment of Wet Age-Related Macular Degeneration sponsored by Genentech, Inc.
- Principal Investigator on American Health Assistance Foundation Research Grant, “Is Oxygen Diffusivity of Bruch’s Membrane Lowered in AMD?”
- Palmetto Health Alliance Resident Research Award for “Association between mechanical stress in Bruch’s membrane and Age-related Macular Degeneration”.
- Whitaker Foundation Special Opportunity Award in Biomedical Engineering.
- PI on sub-contract from University of Maryland at Baltimore, “Design and Fabrication of Cardiac Phantom for Quantitative Contrast Echocardiography”.
- PI on NSF Grant “Computer Mathematical Analysis of Nonlinear Problems in Engineering Science”.
- PI on Minta-Martin Foundation Grant “Influence of High-g Environment on Blood Flow in a Capillary”.

### Relevant Memberships: Past and Present

- American Society of Retina Specialists (ASRS)
- American Academy of Ophthalmology (AAO)
- American Medical Association (AMA)

## Peer-Reviewed Publications and Abstracts in Conference Proceedings

### Retina

- **Peddada R.**, Alvernaz G., Peddada S., “Idiopathic Macular Hole Repair: A non-linear relationship between pre-operative and post-operative visual acuity”, [ARVO Abstract], *Invest Ophthalmol Vis Sci*, 2017.
- Pivovarov, A., Valadez, J., **Peddada, R.**, “Imaging with Fluorescein Angiogram to Quantify Diffusivity of Choroidal Neovascular Membrane” [ARVO Imaging in the Eye Conference Abstract], 2017.
- **Peddada R.**, “Bruch's Membrane Diffusivity for Vascular Endothelial Growth Factors May Explain Variable Response to Wet Age-related Macular Degeneration Treatment: Clinical Implications”, *Medical Hypotheses*, 2014 Dec;83(6):835-7.
- **Peddada R.**, “Subfoveal Fluid is a Sign of Kenalog Sensitive Retinal Leakage”, Presented at XI Congress of Southeastern European Society of Ophthalmology, Bucharest, Romania, October 4, 2014
- **Peddada R.**, “Silicone oil use towards one hundred percent retinal re-attachment rate – its rationale, repercussions, and results”, The 5<sup>th</sup> World Congress on Controversies in Ophthalmology (COPHY), Lisbon, Portugal, March, 2014
- **Peddada R.**, “Sterile endophthalmitis following intravitreal injections of bevacizumab – a report of two cases”, Abstract of 11<sup>th</sup> Congress of European Society of Retina Specialists, London, UK, May, 2011.
- **Peddada R.** and Weinberg, D., “Mechanics of Macular Hole: Formation and Surgical Closure”, European Association for Vision and Eye Research (EVER) Meeting, 2009 and published in *Acta Ophthalmologica*, vol 87, s244, September, 2009
- **Peddada R.**, “Successful treatment of wet age-related macular degeneration (AMD) with Avastin®: A retrospective observational study”, Abstracts of 8<sup>th</sup> Congress of European Society of Retina Specialists, Vienna, Austria, May, 2008.
- **Peddada R.**, “Switching to Ranibizumab From Intravitreal Bevacizumab With or Without Prior Photodynamic Therapy in Patients With Neovascular Age-Related Macular Degeneration: A Retrospective OCT Study” [ARVO Abstract], *Invest Ophthalmol Vis Sci*, 2007.
- **Peddada R.**, “Optimization of Photodynamic Therapy: Adjusting for Transit Time” [ARVO Abstract], *Invest Ophthalmol Vis Sci*, 2006.
- **Peddada, R.** and Linsenmeier, R.A., “Diminished Oxygen Diffusion to Outer Retina in the Presence of Drusen in Age-Related Macular Degeneration (AMD): Computational Model and Histopathologic Correlation”, *Invest Ophthalmol Vis Sci* 2005;Abstract 1215.
- **Peddada R** and Jampol L, “Paraneoplastic disease of retina: cancer associated retinopathy, melanoma associated retinopathy, and bilateral diffuse uveal melanocytic proliferation”, *To the Macula and Beyond*, Kugler Publications, The Hague, The Netherlands, pp. 95-105, 2005.
- **Peddada R** and Linsenmeier R, “Effect of diameter and thickness of drusen on oxygen transport to inner segments of photoreceptors: An axisymmetric computational model”, XVI International Congress of Eye Research, Sydney, Australia, August, 2004.
- **Peddada R**, Pakalnis VA, and Davis RM, “Constraining retina around the periphery alters the mechanical stress distribution in a shell model: Implications for Agerelated Macular Degeneration” [ARVO Abstract], *Invest Ophthalmol Vis Sci*, 2003.

- **Peddada R**, Davis, RM, and Pakalnis VA, “Age-related Macular Degeneration is Associated with Enhanced Stress in Bruch’s Membrane Secondary to Hyperopia, Hypertension, and Tobacco Smoking: A Hypothesis” [ARVO Abstract], *Invest Ophthalmol Vis Sci*, 2002.
- **Peddada R**, Steidl S, “How do Scleral Buckles Work? Analysis of Mechanics of Retinal Reattachment”, [ARVO Abstract], *Invest Ophthalmol Vis Sci*, 2001.
- Steidl S and **Peddada R**, “Retinal Patch Development: Adhesion Experiments”, [ARVO Abstract], *Invest Ophthalmol Vis Sci.*, 1999.
- Woo J, **Peddada R**, and Steidl S, “Optimal Material For a Retinal Patch. Part II: Evaluation of Potential Patch Materials”. [ARVO Abstract], *Invest Ophthalmol Vis Sci.*, 39(4): S104. Abstract nr. 485; 1998.
- **Peddada R**, Woo J, and Steidl S, “Optimal Material For a Retinal Patch. Part I: Retinal Response to Uniaxial Tension -- Experiments and Theoretical Simulation”, [ARVO Abstract], *Invest Ophthalmol Vis Sci.*, 39(4): S104. Abstract nr. 484; 1998.
- **Peddada R**, Woo J, and Steidl S, “Mechanical Properties For an Ideal Material For a Retinal Patch”, ESRF Proceedings, Miami, Florida; pp. 61, 1998.

#### Microcirculation and Capillary Flow

- Rifkind J, Abugo O, **Peddada R**, et al., “Maze Learning Impairment is Associated With Stress Hemopoiesis Induced by Chronic Treatment of Aged Rats With Human Recombinant Erythropoietin”, *Life Sciences*, **64** (4), pp. 237-247, 1999.
- **Peddada R** and Rifkind JM, “Shear modulus of elasticity of red cell membrane can be obtained from cell morphometry performed via retinal examination or a blood smear”, ESRF Proceedings, University of Miami, Miami, Florida; pp. 45, 1997.
- **Peddada R**, Abugo O, Kelly J, Rifkind J, “Effect of High Cholesterol Diet on Capillary Flow of erythrocytes. Part II: Mechanical properties”, *Clin. Hemorheol. Microcir*, **17**, pp. 445-457, 1997.
- Abugo O, **Peddada R**, Kelly J, Rifkind J, “Effect of High Cholesterol Diet on Capillary Flow of Erythrocytes. Part I: Geometric and Flow Characteristics”, *Clinical Hemorheology and Microcirculation*, **17**, pp. 437-443, 1997.
- **Rao PR**, Jones S, Sun Z, Hosmane, RS, Abugo, O, Rifkind, J, “Aspirin Analogues and Flow of Erythrocytes Through Narrow Capillaries”, *Clinical Hemorheology*, **15**, No. 6, pp. 877-887, 1995.
- **Rao PR**, “Effect of Electrostatic Force on Erythrocyte Deformation in Narrow Capillaries”, *Oxygen Transport to Tissue*, XVI, pp. 555-563, 1994.
- **Rao PR**, Puri V, Abugo O, Rifkind J, “Flow Characteristics of Erythrocytes Subjected to Prolonged Incubation in PBS”, *Oxygen Transport to Tissue*, XVI, pp. 547-553, 1994.
- **Rao PR**, Manchanda, R, “Role of Electrostatic Force in Capillary Flow: Relevance to Aspirin Adsorbed Erythrocytes”, Proceedings of 21st Annual Meeting of International Society of Oxygen Transport to Tissue, San Diego, CA, 1993.
- **Rao PR**, “Does Aspirin Enhance Erythrocyte Deformability?” *Proceedings of North American Society of Biorheology*, Rochester, October, 1991.
- Krogstadt DJ, Sutera SP, Boylan CW, Gluzman IY, Qian Z, **Rao PR**, “Intra-erythrocytic Parasites and Red Cell Deformability: *Plasmodium berghei* and *Babesia microti*“, *Blood Cells*, **17**, pp. 209-221, 1991.

- **Rao PR**, Seshadri V, “Analysis of Plasma-Skimming Effect in Microcirculation”, *Journal of the Institution of Engineers*, **64**, pp. 71-78, 1984.

#### Diagnostic Radiology

- **Peddada R**, Mergner W, Lilly M, White C, “MRI Studies Reveal Morphometric Deviations Accompany Aneurysms in Thoracic Aorta”, Proceedings of the 46th Annual Meeting of the Association of University Radiologists, New Orleans, Louisiana; pp. 56, 1998.

#### Biofluid Mechanics

- **Rao PR**, Zahalak GI, Sutera SP, “Large Deformations of Cylindrical Elastic Capsules in Shear Flows”, *J. of Fluid Mechanics*, **270**, pp. 73-90, 1994.
- **Rao PR**, von Kerczek CV, “Analysis of Rigid Pellets in Capillary Flow”, *Proceedings of American Society of Mechanical Engineering*, Charlottesville, July 1993.
- **Rao PR**, Zahalak GI, Sutera SP, “Apparent Viscosity of a Dilute Suspension of Fluid-Filled Viscoelastic Cylindrical Membranes Undergoing Large Deformations”, *Proceedings of American Society of Mechanical Engineering*, Dallas, November 1990.
- **Rao PR**, Zahalak GI, Sutera SP, “A Two-Dimensional Model for a Tank-Treading Erythrocyte”, *Proc. of 1st World Congress in Biomechanics*, San Diego, August, 1990.
- Zahalak GI, **Rao PR**, Sutera SP, “Large Deformations of a Cylindrical Liquidfilled Membrane by a Viscous Shear Flow”, *J. Fluid Mechanics*, **179**, pp. 283-305, 1987.
- Tran-Son-Tay R, Sutera SP, Zahalak GI, **Rao PR**, “Membrane Stress and Internal Pressure in a Red Blood Cell Freely Suspended in a Shear Flow”, *Biophys. J.*, **51**, pp. 915-924, 1987.
- Tran-Son-Tay R, Sutera SP, **Rao PR**, “Determination of Red Blood Cell Membrane Viscosity from Rheoscopic Observation of Tank-Treading Motion”, *Biophys. J.*, **46**, pp. 65-72, 1984.