

CURRICULUM VITAE

DEMOGRAPHIC INFORMATION

NAME: Sergio Barbero Briones
PLACE OF BIRTH: Madrid, SPAIN
DATE OF BIRTH: December 31, 1976
Email address: sergibarbero@yahoo.es

EDUCATION AND TRAINING

Education

1993/94-1995/96	First three years in Physics	University of Valladolid, Spain
1997/98-1998/99	BSc. Physics (speciality in Optics)	University of Zaragoza, Spain

Predoctoral training

1999-2004	Pre-Doctoral Fellow Vision and Physiological Optics	Instituto de Optica, Consejo Superior de Investigaciones Cientificas. Madrid, Spain
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Languages

English	First certificate in English
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Academic appointments

23/06/2003- 23/08/2003	Scientific stay	College of Optometry. University of Houston, Texas USA.
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Fellowships

01/11/1999- 31/10/2000	Fellowship of the Consejo Superior de Investigaciones Cientificas- Biomedicina Investigación y Tecnología S.L.
01/12/2000- 30/11/2001	Fellowship of the Consejo Superior de Investigaciones Cientificas- Carl Zeiss, S.A
01/12/2001- 31/01/2002	Fellowship funded by Carl Zeiss, S.A

01/02/2002- 31/01/2003	Fellowship of the Consejo Superior de Investigaciones Científicas- Bausch & Lomb, S.A
01/05/2002- 31/12/2003	Predoctoral Fellowship of the Spanish Ministry of Education and Science.
01/09/2002- 01/10/2003	Fellowship of Madrid's Council for accommodation and Living Expenses in "Residencia de Estudiantes"

Memberships

2000-	The Association for Research in Vision And Ophthalmology (ARVO)
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REPORT OF RESEARCH

Research Interests

Optics
Vision
Physiological optics
Ophthalmic Imaging
Optical design

Research Funding Information

2000-2002	CAM08.7/0010.1/2000 Quality of Vision after cataract surgery: evaluation in patients with intraocular lenses and new perspectives	Collaborator PI. Susana Marcos
2002	Carl Zeiss, Spain Research contract "Estimation of corneal aberrations from corneal topography"	Collaborator PI. Susana Marcos
2002-2005	BFM2002-02638. Spanish Ministry of Science & Technology "Role of ocular aberrations in the development and compensation of refractive errors"	Collaborator PI. Susana Marcos

BIBLIOGRAPHY

Original Refereed Publications

1. E. Moreno-Barriuso, J.M. Merayo-Llodes, S. Marcos, L. Llorente, R. Navarro, S. Barbero. "Ocular aberrations before and after corneal myopic refractive surgery: LASIK-induced changes measured with Laser Ray Tracing" *Investigative Ophthalmology and Visual Science*. 42, 1396-1403 (2001)
2. S. Marcos, S. Barbero, L. Llorente, J. Merayo-Llodes, "Optical response to myopic LASIK surgery from total and corneal aberrations". *Investigative Ophthalmology and Visual Science*, 42, 3349-3356 (2001)
3. S. Barbero, S. Marcos, J.M. Merayo-Llodes, and E. Moreno-Barriuso. "A validation of the calculation of corneal aberrations from videokeratography: a test on keratoconus eyes". *Journal of Refractive Surgery* 18, 263-270 (2002)
4. S. Barbero, S. Marcos, J.M. Merayo-Llodes. "Exploring total and corneal aberrations in an unilateral aphakic subject". *Journal of Cataract and Refractive Surgery* 28, 1594-1600 (2002)
5. C. Dorrnsoro, S. Barbero, L. Llorente & S. Marcos, "On-eye measurement of optical performance of Rigid Gas Permeable contact lenses based on ocular and corneal aberrometry". *Optometry and Vision Science* Feb;80(2), 115-25 (2003).
6. S. Barbero, S. Marcos & I. Jiménez-Alfaro, "Optical aberrations of intraocular lenses measured in vivo and in vitro". *Journal of the Optical Society of America A.*, Oct 20(10), 1841-1886 (2003).
7. S. Marcos, D. Cano & S. Barbero, "The increase of corneal asphericity after standard myopic LASIK surgery is not inherent to the Munnerlyn algorithm" *Journal of Refractive Surgery*, In press
8. D. Cano, S. Barbero & S. Marcos, "Computer application of laser ablation patterns on real corneas and comparison with surgical outcomes" *Journal of the Optical Society of America A*, In press.
9. L. Llorente, S. Barbero, J.M. Merayo-Llodes and S. Marcos, "Changes in total and corneal aberrations induced by LASIK surgery for hyperopia" *Journal of Refractive Surgery*, In Press
10. L. Llorente, S. Barbero, D. Cano, C. Dorrnsoro and S. Marcos, "Myopic versus hyperopic eyes: Axial length, corneal shape and optical aberrations." *Journal of Vision*, Submitted.

Book chapters

- 1 S. Marcos, S. Barbero, J.S. McLellan & S.A. Burns. "Optical Quality of the Eye and Aging". In *Custom Corneal Ablation: The quest for supervision*. In press

Original Published Proceedings

1. S.Marcos, E. Moreno-Barriuso, L. Llorente, R. Navarro, and S. Barbero "Do myopic eyes suffer from larger amount of aberrations?". Proceedings of the VIII International Conference on Myopia 8, 118-121, (2000)

Abstracts

1. S.Marcos, E. Moreno-Barriuso, L. Llorente, R.Navarro, and S. Barbero, "Do myopic eyes suffer from larger amount of aberration?". VIII International Conference on Myopia. (Oral communication).
2. R. Martín, E. Moreno-Barriuso, S. Marcos, L. Llorente, S. Barbero, J. Merayo-Lloves, R. Navarro, "Measurement of optical aberrations in keratoconus". European Symposium on Contact Lenses, (2000), Berlin, Germany (Poster)
3. J. Merayo-Lloves, E. Moreno-Barriuso, S.Marcos, , L. Llorente,S. Barbero, R. Martin, R.Navarro, "Estudio de la calidad óptica del ojo tras LASIK mediante trazado de rayos", 76 Congreso de la Sociedad Española de Oftalmología (2000), Madrid, España (Oral Communication)
4. E. Moreno-Barriuso, J.M. Merayo-Lloves, S. Marcos, L. Lorente, S. Barbero, R. Martín, R. Navarro."Evaluación de las aberraciones oculares en pacientes de cirugía refractiva por medio de trazado de rayos con láser", VI Reunión Nacional de Optica (2000), Medida del Campo, Valladolid, España (Poster)
5. S. Marcos, S. Barbero, E. Moreno-Barriuso, L. Llorente, J.M. Merayo-Lloves, R. Martin, "Total and corneal aberrations before and after standard LASIK surgery" Investigative Ophthalmology and Visual Science, (Suppl.).42, 118, (2001) Fort Lauderdale, Florida, USA.
6. S. Barbero, S.Marcos, R. Martín, L.Llorente, E. Moreno-Barriuso, J.M. Merayo-Lloves, "Validating the calculation of corneal aberrations from corneal topography: a test on keratoconus and aphakic eyes". Investigative Ophthalmology and Visual Science, (Suppl.) 42, 197, (2001) Fort Lauderdale, Florida, USA.
7. L. Llorente, S.Marcos, S. Barbero, R.Navarro, E. Moreno-Barriuso, "Ocular aberrations in infrared and visible light using a laser ray tracing technique". Investigative Ophthalmology and Visual Science, (Suppl.) 42, 87, (2001) Fort Lauderdale, Florida, USA.
8. R. Martín, J.M. Merayo-Lloves, G. Rodríguez, S. Marcos, S. Barbero, L. Llorente, R. Navarro,E. Moreno-Barriuso, "Relationship between defocus and astigmatism measured by Zernike coefficients and subjective refraction". Investigative Ophthalmology and Visual Science, (Suppl.).42, 133, (2001) Fort Lauderdale, Florida, USA

9. S. Marcos, S. Barbero, L. Llorente “Why high myopic eyes tend to be more aberrated” Technical Digest Optical Society of America Annual Meeting, 75 (2001) Long Beach, CA, USA (Oral communication).
10. S. Marcos, S. Barbero, L. Llorente, “The sources of optical aberrations in myopic eyes”. Investigative Ophthalmology and Visual Science, (Suppl.).43. (2002) Fort Lauderdale, Florida, USA.
11. L. Llorente, S. Marcos, S. Barbero, J. Merayo-Llotes. How total and corneal aberrations change with standard lasik surgery for hyperopia. Investigative Ophthalmology and Visual Science, (Suppl.).43.(2002) Fort Lauderdale, Florida, USA.
12. S. Barbero, S. Marcos and L. Llorente. Optical changes in corneal and internal optics with cararact surgery. Investigative Ophthalmology and Visual Science, (Suppl.).43. (2002) Fort Lauderdale, Florida, USA.
13. D. Cano, S. Marcos and S. Barbero. “Computer Simulations of Corneal Shape and Corneal Aberrations after Laser Correction: Do They Match Real Outcomes?”. Investigative Ophthalmology and Visual Science, (Suppl.).44, 318 (2003) Fort Lauderdale, Florida, USA.
14. C Dorrnsoro, D. Cano, S. Barbero , J. Merayo, Llorente, L and S. Marcos. “Understanding the Standard Algorithm for Corneal Refractive Surgery Using Laser Ablation of PMMA Surfaces”. Investigative Ophthalmology and Visual Science, (Suppl.).44, 348 (2003) Fort Lauderdale, Florida, USA.
15. C. Dorrnsoro, S. Barbero, L. Llorente, S. Marcos, “Aberration control with standard Rigid Gas Permeable contact lenses”, “Engineering the eye” CVS Symposium, Rochester NY, USA 2003 (poster)
16. S. Marcos, D. Cano & S. Barbero, “The increase of asphericity after myopic LASIK is not inherent to the Munnerlyn algorithm”. 4th International Congress of Wavefront Sensing and Aberration-free Refractive Correction. San Francisco, CA, USA, 2003
17. D. Cano, S. Barbero & S. Marcos, Computer simulations of corneal shape and corneal aberrations after laser correction: do they match real outcomes? Investigative Ophthalmology and Visual Science, (Suppl.).44. Fort Lauderdale, Florida, USA. 2003 (Comunicación oral)
18. Susana Marcos, Lourdes Llorente & Sergio Barbero. Optical biometry and aberrations in myopic versus hyperopic eyes. Mopane 2003. South Africa. (oral communication).
19. S. Marcos, S. Barbero, L. Llorente, C. Dorrnsoro, D. Cano, E. García de la Cera, J. Merayo, I.Jiménez Alfaro. Líneas de investigación de los laboratorios de biofotónica, óptica visual y biometría óptica del instituto de óptica (CSIC). VII Reunión Nacional de Optica (2003), Santander, España. (oral communication).
20. C. Dorrnsoro, E. García de la Cera, L. Llorente, S. Barbero & S. Marcos. Implementación de dos aberrómetros para aplicaciones biomédicas. VII Reunión Nacional de Optica (2003), Santander, España. (poster)
21. S. Marcos, S. Barbero, L. Llorente, C. Dorrnsoro, P.Rosales, Optical aberrations with aspheric intraocular lenses. Fall Vision Meeting-Optical Society of America Annual Meeting. Tucson, AZ 2003. (oral communication).
22. L. Llorente, S. Barbero, D. Cano, C. Dorrnsoro & S. Marcos. Axial length, corneal shape and optical aberrations in myopic versus hyperopic eyes. Fall Vision Meeting-Optical Society of America Annual Meeting. Tucson, AZ 2003. (oral communication).

23. S. Marcos, S. Barbero, L. Llorente, D. Cano & J.M. Merayo, Refractive Surgery and Optical aberrations. European Association for Vision and Eye Research (EVER) Annual Meeting, Alicante, España, 2003. (oral communication).

Teaching

1. 2nd Course of Pre- and Post- operative Optometry. Universidad de Valladolid, 1999
2. Course of Refractive Surgery and Quality of Vision (Visual Sciences Ph.D. Program, Universidad de Valladolid). Madrid, Spain 2001
3. 3rd Course of Pre- and Post- operative Optometry. Universidad de Valladolid, Spain, 2001
4. Course on "Optics of the eye" (Visual Sciences Ph.D. Program, Universidad de Valladolid). Valladolid, Spain 2001
5. Continuing Education for Optometrists. CIONE Madrid, Spain, 2001
6. Continuing Education for Optometrists. Zas Visión Valencia, Spain, 2002

Meetings attendance

1. International Symposium: Adaptive Optics: From Telescopes to the Human Eye. Murcia, Spain, November 13-14, 2000.
2. Association for Research in Vision and Ophthalmology (ARVO). Fort Lauderdale, Florida, USA. 2001 Annual Meeting.
3. Association for Research in Vision and Ophthalmology (ARVO). Fort Lauderdale, Florida, USA. 2002 Annual Meeting.
4. International Symposium: Adaptive Optics in Biomedicine. Santander 22,23 October 2002.