



CV

BARBARA KRZYSTYNA PIERSCIONEK

Education/qualifications

1983	B.Sc (Optom) University of Melbourne
1988	PhD (Biochemistry/Optics) University of Melbourne
2000	MBA, University of Bradford

Additional qualifications

2001	Post-Graduate Diploma in Law (LLB equivalent), Leeds Metropolitan University (LMU)
2003	Post-Graduate Diploma in Legal Practice, LMU
2004	LLM (<i>Electronic Communications and the law</i>) LMU

Experience, knowledge, skills/abilities

Academic/Analytical

Internationally acknowledged as a specialist in ocular ageing

Experienced in wide range of research methods, including laboratory techniques (biochemical, optical, clinical), statistical methods, questionnaire based study design

Qualified in a range of academic disciplines

Successful in obtaining research funding

Highly developed analytical, numerical and problem solving skills

Experienced in teaching and supervision of undergraduate and postgraduate students, post-doctoral and technical staff

Management/Organisational

Wide ranging experience in initiating and managing research programs in health-related disciplines on topics of national and international importance (ageing, vision loss)

Co-ordinator of multidisciplinary teams and collaborations with colleagues in national and international Centres of excellence

Has worked with commercial organisations

Organiser of public lectures, conferences and research for and public engagement activities.

Communication skills

Skilled public speaker: has been invited to give presentations to a wide range of audiences including business managers, scientists/academics, general public, schools

Excellent written and verbal communication skills

Substantial publication record in peer reviewed journals

Multi-lingual: fluent in Polish and knowledge of French to an advanced level (has delivered lectures in both Polish and French)

Employment History

2012-current

Associate Dean (Research and Enterprise) Kingston University London

Duties and Responsibilities:

- Developing and implementing Faculty Research and Enterprise strategies;
- Deputising for the Dean and PVC (Research) at internal and external committees and meetings;
- Working with the Faculty support staff, to ensure appropriate support for research and its administration;
- Leading four REF 2014 submissions: UoAs 3,11,15 and 17 for REF 2014
- Responsible for implementation of Open Access policy;
- Establishing interdisciplinary Research Centres;
- Project managing building of a new laboratory facility;
- Managing research grants, projects and collaborative programmes across the Faculty to increase both the quality and quantity of research;
- Promoting the Faculty to external bodies: national and international;
- Responsible for establishing Public Engagement activities;

- Developing enterprise activities and links with industries, funding and governmental bodies;
- Line managing of the Director of the Faculty Doctoral School, Head and Manager of Enterprise, Business Development Manager, Faculty Research Manager;
- Continuing to grow a personal research portfolio: publications, grant acquisition, supervision of post-doctoral researchers and postgraduate students;
- Chairing the Faculty Research and Enterprise Committee;
- Serving on University committees (Faculty Senior Management Committee; University Research and Enterprise Committee, Faculty Research Degrees Committee, Professorial and Senior staff appointment committees; Equality Committee);

2004-2012

Professor of Vision Science, University of Ulster

Duties and Responsibilities:

- Leading the Vision Science Group: managing and coordinating the group research contribution to the RAE 2008; representing the group at Institute Directorate Meetings, initiating new projects, planning future directions, dealing with budgetary aspects, mentoring junior staff;
- Growing a portfolio of multidisciplinary research incorporating physical, medical, biological and social sciences;
- Initiating, seeking funding for and managing research grants, projects and collaborative programmes in age-related themes;
- Supervision at post-graduate level;
- Teaching and supervision of undergraduates: design of 2nd year undergraduate module and coordination and teaching of Law, ethics and management; module co-ordination of 1st year undergraduate module on Optics and Optical Materials;
- Chairing the Human Tissue Working Group (2008-10); Vice-Chair of this committee from 2010;
- Serving on ethics committees (member of the University of Ulster Ethics Committee; Vice-Chair of Biomedical Sciences Filter Committee); serving on appointment committees
- Founding member of Science in Society

Reason for leaving:

Offered Associate Dean (Research and Enterprise) position at the University of Kingston

2000-2004

Senior Research Fellow, Biomedical Sciences, University of Bradford.

Duties and Responsibilities:

- Initiating projects in vision, ageing, optics, computational modelling;
- Obtaining funding for and managing research projects and collaborative programmes with research councils and industry,
- Writing papers, articles and reports,
- Presenting findings to international scientific and lay audiences,
- Teaching and supervision at post-graduate level;
- Serving on appointment committees
- Obtaining legal qualifications

Reason for leaving:

Offered a Chair at the University of Ulster

1997- 2000

Senior Lecturer, University of Bradford

Duties and Responsibilities:

- Design of 2nd year undergraduate module and teaching in Ageing and Low Vision
- Clinical teaching and demonstrating to 1st and 2nd year undergraduates in Optometry
- Co-ordinating 3rd year undergraduate research projects
- Supervision of postgraduate students
- Initiating, obtaining funding for and managing research grants and projects
- Writing papers for publication in refereed journals
- Presenting findings to the international scientific community
- Serving on appointment committees
- Undertaking and completing an MBA sponsored by the University of Bradford under the Investors in People program

Reason for leaving:

Offered a Senior Research post in acknowledgement of the amount of funding obtained

1996-1997

Research Fellow, Dept of Physiology, Medical Faculty, Monash University, Melbourne,

Australia

Duties and Responsibilities:

- Conducting research in vision and optics
- Writing papers for publication in refereed journals

- Presenting findings to international/national scientific and lay audiences
- Teaching visual perception and illusion and ocular motility to physiology/medical students
- Supervising at post-graduate level

Reason for leaving:

Head-hunted by University of Bradford to raise the research profile in the Department of Optometry

1992 -1996

National Health and Medical Research Council Fellow/Lecturer, Department of Electronic Engineering, La Trobe University, Melbourne, Australia

Duties and Responsibilities:

- Managing a collaborative research project in vision and optics
- Designing and overseeing construction of new instrumentation required for the project
- Writing papers for publication in refereed journals
- Presenting findings to international scientific and lay audiences
- Organising public lectures for the Australian Society of Medical Research
- Designing a new course on optical fibre measurements and techniques
- Teaching sensory physiology and autonomic and central nervous system physiology to 3rd year Biomedical Engineering students, eye movement and oculomotor control to 4th year Biomedical Engineering students, optics and optic fibre measurement and design to 3rd year Optical Engineering students
- Supervising at post-graduate level
- Serving on departmental committees dealing with management of teaching
- Serving as a member of the Vice-Chancellor's Research and Graduate Studies Committee
- Reserve member of Ombudsman's Committee

Reason for leaving:

Offered Research position at Monash University

1990-1992

Schultz Research Fellow at the National Vision Research Institute, Melbourne, Australia

Duties and Responsibilities:

- Identifying new areas of research in ageing
- Initiating projects and writing grant applications to obtain funding
- Writing papers for publication in refereed journals

- Presenting findings to international scientific and lay audiences
- Promoting the National Vision Research Institute through lectures, articles and in fund raising events

Reason for leaving:

Awarded NHMRC fellowship

1989-1990

Research Officer, Dept of Medicine, The University of Melbourne, Australia

Duties and Responsibilities:

- Conducting research on hyaluronic acid and arthritis in rabbit and sheep models using biochemical techniques and pharmacokinetics
- Overseeing and managing research assistants and technicians
- Writing papers for refereed journals
- Presenting findings to national and international scientific audiences

Reason for leaving:

Offered Schultz Fellowship at The National Vision Research Institute

1988-1989

Research Officer, Dept of Biochemistry, The University of Melbourne, Australia

Duties and Responsibilities:

- Conducting research on proteins in the human and animal eye lenses using biochemical techniques
- Writing papers for refereed journals
- Presenting findings to national and international scientific audiences

Reason for leaving:

Grant funding ended

Consultancy

Essilor International S.A. (Compagnie Generale d'Optique)

Gerson Lehrman Group's Council of Healthcare Advisors.

Post-graduate supervision/examination

1 Postgraduate Diploma student completed (University of Melbourne)

2 PhD students completed 2001(Universities of Bradford)

5 PhD students completed (University of Ulster)

1 MRes completed (Kingston University)

3 PhD students (currently at Kingston University)

Internal PhD examiner (Raphael Grech, 2013, Kingston University)

Internal PhD examiner (Reyhaneh Esmailbeiki, 2013, Kingston University)

External PhD examiner (Michael Frost 1999, University of Wales, Cardiff)

External PhD examiner (Nitin Sachdev 2004 University of New South Wales, Australia)

External PhD examiner (Matthew Sheehan 2012 National University of Ireland, Galway)

External PhD examiner (Serap Azizoglu 2013, La Trobe University, Australia)

University Committees

Research and Graduate Studies Committee (1993-1996) La Trobe University

Reserve member of Ombudsman's Committee (1994-1996) La Trobe University

Vice- Chair Biomedical Sciences Ethics Filter Committee (2006-2011) University of Ulster

Member of University of Ulster Ethics Committee (2006-2011) University of Ulster

Chair of Human Tissue Working Group (2007-2009) University of Ulster

Directorate member of the Biomedical Sciences Research Institute (2005-2011) Univ. Ulster

Executive Member of Recognised Research Group in Vision, representing the University of

Ulster (2006-2010) Research and Development Office Northern Ireland

Member of Research Governance (2008-2011) University of Ulster

Faculty Research and Enterprise Committee (Chair) (2012-) Kingston University

University Research and Enterprise Committee (2012-) Kingston University

Faculty Senior Management Group (2012-) Kingston University

International Academic Recognition

Membership of Editorial Boards and International Committees

Journal of Biomedical Optics- Editorial Board Member (1995 -2015)

Journal of Biomedical Optics- Special Section Editor (July 1996 edition)

Elected Core Member of Women in Optics (2004-2005)

Current Analytical Chemistry- Editorial Board Member (2005-)

The Open Optics Journal - Editorial Board Member (2007-)

The Open Medical Imaging Journal- Editorial Board Member (2007-)

BMC Research Notes- Associate Editor for sections Biochemistry, Bioinformatics, Biotechnology, Cell Biology, Medical Ethics, Medical Imaging, Medical Physics, Ophthalmology, Physiology (2010-)

Journal of Integrated Omics - Associate Editor (2010-)

Reviews in Nanoscience and Nanotechnology- Associate Editor (2010-)

Conference Organization and Chairing

Session Chair at the 4th Scientific Meeting of Optometry, New Zealand (1991).

Session Organiser and Chair for XI International Congress of Eye Research, New Delhi, India (1994).

On organising committee of International Ophthalmometry/Optomety Conference, Kazimierz Dolny, Poland (1997).

Session Organiser and Chair for XVI International Congress of Eye Research, Sydney, Australia (2004).

Chair at Eyecare 3000 conference, Belfast, (2007)

Grant Assessment and Journal Reviewing

Member of the National Health and Medical Research Council Panel of Assessors (Australia)

Referee for the Health Research Council of New Zealand

Reviewer of Australian Research Council (A.R.C.) grants

Member of EPSRC peer review college

Reviewer of EPSRC and Wellcome Trust grants

Reviewer for numerous journals: Biophysical Journal, Clinical and Experimental Optometry,

Clinical and Experimental Pharmacology and Physiology, Experimental Eye Research, Journal of Biomedical Optics, Journal of the Optical Society of America A, Journal of Modern Optics, Ophthalmic and Physiological Optics, Optics Letters, Vision Research, Health Economics, New England Journal of Medicine.

Professional membership

Association of MBA's (member since 2000)

Solicitors Regulation Authority England and Wales (student member 2001-2010)

Scholarships and Awards

State Debating Champion (State of Victoria, Australia) 1977

Doctoral scholarship from the Pank Ophthalmic Trust 1983-87

Dawson Bursary, University of Melbourne 1983-84.

1st prize for the Australian division in the Essilor International competition (1989) (awarded for the best piece of research on ageing of the eye lens).

Australian Research Council Fellowship (1991) (not accepted as this was awarded in the same year as the NHMRC fellowship)

R.D.Wright Fellowship (National Health & Medical Research Council) (1991-1995)

Public Engagement

- Member of the Australian Society for Medical Research, serving on the School's Committee to promote science and research to secondary schools (1992-1995)
- Founding member of Australian Science Communicators established by academics and journalists to promote awareness of science and technology to the public
- Member of organising committee of the Fourth International Conference on the Public Communication of Science and Technology, Melbourne, Australia (1996)
- Founding member of Science in Society at the University of Ulster
- Established Café Scientifique at Kingston University

External Activities/Community work

- Candidate for Local Government (1996) (Whitehorse Council, Victoria, Australia)
- Governor of Usher Street Primary School, Bradford West Yorkshire (2003-2004)
- Justice of Peace, Bradford Magistrates Court (2004-2008)

Public Appointments

- Member of the Independent Scientific Advisory Board for the MHRA (Medicines and Healthcare products Regulatory Agency) (2009-2012)
- Employment Tribunal Member (Ministry of Justice) (2010- current)
- Science Adviser , Safer Medicines Trust (2011- current)

Interests

Classical music, art, opera and theatre, travel, writing, promotion of learning and science
Friend of the Royal Academy of Arts

APPENDIX

Grants and funding

Research Council and EU funded grants

1. R.D.Wright Fellowship (National Health and Medical Research Council) \$254,000AUD (1992-5) (sole investigator: B.K.Pierscionek)
2. National Health and Medical Research Council, project no. 921049. Factors contributing to accommodation \$69,500AUD (1992-4) .(PI: B.K.Pierscionek; co investigator R.C.Augusteyn, University of Melbourne)
3. National Health and Medical Research Council, project no.960323. The refractive index of the eye lens: its role in function and its relation to structure. \$60,055.82AUD (1996-7) (sole investigator: B.K.Pierscionek)
4. Engineering and Physical Sciences Research Council, grant reference no. GR/M46310. Dynamical optical properties of the eye lens. £116,000 (1999-2002) (sole investigator: B.K.Pierscionek)
5. Engineering and Physical Sciences Research Council, grant reference no. GR/M62679 DN170. Imaging Methods for producing Accurate, clinically-based Cataract Simulations (IMACS) £158,499 (1999-2001) (PI B.K.Pierscionek; co-investigator: R. Green, University of Warwick)
6. EU funded AAL programme BREATHE Ambient Assisted Living £246,000 (2013-2016) (Investigators from Kingston University: PI: Remagnino co-investigators: Pierscionek Chambers)
7. EU funded WELCOME 8,272,080 Euros; 631,351 Euros to Kingston University (2013-2016) (Investigators from Kingston University: Pierscionek, Philip, Kayyali, Nabhani)
8. EU funded Horizon 2020 ICT-2014-1 AEGLE 5,230,701 Euro; 718,000 Euro to Kingston University (2014-2018) (Investigators from Kingston University: PI Pierscionek, co-investigators: Philip, Kayyali, Nabhani)

9. TSB funded CR&D proposal OPTIMAL-Optimisation of discharge mechanism for the prevention of unnecessary readmissions £196,778.63 (2015-2018) (PI Kayyali , co-investigators: Pierscionek, Nabhani)

Industrial Funding

1. Essilor equipment grant. 20,000FF (1995) (B K Pierscionek, sole investigator)
2. Essilor equipment grant. \$35,880AUD (1996) (B K Pierscionek, sole investigator)
3. Essilor equipment/project grant: Fluorescence and scatter in the eye lens. \$10,800 AUD (1997) (B K Pierscionek, sole investigator)
4. Essilor equipment grant: Corneal birefringence £2,900 (1998) (B K Pierscionek, sole investigator)
5. Essilor International grant: Factors influencing the rate of development of presbyopia. £20,000 (2002-2004) (B K Pierscionek, sole investigator)
6. Essilor International grant: Modelling of lens function using Finite Element Analysis 69,000 Euro (2005-2006) (B K Pierscionek, sole investigator)
7. Essilor International grant: Improving motion perception and velocity discrimination in older individuals: the effect of polarising filters £70,596 (2013-2014) (PI: B K Pierscionek, co-investigator; J Lauritzen)

Grants from Charities, British Council, Royal Society

1. Clive and Vera Ramaciotti Foundation, Grant-in aid A2440. Structure-function relationship in the eye lens . \$8,000AUD (1993) B K Pierscionek Sole Investigator
2. Clive and Vera Ramaciotti Foundation and Welcome Trust Travel grant. \$2000AUD & £150 (1994) (B K Pierscionek sole investigator)
3. British-Polish Joint Research Collaboration Programme British Council/KBN Optics of the human cornea:development of a new method of diagnostic assessment. £2500-£3000 (part in Polish currency) (1999-2001) (B K Pierscionek sole investigator)
4. Grant for PhD studentship from Royal National Institute for the Blind: Presbyopia: distribution and finite element analysis of process £17,000 (2000-2002)
5. Royal Society International Short Visit for Professor Yasseen from Kufa University,

Iraq £3,970 (2006) (B K Pierscionek sole investigator)

6. Fight for Sight: The contribution of refractive index to optical quality of the eye : age-adjusted gradient index eye models for novel implant design £164,947 (2013-2016)
(PI: B K Pierscionek, co-investigator; JW Regini, Cardiff University)

Other funding

1. Vice-Chancellor's special grant (University of Bradford) £17,000 Visual and perceptual development (1999-2000)
2. DEL funded PhD studentship: Protein distribution patterns in the eye lens. £52,000 (2006-2009).
3. DEL funded PhD studentship: LASER: Outcomes of refractive surgery £52,000 (2007-2010)
4. DEL funded PhD studentship: Iris recognition systems £52,000 (2008-2011)
5. Ulster Foundation grant: Sports Vision: swimming enhancement £30,000 (2008-2009)
6. Institute of International Education; Scholars Rescue Fund: Nanotechnology and the eye: \$31,700 (2008-2009)
7. CARA: Council for Academic Refugee Assistance: support for Iraqi scholar: £6000 (2008)
8. Institute of International Education; Scholars Rescue Fund: Nanotechnology and the eye \$27,000 (2009-2010)
9. Western Health and Social Care Trust (Northern Ireland). Investigation of non-enzymatic glycation in diabetic and non-diabetic eye lenses. £11,800 (2010-2011)
10. Dstl (MOD): Development of Respirator Misting (Human Vision) System £30,000 (2012)

PI: B K Pierscionek, co-investigator: J Lauritzen)

11. UKIERI Link with Central Glass and Ceramic Institute, Kolkata, India £40 533 (2015-16)

PI.A. Augousti, co-investigators B K Pierscionek and N Philip

Publications

1. Pierscionek, B.: The influence of eye movement on the perceived stability of the environment. Australian Journal of Optometry, 66(3), 104-110 (1983).
2. Augusteyn, R.C., Boyd, A., Pierscionek-Balcerzak, B., and Thomson, J.: Ageing studied in single lenses. Atti della Fondazione Giorgio Ronchi, XL, 495-502 (1985).
3. Pierscionek-Balcerzak, B. and Augusteyn, R.C.: A new method for studying protein changes in the human lens during ageing and cataract formation. Australian Journal of Optometry, 68(2), 49-53 (1985).
4. Pierscionek, B., Smith, G. and Augusteyn, R.C.: The refractive increments of bovine α -, β - and γ -crystallins. Vision Research 27, 1539-1541 (1987).
5. Pierscionek, B. and Augusteyn, R.C.: Protein distribution patterns in concentric layers from single bovine lenses: changes with development and ageing. Current Eye Research, 7, 11-23 (1988).
6. Chan, D.Y.C., Ennis, J., Pierscionek, B and Smith, G.: Determination and modelling of the 3-D gradient refractive indices in crystalline lenses. Appl. Optics, 27, 926-931 (1988).
7. Pierscionek, B.K., Chan, D.Y.C., Ennis, J.P., Smith, G. and Augusteyn, R.C.: A non-destructive method of constructing three-dimensional gradient index models for crystalline lenses: I. Theory and Experiment. Am. J. of Optom. and Physiol. Optics, 65, 481-491 (1988).
8. Pierscionek, B.K.: Growth and ageing effects on the refractive index gradient in the equatorial plane of the bovine lens. Vision Research 29, 1759-1766 (1989).
9. Pierscionek, B.K. and Chan, D.Y.C.: The refractive index gradient of the human lens. Optometry and Vision Science 66, 822-829 (1989).

10. Pierscionek, B.K.: Presbyopia and the effect of refractive index. Clinical and Experimental Optometry 73, 26-36 (1990).
11. Pierscionek, B.K.: A method for splitting low power laser beams. Appl. Optics 29, 1406 (1990).
12. Pierscionek, B.K. and Augusteyn, R.C.: Structure/function relationship between optics and biochemistry of the eye lens. Lens and Eye Toxicology Research 8, 229-243 (1991).
13. Smith, G., Pierscionek, B.K. and Atchison, D.: The optical modelling of the human lens. Ophthalmic and Physiological Optics 11, 359-371 (1991).
14. Pierscionek, B.K. and Augusteyn, R.C.: Shapes and dimensions of in vitro human lenses. Clinical and Experimental Optometry 74, 223-229 (1991).
15. Pierscionek, B.K. and Augusteyn, R.C.: Growth related changes to functional parameters in the bovine lens. Biochim. Biophys. Acta 1116, 283-290 (1992).
16. Smith, G., Atchison, D.A. and Pierscionek, B.K.: Modelling the ageing human eye
J. Opt. Soc. Am. A 9, 2111-2117 (1992).
17. Pierscionek, B.K.: An explanation of isogyre formation by the eye lens.
Ophthalmic and Physiological Optics 13, 91-94 (1993).
18. Pierscionek, B.K. and Chan, D.Y.C.: A mathematical description of isogyre formation in refracting structures. Ophthalmic and Physiological Optics 13, 212-216 (1993).

19. Pierscionek, B.K. and Augusteyn, R.C.: Species variability in optical parameters of the eye lens. Clinical & Experimental Optometry 76, 22-25 (1993).
20. Fraser, J.R.E., Kimpton, W.G., Pierscionek, B.K. and Cahill, R.N.P.: The kinetics of hyaluronan in normal and acutely inflamed synovial joints: observations with experimental arthritis in sheep. Seminars in Arthritis and Rheumatism 22, 9-18 (1993).
21. Pierscionek, B.K.: What we know and understand about presbyopia. Clinical & Experimental Optometry 76, 83-91 (1993).
22. Pierscionek, B.K.: Surface refractive index of the eye lens determined with an optic fibre sensor. J. Opt. Soc. Am. A 10, 1867-1871(1993).
23. Pierscionek, B.K.: In vitro alteration of human lens curvatures by radial stretching. Exp. Eye Res. 57, 629-637 (1993).
24. Pierscionek, B.K.: Refractive index of the human lens surface measured with an optic fibre sensor. Ophthalmic Res. 26, 32-36 (1994).
25. Pierscionek, B.K.: Refractive index of decapsulated bovine lens surfaces measured with a reflectometric sensor. Vision Research 34, 1927-1933 (1994).
26. Pierscionek, B.K.: Isochromatics in eye lenses. Exp. Eye Res. 59, 121-125 (1994).
27. Pierscionek, B.K. and Weale, R.A.: Presbyopia- a maverick of human ageing. Arch. Gerontol. and Geriatrics 20, 229-240 (1995).

28. Pierscionek, B.K.: Variations in refractive index and absorbance of 670nm light with age and cataract formation in human lenses. Exp. Eye Res. 60, 407-414 (1995).
29. Pierscionek, B.K.: Age-related response of human lenses to stretching forces. Exp. Eye Res. 60, 325-332 (1995).
30. Pierscionek, B.K. and Weale, R.A.: Polarising light biomicroscopy and the relation between visual acuity and cataract. Eye 9, 304-308 (1995).
31. Pierscionek, B.K. and Weale, R.A.: The optics of the eye lens and lenticular senescence- a review. Documenta Ophthalmologica 89, 321-335 (1995).
32. Pierscionek, B.K.: The refractive index along the optic axis of the bovine lens. Eye 9, 776-782 (1995).
33. Pierscionek, B.K. and Augusteyn, R.C.: Refractive index and protein distributions in the blue eye trevally lens. J. Am. Optom. Assoc. 66, 739-743 (1995).
34. Pierscionek, B.K. and Weale, R.A.: The relative prevalence of different types of cataract: ethnicity and environment. Ophthal. Res. 28, 88-92 (1996).
35. Pierscionek, B.K. and Reytomas, R. : Light intensity distributions in refracting structures placed between crossed polarizers. Exp. Eye Res. 62, 573-581 (1996).
36. Pierscionek, B.K.: Aging changes in the optical elements of the eye. J. Biomed. Optics 1, 147-156 (1996).

37. Pierscionek, B.K. and Weale, R.A.: Risk factors and ocular senescence. Gerontology 42, 257-269 (1996).
38. Pierscionek, B.K. and Weale, R.A.: Is there a link between corneal structure and the corneal cross. Eye 11, 361-364 (1997).
39. Pierscionek, B.K. and Weale, R.A.: Lenticular scattered and fluorescent light: Biomicroscopic determination of their relative proportions. Exp. Eye Res. 64, 189-194 (1997).
40. Pierscionek, B.K. and Lekner, J.: Polarization patterns in refracting structures. J. Opt. Soc. Am. A. 14, 676-681 (1997).
41. Pierscionek, B.K.: Refractive index contours in the human lens. Exp. Eye Res. 64, 887-893 (1997).
42. Smith, G. and Pierscionek, B.K.: The optical structure of the lens and its contribution to the refractive status of the eye. Ophthalmic and Physiological Optics 18, 21-29 (1998).
43. Pierscionek, B.K. and Weale, R.A.: Age-related cataract and place of birth. Eye 12, 363-366 (1998).
44. Pierscionek, B.K. and Weale, R.A.: An investigation of the polarization optics of the living human cornea and lens using Purkinje images. Appl. Optics 37, 6845-6851 (1998).
45. Pierscionek, B.K. and Weale, R.A.: A logistics evaluation of visual acuity as applied to

- the Bailey-Lovie chart. Ophthal. Physiol. Optics 19, 507-511. (1999)
46. Pierscionek, B.K.: Presbyopia- the whens, whys and wherefores.... Ophthal. Physiol. Optics 20, 255-275 (2000)
47. Hamad, F., Pierscionek, B.K. and Bruun, H.H.: A dual optical probe for volume fraction, drop velocity and drop size measurements in liquid-liquid two-phase flow. Meas. Sci. Technol. 11 1-13 (2000)
48. Hamad, F.A., Khan, M.K., Pierscionek, B.K. and Bruun, H.H.: Comparison of Experimental results and numerical predictions of drop diameter from a single submerged nozzle in a liquid-liquid system. The Canadian Journal of Chemical Engineering, 79, 322-328 (2001)
49. Pierscionek, B.K., Popiolek-Masajada, A. and Kasprzak, H.: Corneal shape change during accommodation. Eye 15, 766-769 (2001)
50. Pierscionek, B.K., Green, R. and Dolgobrodov, S.: Intraocular light scatter as modelled through a stratified medium . Applied Optics, 40 (34) pp. 6340-6348 (2001)
51. Maddah, S.R., Gough, T., Pierscionek, B. and Bruun, H.H.: Investigation of Slat Heel effect on the flow field over multi-element aerofoils. Experimental Thermal and Fluid Sciences, 25, 651-658 (2002)
52. Kasprzak, H. and Pierscionek, B.K.: Modelling the gravitational sag of the cornea and the subsequent quality of the refracted image. Journal of Modern Optics 49, 2153-2166 (2002)

53. Pierscionek, B.K., Green, R. and Dolgobrodov, S.: Retinal images seen through a cataractous lens modelled as a phase aberrating screen. J. Opt Soc. Am. A 19, 1491-1500 (2002)
54. Pierscionek, B.K. Belaidi, A. and Bruun, H.H.: Optical Development in the foetal bovine lens. Experimental Eye Research 77, 639-641 (2003)
55. Siedlecki, D. Kasprzak, H and Pierscionek, B.K.: Schematic eye with a gradient-index lens and aspheric surfaces. Optics Letters, 29, 1197-1199 (2004).
56. Pierscionek, B.K., Belaidi, A. and Bruun, H.H.: Refractive index gradient in the porcine lens for 532 and 633 nm light. Eye, 19, 375-381 (2005) www.nature.com/eye
57. Gilchrist, J.M., Pierscionek, B.K. and Mann, W.M.: Use of the Hermann grid illusion in the measurement of contrast perception in dyslexia. Vision Research , 45, 1-8 (2005)
58. Kwok, L.S. and Pierscionek, B.K.: Orthokeratology: Contact lenses for myopic children: Wolf in sheep's clothing? Clinical and Experimental Ophthalmology, 33, 343-347 (2005)
59. Pierscionek, B.K.: Opponent theories of accommodation reconciled? Investigative Ophthalmology and Visual Science www.iovs.org/cgi/eletters/45/8/2691 (2005)
60. Pierscionek, B.K. and Green, R.J.: Measurement of corneal surface refractive index. Proceedings of SPIE, vol 5826, 500-511. (2005)
61. Evanger, K., Haugen, O.H., Aanderud, L., Thorsen, E., Pierscionek, B.K.: Hypermetropia succeeded myopia after hyperbaric oxygen therapy. Optometry & Vision Science 83, 195-198 (2006)

62. Asejczyk-Widlicka, M., Śródka D.W., Kasprzak H. and Pierscionek, B.K.: Modelling the elastic properties of the anterior eye and their contribution to maintenance of image quality: the role of the limbus. Eye 1-8 (2006)
<http://www.nature.com/eye/journal/vaop/ncurrent/pdf/6702464a.pdf>
63. Schachar, R., Pierscionek, B., Abolmaali, A. and Le T.: The relationship between accommodative amplitude and the ratio of central lens thickness to its equatorial diameter in vertebrate eyes. British Journal of Ophthalmology (2006 online) doi:10.1136/bjo.2006.107524 91, 812-817 (2007)
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65. Pierscionek, B.K., Asejczyk-Widlicka, M. and Schachar, R. The effect of changing intraocular pressure on the corneal and scleral curvatures in the fresh porcine eye. British Journal of Ophthalmology 91, 801-803 (2007)
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Letters to the Editor/Correspondence articles

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2. Archibald, K., Baxter, A.D., Berube, K., Bunton, D., Clotworthy, M., Coleman, B., Foster, C., Hillier, C., McFarlane, M., Patel, A., Pierscionek, B., Root, J., Thomas, G., Tsaion, K., Wilkinson, M., Wilmut, I. and Wright, K. Safety of medicine and the use of animals in research The Lancet, 378 e2 (2011)

Encyclopaedia article

Bruun, H.H., Hamad, F. and Pierscionek, B.K.: Two-phase flow

McGraw-Hill Encyclopaedia of Science and Technology. 9th Edition, 2001. Article ID: 757752

Book Chapters

Pierscionek, B.K.: Species variations in the refractive index of the eye lens and patterns of change with ageing (2005): In: Focus on Eye Research, Ioseliani, O.R. (ed) Nova Science publishers Inc, p 117-132

Pierscionek, B.K.: Gradient index of refraction (GRIN) profiling of the eye lens. Chapter 19 vol III, Handbook of Optics, (Bass, M., Enoch, J., Mahajan, V.N., DeCustatis, Lakshminarayanan, V. (eds)) McGraw-Hill, New York (2010), 19.1-19.18, ISBN: 9780071498913

Pierscionek, B.K.: Structure and physiology of the eye lens. In: Presbyopia (Pallikaris, I. Charman, N and Plainis S. (eds)) Slack Incorporated Thorofare NJ (2011).

Book

Pierscionek, B.K.: Law and ethics for the eye-care professional. Elsevier (2008)

Abstracts published in journals or major conference proceedings

(* spoken presentation delivered by B.K.P.)

- 1.* Pierscionek, B.: The protein distribution within the crystalline lens. Proceedings of the 54th ANZAAS Congress Canberra, Australia, 34 (1984).
2. Augusteyn, R.C., Hanna, U. and Pierscionek-Balcerzak, B.: Assessment of Lens Ageing. Proceedings of 7th International Society for Eye Research, Nagoya, Japan, 131 (1986).
3. Pierscionek, B., Zhang, Z.W., Chan, D. and Augusteyn, R.C.:The contribution of growth and protein distributions to the optical properties of human and bovine lenses. Proceedings of 8th International Society for Eye Research San Francisco, USA, 129 (1988).
4. Siefert, R., Morton, C., Pierscionek, B., Vassett, P. and Augusteyn, R.C.: Properties of low molecular weight proteins of the lens. Proceedings of 8th International Society for Eye Research San Francisco, USA, 98 (1988).
5. Chan, D.Y.C., Pierscionek, B.K. and Augusteyn, R.C. : Non-destructive determination of refractive index gradients and protein concentrations in bovine and human lenses. Proceedings of 8th International Society for Eye Research S. Francisco, USA, 45 (1988).
- 6.* Pierscionek, B.K. and Augusteyn, R.C.: Age-related changes in the protein distributions and refractive index gradients in bovine and human lenses. Proceedings of the 9th International Society for Eye Research Helsinki, Finland, 36 (1990).
7. Fraser, J.R.E., Brown, T.J., Kimpton, W.G., Laurent, U.B.G. and Pierscionek, B.K.: The kinetics of synovial hyaluronan (hyaluronic acid; HA) in normal and acutely inflamed joints. Proceedings of the Australian Rheumatic Association Perth, W.A. (1991).
- 8.* Pierscionek, B.K.: The refractive index gradient in accommodation and presbyopia. Proceedings from the 4th Scientific meeting in Optometry, Auckland, New Zealand in Clinical and Experimental Optometry, 74, 216 (1991).
- 9.* Pierscionek, B.K.: The effect of the refractive index gradient in accommodation. Proceedings of the 10th International Society for Eye Research Stresa, Italy, 580 (1992).

10. *Pierscionek, B.K.: Surface refractive index of the eye lens determined with a reflectometric sensor. Proceedings from the 5th Scientific meeting in Optometry, Melbourne, Australia Clinical and Experimental Optometry 76, 185 (1993).
11. *Pierscionek, B.K.: The refractive index of the bovine lens surface. Proceedings of the 34th Annual Meeting of the Association for Eye Research Granada, Spain, 72 (1993)
12. *Pierscionek, B.K.: A technique for surface index measurement. Clinical and Experimental Optometry, 76, 69 (1993).
13. *Pierscionek, B.K.: Refraction as an explanation for the extinction pattern in the eye lens. Australian Conference on Eye Research, Melbourne, Australia Clinical and Experimental Optometry, 77, 282 (1994).
14. Reytomas, R. and Pierscionek, B.K.: Computer simulation of images seen through a cataractous lens. Australian Conference on Eye Research, Melbourne, Australia Clinical and Experimental Optometry, 77, 282 (1994).
15. *Pierscionek, B.K.: Eye movement systems: features and anomalies. American Academy of Optometry Continuing Education Course Program Book, Amsterdam, The Netherlands, (1994).
16. *Pierscionek, B.K.: Refractive index gradients determined by reflectometric sensing. Proceedings of the 11th International Society for Eye Research, New Delhi, India, 436 (1994).
17. *Pierscionek, B.K.: An alternative explanation for isogyre formation in the eye lens. Joint European Research Meeting in Ophthalmology and Vision. Montpellier, France, 136 (1994).
18. *Pierscionek, B.K.: Accommodation, ageing of the crystalline and presbyopia. Proceedings of the 5th International Symposium on Presbyopia. Opio, France, 109-112 (1995).
19. *Pierscionek, B.K. and Weale, R.A.: Polarizing light biomicroscopy. Joint European Research Meeting in Ophthalmology and Vision. Montpellier France, Vision Research,

- 35 (supplement), abstract no. 1343, p.73 (1995).
20. *Pierscionek, B.K and Weale, R.A.: Distinguishing scatter from fluorescence in the eye lens. Proceedings of the 12th International Society for Eye Research conference. Yokohama, Japan, S.38 (1996).
 21. Reytomas, R. and Pierscionek, B.K.:Light scatter in in vitro lenses determined using an optical fibre probe. Proceedings of the 12th International Society for Eye Research conference. Yokohama, Japan, S.59 (1996).
 22. *Pierscionek, B.K. and Weale R.A.: Ethnicity, environment and senile cataract type. Joint European Research Meeting in Ophthalmology and Vision. Montpellier France, Vision Research, 36 (supplement), abstract no. 3222, p.S130 (1996).
 23. *Pierscionek. B.K.: Reviewing the optics of the lens and presbyopia Proceedings of SPIE-The International Society for Optical Engineering. Ophthalmic Measurements and Optometry, 3579, 34-39 (1997).
 24. *Pierscionek, B.K. and Weale, R.A.: On the nature of the corneal cross. Joint European Research Meeting in Ophthalmology and Vision. Montpellier France, Ophthalmic Research, 29 (supplement 1), abstract no. 1423, p.104 (1997)
 25. *Pierscionek, B.K.: Distribution of blue-green fluorophors in the human lens. Proceedings of the 13th International Society for Eye Research conference. Paris, France,S180 (1998).
 - 26.* Pierscionek, B.K.: The riddle of the lens. 6th Varilux Presbyopia Forum www.presbyopia.org (2000)
 27. Popiolek-Masajada, A., Pierscionek, B.K. and Kasprzak, H.: Corneal shape and accommodation Proc. SPIE, 4356 (2000), 364-366.
 28. Pierscionek, B.K., Belaidi, A. and Bruun, H.H.: Refractive index distribution in the foetal bovine lens. 15th International Society for Eye Research conference. Geneva, Switzerland, p. 32 (2002).
 29. Pierscionek, B.K., Dogobrodov, S., Green, R.J. and Belaidi, H.: Image degradation produced by the cataractous lens modelled as a phase aberrating medium. 15th

- International Society for Eye Research conference. Geneva, Switzerland, p. 32 (2002).
30. Anwar,S., Pierscionek, B., Bruun, H. and Giraudet, G.: Factors affecting the rate and progression of presbyopia. 16th International Society for Eye Research conference. Sydney, Australia, p. 53 (2004).
 31. Siedlecki, D., Kasprzak, H. and Pierscionek, B.K.: Dynamic changes of corneal topography and its influence on visual performance. 16th International Society for Eye Research conference, Sydney, Australia, p. 86 (2004).
 32. Siedlecki, D., Kasprzak, H. and Pierscionek, B.K: Dynamic changes of corneal topography and its influence on psf of the eye. II EOS Topical meeting on Physiological Optics, Granada, Spain p. 33 (2004).
 33. Keenan, J., Orr, D.F. and Pierscionek, B.K.: Crystallin distribution patterns in porcine eye lenses. Association for Research in Vision and Ophthalmology, Annual Meeting, 4092 A23 (2008).
 34. Siedlecki, D. and Pierscionek, B.K.: The idea of a gradient index intraocular lens (IOL). Ophthalmic and Physiological Optics, p. 101, (2008)
 35. Pierscionek, BK., Crawford, S. and Scotney, B. Iris recognition and ocular biometrics – the salient features. The 12th International Machine Vision and Image Processing Conference (IMVIP), Port Rush, p. 170-175, Sept (2008)
 36. Rankin, D., Scotney, B. Morrow, P., McDowell, R. and Pierscionek, B. Comparing and Improving Algorithms for Iris Recognition. The 13th International Machine Vision and Image Processing Conference (IMVIP), Dublin, p, 99-104 , Sept (2009)

Presentations

Invited International Presentations/Plenary/keynote lectures

1. The relationship between structure and function in the crystalline lens.
(4 lectures) September, (1988).
School of Optometry, Waterloo, Canada;
School of Optometry, Columbus, Ohio, USA;

National Eye Institute, National Institutes of Health Bethesda, Maryland, USA.

Alcon laboratories, Forth Worth, Texas, USA.

2. Age-related changes in the protein distributions and refractive index gradients in bovine and human lenses. 9th International Society for Eye Research conference. Helsinki, Finland, (1990).
3. Optics and biochemistry of the lens. Symposium on Biochemistry and Biophysics of the lens. Bydgoszcz, Poland (1990).
4. The effect of the refractive index gradient in accommodation. 10th International Society for Eye Research conference. Stresa, Italy (1992).
5. Refractive index gradients determined by reflectometric sensing. 11th International Society for Eye Research conference. New Delhi, India (1994).
6. Presbyopia - konsekwencja wzrostu oraz starzenia delivered in Polish. II Swiatowy Kongres Polonii Medycznej (2nd World Congress of Medical Polonia) (Keynote lecture) Czestochowa, Poland (1995).
7. Accommodation, lens ageing and presbyopia. (Plenary lecture) Essilor Symposium International de la Presbytie. Opio, France (1995).
8. Age-related decline in eye lens function. III European Congress of Gerontology, Amsterdam, The Netherlands (1995).
9. Distinguishing scatter from fluorescence in the eye lens. 12th International

Society for Eye Research conference. Yokohama, Japan (1996).

10. Reviewing the optics of the lens and presbyopia.(Plenary lecture) International Ophthalmometry/ Optometry meeting, Kazimierz Dolny, Poland (1997).
11. Distribution of blue-green fluorophors in the human lens. 13th International Society for Eye Research Conference. Paris, France (1998).
12. The riddle of the lens. (Plenary lecture) 6th Presbyopia Varilux Forum, Faro, Portugal (2000)
13. The paradox of the eye lens. (Plenary lecture) SPIE Student Chapter Wroclaw, Poland (2008)
14. Modelling material properties of the lens and views on the theories of Presbyopia. (Plenary lecture) International Society of Presbyopia conference. Berlin, Germany, Sept (2008)
15. Impact of Scleral elasticity on Presbyopia. International Society of Presbyopia conference. Berlin, Germany, Sept (2008)
16. Finite element analysis of the lens. EOS IV Topical Meeting on Visual and Physiological Optics, Crete, August (2008)
17. The Ageing Eye and environmental influences (Keynote lecture) Essilor Eye Conference, Tianjin, China Oct/Nov (2009)

18. Optometry and Vision Science: a clinical profession with a multidisciplinary basis.
(Plenary lecture) Advancing Optometry in Poland, Poznan, Poland March (2010)
19. Refractive index and accommodation: what may cause variations in function. EOS V Topical Meeting on Visual and Physiological Optics, Stockholm, Sweden Aug (2010)
20. Nanomaterials in the Eye (Keynote lecture) European Society for Biomaterials Conference Dublin Sept (2011)
21. Discontinuities in the index gradient of the eye lens. EMPVO VI Topical Meeting on Visual and Physiological Optics, Dublin, Ireland Aug (2012)
22. How structure influences function in the eye lens. International Conference on the Lens.
Kona, Hawaii, USA Jan (2014)
23. Alteration in axial refractive index profiles during accommodation; mechanical considerations. EMPVO VII Topical Meeting on Visual and Physiological Optics, Wroclaw, Poland, Aug (2014)
24. Protein structural correlates of lenticular optics. EMPVO VII Topical Meeting on Visual and Physiological Optics, Wroclaw, Poland, Aug (2014)
25. The lens- an optobiological synchrony (Plenary lecture) SPIE Student Chapter Barcelona Spain November (2014)
26. The paradox and synchrony of the eye lens SPIE Student Chapter Leuven Belgium February (2015)

Invited Seminars

1. The ageing lens and new research in cataract. Centre for Optometric Education, Sydney, N.S.W. February 1996.
2. Senescence and the lenticular manifestations. (2 lectures). Australian Optometrical Association State conference (South Australian Division), Adelaide, June 1996.
3. Presbyopia and lens ageing. Department of Ophthalmology. Flinders Medical Centre, South Australia, August 1996.
4. Wizja niska: manifestacje i korekcja. Lecture in low vision delivered in Polish, to Ophthalmologists at Wroclaw University, October 1999
5. Le vieillissement du lentil de l'oeil. Lecture delivered partly in French to School of Optometry, Montreal, April 1999
6. Lecture on the ageing of the eye lens and presbyopia. University of Ulster, November, 1999
7. The enigmatic nature of the ageing eye lens. Leeds University, Biomedical Sciences, May, 2000
8. The ageing lens. College of Optometrists Conference 2000. March, 2000
9. Factors affecting presbyopia. Varilux Teachers of Optometry/Optics conference, Brussels, Belgium October 2003
10. The enigma of the lens. Granada, Spain, Spanish Optometric Conference, September 2004

11. The ageing eye. Eyecare 3000 conference, Belfast (2006)
14. Rigidity and elasticity of the eye. British Society of Refractive Surgery. Scientific Congress Oxford, (2006)
15. Ageing and the eye. Eyecare 3000 conference Glasgow (2007)
16. Aberrations of a dynamic optical system. Colloquium, Dept of Physics, NUI (Galway), April (2009)
17. Rheological properties of the outer coats of the eye. Cardiff University Corneal Conference, Wales, July (2009)
18. The eye lens: a biological chronicle. Cardiff University, Cornea to Cortex seminar series November (2014)

Meetings

1. Pierscionek, B.K.: A reflectometric sensor to measure the refractive index of the eye lens. 17th meeting of the Australian Society for Biophysics Canberra, Australia (1993).
2. Reytomas, R. and Pierscionek, B.K.: Computer simulation of images seen through a cataractous lens. Engineering and Physical Sciences in Medicine Perth, Australia (1994).
3. Pierscionek, B.K.: Refractive index gradients determined by reflectometric sensing. Ophthalmic Research Institute of Australia Basic Sciences Meeting Geelong, Australia

(1994).

4. Fraser, J.R.E., Brown, T.J. and Pierscionek, B.K.: The molecular weight (M_T) of hyaluronan is reduced in the blood stream. 19th Annual Conference of the Connective Tissue Society of Australia and New Zealand (Satellite Meeting of the 7th FAOB Congress; Biochemistry and Molecular Biology of Connective Tissues). Terrigal, N.S.W., Australia (1995).

Seminars/Continuing Education

1. Biochemistry of the ageing and cataractous lens. Continuing Education, Department of Optometry, University of Melbourne, (1989).
2. Biochemical and optical properties of the bovine eye lens. Department of Biochemistry, University of Melbourne, (1989).
3. Age-related changes in the eye lens. Department of Biochemistry, Monash University, (1989).
4. Biophysics of the eye lens. Department of Electronic Engineering, La Trobe University, (1992).
5. The lens paradox. Department of Biochemistry, La Trobe University, (1994).
6. Optics, presbyopia and the lens paradox. School of Orthoptics Clinical Seminar Series, La Trobe University, (1995).

7. The eye lens and its functions. School of Electronic Engineering, La Trobe University, (1995).
8. Ageing of the eye lens. Department of Physiology, Monash University, (1996).
9. Functional changes associated with ageing of the eye lens. Seminar at the Department of Optometry, University of Bradford, U.K. November, (1996).
10. Complaints and Negligence in Clinical Practice. Northern Ireland Optometrical Society November, (2004)
11. Complaints and Negligence in Clinical Practice in Ireland. Annual Conference for Irish Optometrists, April (2005)
12. Ethics and law in healthcare practice. Continuing Education Programme. Southern Health and Social Services Board, Antrim, Northern Ireland, Sept (2008)
13. Dealing with the non-autonomous patient. Continuing Education Programme. Northern Ireland Optometric Society, Nov (2010)
14. Research ethics workshop (jointly presented with Dr L. Davies, Aston University) College of Optometrists conference, Liverpool, UK, March (2011)

Other publications and presentations

Professional Papers and Articles

1. Pierscionek, B.K.: A review of presbyopia. Vision Asia Pacific. 7-8, December (1992).
2. Pierscionek, B.K.: Older by the minute. Feature article in The Age, 11 (22/4/1993).

3. Pierscionek, B.K.: Features of eye movement systems. Vision Asia Pacific. 9-10
September, (1994)
4. Pierscionek, B.K.: Presbyopia: theories and findings. Points de Vue. 31, 28-37 (1994)
5. Pierscionek, B.K.: Presbyopia - some shared thoughts. Optometry Today (17/11/2000)
6. Pierscionek, B.K.: Laying a vision paradox to rest. Optometry Today (4/10/2002)
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