Damien Gatinel

MD PhD | Condensed curriculum vitae

Updated 11 November 2026

Ophthalmologist and surgeon-scientist whose research connects mathematical optics, ocular biometry and clinical practice, with a particular focus on IOL power prediction, individualized refractive uncertainty and patient-specific optical simulation.

Current appointments

- Head of Anterior and Refractive Surgery, Rothschild Foundation Hospital, Paris, France, since 2008.
- Scientific Medical Director, Institut Laser Vision, Clinique Noémie de Rothschild, Paris.
- Associate Professor of Ophthalmology, Abulcassis International University of Health Sciences, Rabat, Morocco.

Education and academic qualifications

- 2017 - PhD in Applied Mathematics, Université Paris-Saclay, UVSQ; supervisor Professor Laurent Dumas.
- 2005 - Habilitation à Diriger les Recherches, Université Paris VII.
- 1996 - Specialist Diploma in Ophthalmology.
- 1991 - Doctor of Medicine.

Previous appointments include Assistant Professor at Bichat-Claude Bernard Hospital, Université Paris VII (1999-2008), and clinical training at Avicenne Hospital, Université Paris XIII.

Research contributions and innovations

IOL power calculation. Co-developer of PEARL-DGS with Dr Guillaume Debellemanière, combining machine learning and thick-lens optics; designer of the GATINEL formula, recipient of the 2026 ESCRS Best Paper Award. Research addresses lens constants, effective lens position and biometric sensitivities.

GRACE. Developer of the Gatinel Risk-Aware Calculation Engine, which combines refractive prediction with individualized uncertainty estimates. Recent publications describe closed-form sensitivities, variance propagation, Monte Carlo verification and clinical evaluation of prediction intervals.

AIOLsci. Founder and co-developer with Dr Benjamin Stern of a platform combining measured IOL wavefronts with patient biometry and aberrometry to simulate optical performance in an individual eye. AIOLsci 2.0 won the 2026 ISRS RefracTech Challenge.

Wavefront analysis. Co-developer of the Gatinel-Malet LD/HD polynomial decomposition, separating low- and high-degree wavefront content, and of vergence-function expansions expressed in diopters. These approaches connect ocular aberrometry with refraction, multifocality and optical quality.

IOL optical design and metrology. Co-inventor of FineVision, the first diffractive trifocal IOL. Experimental work uses optical-bench testing, quadri-wave lateral shearing and high-resolution Mach-Zehnder interferometry to characterize IOL optics and their interaction with the eye.

Cornea and refractive surgery. Work includes the SCORE Analyzer for subclinical keratoconus detection, the READ presbyopia laser algorithm, corneal ablation modeling, and artificial intelligence for topographic classification, cataract grading and prediction of subjective refraction.

Scientific activity and distinctions

Scientific record

280 scientific references in the updated bibliography, including 260 PubMed-indexed publications and 20 additional journal articles and scientific proceedings. Author or editor of five books and more than 20 book chapters. Google Scholar h-index 49 and more than 9,000 citations (November 2026).

The documented scientific record includes 1,126 delivered contributions since 1995, of which 708 were invited and 836 international. Regular invited faculty at ASCRS and ESCRS courses on IOL calculation, optical design and refractive surgery.

Professional and editorial service

- ESCRS: Chair of the Digital Health Committee; co-opted member of the Council of Management; Research Committee member.
- Executive Committee member, International Society of Refractive Surgery and AECOS Europe; Board member, SAFIR.
- Founding member, AIER Global Refractive Surgery Advisory Council, since 2024; academic advisory appointments with AIER institutes.
- Editorial Board member, Journal of Refractive Surgery and International Journal of Keratoconus and Ectatic Corneal Diseases.

Selected awards and honours

- 2026 - ISRS RefracTech Challenge, with Dr Benjamin Stern, for AIOLsci 2.0; ESCRS Best Paper Award for GATINEL; Aleph Award, Lebanese Ophthalmological Society.
- 2025 - ASCRS Kelman Innovators Award; AECOS Joseph Colin Award.
- 2022 - Prix de l'Œil, Fondation de France; Whitney Sampson Lecture Award, Eye & Contact Lens Association.
- 2017 - Bruce Jackson Lecture Award, Canadian Ophthalmological Society.
- 2016 - ISRS Recognition Award; 2015 - Knight of the Order of the Crown, Kingdom of Belgium; 2014 - AAO Senior Achievement Award; Lans Distinguished Award, AAO/ISRS.
- 22 ASCRS Best Paper of Session Awards; The Ophthalmologist Power List in 2018, 2020 and 2022-2026.

Selected named and distinguished lectures

Jan Worst Medal Lecture, 6th Haigis Memorial Lecture, Lim Lecture, Leonardo da Vinci Medal Lecture, Aleph Award Keynote Lecture and two UNMC Distinguished Lectures in Omaha (2026); Ridley Lecture (2024).

Books

- Refractive Surgery, 3rd edition (Elsevier, 2019).
- Topographie cornéenne, 2nd edition (Elsevier, 2014) and 1st edition (2011).
- Refractive Surgery, 2nd edition (Mosby-Elsevier, 2006).
- Le LASIK de la théorie à la pratique (Elsevier, 2003).