

Name: Elvan Böke (She/her)**Date of Birth:** 17.Apr.1986**Residence:** Barcelona, Spain**Website:** <https://www.crg.eu/en/programmes-groups/boke-lab>**Position:** Group Leader**Nationality:** TURKEY**Email:** elvan.boke@crg.eu

BACKGROUND

2017 – ...	Group Leader , Centre for Genomic Regulation (CRG), Barcelona, Spain
2013 – 2016	Postdoctoral Research Fellow , Harvard Medical School, Boston, USA
2008 – 2012	Graduate Student (PhD) , Cancer Research UK Manchester Institute University of Manchester, Manchester, UK
2007	Summer Intern , Massachusetts General Hospital, Boston, USA
2004 – 2008	Undergraduate (BSc) , Department of Molecular Biology and Genetics Middle East Technical University, Ankara, TURKEY (cGPA:4.0/4.0)

SUMMARY

I have a track record of making discoveries throughout my career. My PhD led to the discovery that two major phosphatases in the cell act in a relay to fine tune the controls of cell division (Nature, 2015). My postdoctoral research revealed a novel intracellular compartmentalization by a physiological amyloid network (Cell, 2016). Within 7 years of starting my lab, despite the disruptions due to the Covid pandemic and my maternity leave, my lab has made several important discoveries on oocyte metabolism (Nature, 2022), protein homeostasis (Cell, 2024) and longevity (JCS, 2022 & under prep).

My lab's standing as a pioneer on oocyte cellular biology is recognized by several awards, grants, and invitations I receive. Our recent collaborations with fertility clinics and hospitals pave the way to translate our discoveries into improvements in female fertility.

AWARDS & HONOURS

2024	European Molecular Biology Organization (EMBO) Gold Medal Awarded to young scientists for outstanding contributions to life sciences in Europe
2024	The Banco Sabadell Foundation Award for Biomedical Research Recognizes young biomedical and health science researchers for innovative work
2024	International Society of Differentiation (ISD), Anne McLaren Award This award is given to outstanding mid-career developmental biologists by ISD.
2023	Vallee Scholar Award 1 of 6 early career investigators (world-wide) selected by the Vallee foundation.
2023	Global Consortium for Reproductive Longevity & Equality (GCRLE) Pilot Award
2023	Sabri Ülker Foundation International Scholar Award The award is given annually to early-stage scientists with Turkish descent by Sabri Ülker Center, based in Harvard T.H. Chan School of Public Health, Boston, USA.
2023	Finalist la Vanguardia Science Award
2023	Premi de Ciutat de Barcelona (Barcelona City Award) Awarded annually since 1949 by the Barcelona City Council for celebrating the creative and investigative work carried out in Barcelona.
2022	ERC CONSOLIDATOR Grant "Active Dormancy"
2021	EMBO Young Investigator (YIP) 1 of the 26 investigators selected to the EMBC*-wide programme in 2021 *EMBC states: EU, UK, Israel, India, Singapore, Turkey + Taiwan and Chile
2018	TOYP (Ten Outstanding Young Persons) Turkey , Scientific Development
2017	ERC STARTING Grant "Dormant Oocyte"
2008 – 2012	Cancer Research UK (CRUK) Full-Time PhD Scholarship
2008	Valedictorian . Gave the commencement speech.
2004 – 2008	Turkish Government High Merit Scholarship
2004 – 2008	University High Merit Scholarship (57 th among 1.8M high school students)

PUBLICATIONS

(Chronologically)

As PI:

- Bahety D., Böke E.*, Rodríguez-Nuevo A*. Mitochondrial Morphology, Distribution and Activity during Oocyte Development. **2024, Trends in Endocrinology & Metabolism** *co-corresponding
- Zaffagnini G., Cheng S, Salzer MC, Pernaute B., Duran JM., Irimia M, Schuh M, Böke E. Mammalian oocytes sequester aggregated proteins in degradative super-organelles. **2024, Cell.**
 - Research highlight: “How egg cells handle their cellular rubbish”. Nature
 - Other journal: “Keeping aggregates in check”. Science
- Hwang H, Chen S, Ma M, Divyanshi, Fan HC, Borwick E, Böke E., Mei W, Yang J. Phase transition of maternal RNAs during vertebrate oocyte-to-embryo transition. **2023, Dev Cell.**
- Rodríguez-Nuevo A, Torres A., Duran JM, De Guirior C, Martínez-Zamora MA, Böke E. Oocytes maintain ROS-free mitochondrial metabolism by suppressing complex I. **2022, Nature.**
 - News & Views: “Eggs remodel energy production to protect themselves from harm”. Nature
- Boke E. Unravelling oocyte ultrastructure. **2022, Nature Reviews Molecular Cell Biology.**
- Wyatt CDR, Pernaute B, Gohr A, Miret-Cuesta M, Goyeneche L, Rovira Q, Salzer M, Boke E., Bogdanovic O, Bonnal S, Irimia M. A developmentally programmed splicing failure contributes to DNA damage response attenuation during mammalian zygotic genome activation. **2022, Science Advances.**
- Dhandapani L; Salzer MC; Duran JM; Zaffagnini G; De Guirior C; Martínez-Zamora MA; Böke E. Comparative analysis of vertebrates reveals that mouse primordial oocytes do not contain a Balbiani body, **2022, Journal of Cell Science.**
 - Research highlight: "New insights into primordial oocyte organisation". **Journal of Cell Science**
- Holehouse, AS; Ginell, GM; Griffith, D; Boke, E. Clustering of Aromatic Residues in Prion-like Domains Can Tune the Formation, State, and Organization of Biomolecular Condensates, **2021, Biochemistry.**
- Woodruff JB, Hyman AA, Boke E. Organization and Function of Non-dynamic Biomolecular Condensates. **2018, Trends Biochem Sci.**

As PostDoc:

- Savova V, Pearl EJ , Boke E., Nag A, Adzhubei I, Horb ME, Peshkin L. Transcriptomic insights into genetic diversity of protein-coding genes in *X. laevis*. **2017, Dev. Biol.** 424 (2), 181-188.
- Boke E & Mitchison TJ. The balbiani body and the concept of physiological amyloids. **2017, Cell Cycle.**
- Boke E., Ruer M, Wühr M, Coughlin M, Lemaitre R, Gygi SP, Alberti S, Drechsel D, Hyman AA, Mitchison TJ. Amyloid-like self-assembly of a cellular compartment. **2016, Cell (F1000 recommended)**

As PhD/ Undergraduate Student :

- Grallert A #, Boke E#, Hagting A, Hodgson B, Connolly Y, Smith DL, Pines J and Hagan IM. A PP1/PP2A phosphatase relay controls mitotic progression. **2015, Nature** 517, 94-98. **(F1000 recommended)**. # = contributed equally
 - See associated News & Views: “It takes three to find the exit”. **2015, Nature**
- Fennesy D, Grallert A, Krapp A, Bowen J, Bridge AJ, Petersen J, Patel A, Tallada VA, Boke E., Hodgson B, Simanis V, Hagan IM. Extending the *S. pombe* molecular genetic toolbox. **2014, PLoS One** 9, e97683
- Boke E., Hagan IM. Polo, Greatwall, and Protein Phosphatase PP2A Jostle for pole position. **2011, PLoS Genet.** 7, e1002213
- Saydam O, Shen Y, Würdinger T, Senol O, Boke E., James MF, Tannous BA, Stemmer-Rachamimov AO, Yi M, Stephens RM, Fraefel C, Gusella JF, Krichevsky AM, Breakefield XO. Downregulated microRNA-200a in meningiomas promotes tumor growth by reducing E-cadherin and activating the Wnt/beta-catenin signaling pathway. **2009, Mol Cell Biol.** 29, 5923-40

INVITED TALKS & CONFERENCES

Keynote Lectures since 2022:

- 12th Institute of Genetics and Genomics of Geneva Annual Meeting, Geneva, Switzerland (2023)
- EMBO Workshop Latin American Developmental Biology Conference, Anne McLaren Award Lecture, Valparaiso, Chile, 2024
- ASCB Annual Meeting – EMBO Gold Medal Award Lecture, San Diego, USA, 2024

Invited Conference Talks since 2022:

- 123rd International Titisee Conference RNA as a driving force in cellular organisation and function. Titisee, Germany, 2022
- EMBL Symposium Cellular Mechanisms Driven by Phase Separation. Heidelberg, Germany, 2022
- 8th International Congress of the Molecular Biology Association of Turkey. Istanbul, 2022
- BIOINFO Congress III. Turkey, 2022 - Invited by undergraduate and PhD students.
- Vienna BioCenter (VBC) PhD Symposium “Pushing boundaries”. Vienna, Austria, 2022
- International Symposium on Totipotency and Germ Cell Development, Fukuoka, Japan, 2022
- Catalonia Cell and Tissue Research (CATCAT) Meeting, Barcelona, Spain, 2022
- 2nd Subhash Mukhopadhyay e-Symposium (Online) based in India, 2023
- Sabri Ülker Center Symposium, Metabolism and Life, Istanbul, Turkey, 2023
- CNRS – Jacques Monod Conference "Growth and regeneration during development and aging" Roscoff, France, 2023
- European Society of Human Reproduction and Embryology (ESHRE) 39th Annual Meeting Copenhagen, Denmark, 2023
- MRC Laboratory of Molecular Biology PhD Symposium. Cambridge, UK, 2023
Invited by the PhD students.
- Gordon Research Conference “Molecular Membrane Biology.” NH, USA, 2023
- EMBO Workshop Developmental metabolism: flows of energy, matter, and information Heidelberg, Germany, 2023
- European Developmental Biology Congress, Barcelona hub, Spain, 2023
- 25th EMBL PhD Symposium, Heidelberg, Germany, 2023 - Invited by the PhD students.
- UPF-Eugin Multidisciplinary Symposium on Causes and consequences of delaying reproduction, Barcelona, Spain, 2023
- Dexeus Forum (IVF Conference), Barcelona, Spain, 2024
- Ubiquitin & Friends, Vienna, Austria, 2024
- Gordon Research Conference “Meiosis.” NH, USA, 2024
- IBSA Nature International Summit on Reproductive Medicine, Lugano, Switzerland, 2024
- CSHL Germ Cells Meeting, Cold Spring Harbor, NY, USA, 2024
- EMBO Workshop Molecular mechanisms of developmental and regenerative biology, Japan, 2024

Invited Seminars since 2022:

- College de France, Center for Interdisciplinary Research in Biology, Paris, France (2022)
- RIKEN Institute QMIN (Quiescence Manipulation and Investigation of Natural hypometabolism) Seminar Series (Online), Japan (2022)
- University of Konstanz, Department of Biology (Online), Germany (2022)
- Andalusian Center for Development Biology (CABD), Sevilla, Spain (2023)
- Bringing Materials to Life (BML) Seminar Series (Online), ETH Zurich, Switzerland (2023)
- Francis Crick Institute Genes to Cells Interest Group Seminar Series, London, UK (2023)
- Mechanobiology Institute, Singapore (2023)
- Koch Institute For Integrative Cancer Research at MIT, Boston, USA (2023)
- Babraham Institute, Cambridge, UK (2023)
- Wellcome Sanger Institute, Cambridge, UK (2023)
- Max Planck Institute for Molecular Genetics, Berlin, Germany (2024)
- IMBA - Institute of Molecular Biotechnology, Vienna, Austria (2024)
- MRC Laboratory of Molecular Biology, Cambridge, UK (2024)
- Janelia Research Campus, USA (2024)
- Harvard Medical School, Cell Biology, USA (2024)

LAB ALUMNI

- 2018 - 2022** **PhD student** Laasya Dhandapani (India) – now postdoc at IBEC, Barcelona, ES
- 2018 - 2024** **Postdoctoral Researcher** Dr. Gabriele Zaffagnini (Italy) – group leader at CECAD, Cologne, DE from Jan 2025
- 2019 - 2020** **UPF Undergraduate Student** Ariadna Torres (Spain) – received the best thesis award for her work in our lab; now PhD student at IRB, Barcelona, ES
- 2020 - 2021** **UPF Undergraduate Student** Marina Carmona (Spain) - received the best thesis award for her work in our lab; now PhD student at CSIC-IBE, Barcelona, ES

SELECT MEDIA COVERAGE & PUBLIC OUTREACH

- 2024** Interview as one of the **11 “female scientists to know” in Catalonia** by Núvol: <https://www.nuvol.com/ciencia/elvan-boke-la-fertilitat-masculina-sha-estudiat-molt-mes-que-la-femenina-367508>
- 2024** Our discovery on oocyte protein homeostasis (Cell, 2024) was covered **by over 30 media outlets**, including popular national (RTVE, TV3 etc) and international (Quanta Magazine etc) media.
- 2023** **Finalists of LaVanguardia Science Competition:** featured in the popular newspaper LaVanguardia, with two full pages on a Sunday edition.
- 2023** Elvan gave **the opening day speech of #100tífiques program** to all participants (an annual program for which female scientists present their work at schools throughout Catalunya on Feb 11).
- 2023** **Barcelona Festa de la Ciència (Science Festival).** Boke lab had an-hour long stage on explaining female fertility
- 2023** El Pais interviewed Elvan on female fertility and lab research: <https://elpais.com/ciencia/2023-03-29/elvan-boke-biologa-se-investiga-mucho-mas-la-disfuncion-erectil-que-la-reproduccion-femenina.html>
- 2022** Our discovery on oocyte metabolism (Nature, 2022) was covered **by over 60 media outlets**, including popular national (El Pais, etc) and international (STATNEWS, etc) media.

MAJOR COLLABORATORS (as in 2024)

- Prof. Matthew van der Heiden. **Director, MIT Koch Institute**, Boston, USA
- Prof. Nikolaos Polyzos. **Head of Reproductive Medicine, Hospital Dexeus Mujer**, Barcelona, Spain
- Drs. M^a Angeles Martínez-Zamora & Cristian De Guirior, **Gynecology Department, Hospital Clinic**, Barcelona, Spain
- Dr. Thomas Kolbe, **Veterinary Medicine, Medical University of Vienna**, Austria

CAREER BREAKS

Dec 2021- June 2022 Maternity leave