CV: Johannes Jaeger, MSc, PhD

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the-zone.at

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Google Scholar

Vision Statement

I am a freelance researcher, philosopher, artist, educator, facilitator, and mentor with a deeply transdisciplinary background. Trained originally as a geneticist, I have worked as an experimenter and modeler, led an empirical research group, directed an institute for the philosophy of biology, and now pursue independent work as a theoretician and scholar. Crossing boundaries between science, philosophy, and the arts is central to my practice.

My research explores *how organisms* are able to *self-manufacture* and *act on their own behalf*. This type of *organismic agency* enables and shapes their *open-ended evolution*.

I am motivated by fundamental questions:

- What sets living systems apart from non-living ones, incl. technological artefacts such as AI?
- What are the limits of mechanicist-reductionist approaches to understanding life?
- How can formal models illuminate biological complexity and evolutionary processes?
- Where do these models fall short? When this happens, how can we improve our formalisms?
- What can the organization and evolution of organisms teach us about other self-organizing systems, such as ecologies, societies, institutions, and economies?

I am currently writing a book that articulates a vision for 21st-century science — a science that moves "*Beyond the Age of Machines*" and embraces the genuine complexity of the living world.

Its aim is to develop a more realistic understanding of ourselves as limited living beings situated in a world that far exceeds our grasp and control, and to ask how robust and useful knowledge is still possible under these conditions.

My work focuses on the role of reverse-engineering and data-driven modeling in contemporary science; on new forms of causal explanations suited to complex adaptive systems; and on how autonomy, agency, and creativity emerge from the organization of living organisms. I draw on empirical, mathematical, and conceptual approaches to engage with these topics.

I am committed to institutional reform in academic research, with a focus on *open science*.

I connect scientific and artistic perspectives through the Vienna-based ArtScience collective *The ZoNE* and its affiliated consultancy, *The Perspective Studio*.

Passionate about teaching and mentorship, I foster dialogue across disciplines, and I have a proven track record of creating collaborative, creative, and supportive research environments.

Professional Experience

2017– **Freelance Researcher**, **Philosopher**, **Artist**, **Educator**, **Facilitator**, and **Mentor**

2017– **Associate Faculty**, Complexity Science Hub (CSH) Vienna, AT

2022–25 **Project Leader**
John Templeton Foundation / Department of Philosophy, University of Vienna, AT

2023/24 **Scholar**, Ronin Institute

2020/21 **D'Alembert Fellow**
Paris-Saclay / Institut d'Études Avancées (IEA) de Paris, FR

2020 **Fellow**, Stellenbosch Institute for Advanced Study (STIAS), Stellenbosch, ZA

2018–2020 **Guest Lecturer** (**Gastprofessor**)
Department of Molecular Evolution & Development, University of Vienna, AT

2019 **Dr. Chopin Visiting Professorship**, Webster Private University, Vienna, AT

2018/19 **Fellow**, Centre de Recherches Interdisciplinaires (CRI), Paris, FR

2017/18 **Visiting Scholar**, Center for Systems Biology Dresden (CSBD), DE

2015–2017 **Scientific Director**
Konrad Lorenz Institute for Evolution & Cognition Research (KLI),
Klosterneuburg, AT

2014/15 **Fellow**
Institute for Advanced Study / Wissenschaftskolleg zu Berlin, DE
Focus Group: *Gene Regulation and Organismal Diversity* (organized by Steve Frank)

2008–2015 **Group Leader**
Comparative Analysis of Developmental Systems
EMBL/CRG Research Unit in Systems Biology
Centre de Regulació Genòmica (CRG), Barcelona, ES

2006–2008 **Postdoctoral Research Associate**
Laboratory for Development & Evolution, University Museum of Zoology
Department of Zoology, University of Cambridge, UK
With Prof. Michael Akam & Prof. Nick Monk

Education

Degrees

2000–2005 **PhD**, **Graduate Program in Genetics**
Dept of Applied Mathematics & Statistics / Center for Developmental Genetics
Stony Brook University, Stony Brook, NY, USA
Thesis: "Dynamic Regulatory Analysis of the Gap Gene Network in *Drosophila melanogaster*"
Under the supervision of: Prof. John Reinitz

1999–2000 **MSc in Holistic Science**
Schumacher College, Dartington / University of Plymouth, Devon, UK
Thesis: "A Cellular Oscillator Model of Animal Segmentation"
Under the supervision of: Prof. Brian Goodwin
Distinction

1996–1999 **University Diploma in Biology**
Biocenter, University of Basel, CH
Thesis: "Apoptosis and Homeosis in the *Drosophila* Eye Imaginal Disc"
Under the supervision of: Prof. W. J. Gehring
Final Grade: 5.4 (out of 6)

Selected Courses / Workshops

2012 **Evolutionary and Population Genetics Theory**
Kondrashov F, Centre de Regulació Genòmica (CRG), Barcelona, ES

2004 **Dynamics, Control and Computation in Biochemical Networks**
Banff International Research Station (BIRS) Workshop
organized by Ingalls B, Glass L, Sontag E, Winfree E, Banff, CA

2003 **Complex Systems Summer School**
Santa Fe Institute (SFI), organized by Shapiro J, Santa Fe, NM, USA

2001 **From Individual to Collective Behaviour in Biological Systems**
Newton Institute for Mathematical Science – Scientific Programme,
organized by Maini PK, Othmer H, Pedley TJ. Sleeman BD, Cambridge, UK

1998 **Developmental Biology of Marine Organisms**
organized by Gehring WJ, Banyuls-sur-Mer, FR

Leadership

2009/2011 **Leading for Success in Science** (Basic & Advanced Courses)
Kocevar S, Frick T, hfp consulting, Parc Recerca Biomèdica Barcelona (PRBB), ES

Science

(see also list of publications and talks at the end of the CV)

Awards

2013 **President's Medal**, Section: Cell Biology, Society for Experimental Biology (SEB)
Awarded at the SEB Annual Meeting 2013 in Valencia, Spain

Research Grants

2022–2025 **Project Leader**, John Templeton Foundation, ID: 6258, *Pushing the Boundaries: Agency, Evolution & the Dynamic Emergence of Expanding Possibilities*

2020–2021 **Partner,** CROWD4SDG, EC Horizon 2020, Project No. 872944, *Citizen Science for Monitoring Climate Impacts and Achieving Climate Resilience*

2011–2015 **Coordinator**, BioPreDyn, EC 7th Framework Programme, Knowledge-Based Bio-Economy (KBBE), Project No. 289434, *From Data to Models: New Bioinformatics Methods and Tools for Data-Driven, Predictive Dynamic Modelling in Biotechnological Applications*

2010–2015 **Principal Investigator,** Spanish Ministry of Science and Innovation (MICINN), Grants BFU2009-10184 & BFU2012-33775, *Evolutionary and Developmental Dynamics of the Gap Gene Network*

2010–2013 **Partner**, MODHEART, ERANet: ERASysBio+ Ref. EUI2009-04045, *Modelling the genetic network controlling heart development using* Drosophila melanogaster

2010–2013 **Partner**, MOPDEV, ComplexityNET Ref. PIM2010ERC-00293), *Multi-objective optimization for modeling developmental gene regulatory networks*

2009–2011 **Principal Investigator,** Catalan Agency for Scientific Research (AGAUR), SGR Grant 406, *Comparative Analysis of Developmental Systems*

2006–2009 **Recognized Researcher,** BBSRC Grant BBID00051311, *A Comparative Gene Circuit Approach to Study the Evolution of Segmentation in Insects*
[I wrote this grant and was solely responsible for its scientific content]

1999–2000 **Graduate Fellowship** from the Roche Research Foundation, Basel, Switzerland

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Other Activities

2018– **Scientific Advisory Board**, Phd Programme in Theoretical & Evolutionary Biology Charles University, Prague, CZ

2011– **Editor** (* former)
*PTPBio**, *J Exp Zool B*, *In Silico Biol*, *PLoS ONE**, *Front Syst Biol, Front Bioinf Comp Biol*

2019–2024 **Recommender**, Peer Community in (PCI) Evolutionary Biology

2006– **Reviewer** for *eLife*, *Cell*, *PNAS*, *PLoS Biology*, *Nat Cell Biol*, *PLoS Comp Biol* & others

2008– **Grant Reviewer** for the ERC, JTF, HFSP, ÖAW, BBSRC, the LeverhulmeTrust & others

Conferences / Workshops / Seminars Organized

2025 **Organizer** (with co-organizers Andrea Loettgers, Paul Poledna, Kevin Purkhauser)
Workshop: "*Pushing the Boundaries – Agency, Evolution, and Emergence*"
Berghotel Tulbingerkogel, Vienna, AT

2019–2025 **Organizer** (with co-organizers Berta Verd, James DiFrisco, and Nicole Repina),
FEBS/EMBO Lecture Course: Venice Summer School in Evolutionary Systems Biology
Centro Culturale Don Orione Artigianelli, Venice, IT

2022 **Co-Organizer** (with Dan Brooks, James DiFrisco)
Workshop: "T*he New Naturalism: Towards a Progressive Theoretical Biology*"
Wissenschaftskolleg zu Berlin, Berlin, DE

2019 **Co-organizer** (with James DiFrisco)
Symposium: "*From Gene Regulatory Networks to Dynamic Mechanistic Explanations*"
Intl Society for the History, Philosophy, and the Social Studies of Biology (IHSPSSB)
Oslo, NO

2011–2017 **Director** (with organizers: Alessandro Minelli, Gerd Müller, Giuseppe Fusco),
Summer School in Evolutionary Developmental Biology
Istituto Veneto di Scienze Lettere ed Arti, Venice, IT

2017 **Organizer** (with Peter Sloot, Jaap Kaandorp, Gemma Anderson, Hester Breman),
Lorentz Center Workshop "*On Growth and Form 2017*", Leiden, NL

2016 **Organizer** (with Joanna Masel), 1st KLI Science Forum
"*Two sides of the same coin: mechanistic and population-level perspectives on evolution*", KLI Klosterneuburg, AT

2016 **Organizer**, Symposium "*Process Thinking for Evo-Devo*"
Euro Evo Devo 2016, Uppsala, SE

2015 **Organizer** (with Verônica Grieneisen, Nick Monk), "*The Process View of Life*"
Session at the Annual Meeting of the Society for Experimental Biology 2015
in Prague, CZ

2011–2014 **Organizer** (with Matthieu Louis, James Sharpe, Hilde Janssens)
Annual CRG/EMBL Summer Course in Systems Biology, Barcelona, ES

2012 **Organizer** (with Eileen Furlong), ESF/EMBO Research Conference on
"*The Systems Biology of Drosophila Development*"
Polonia Castle, Pułtusk, PL

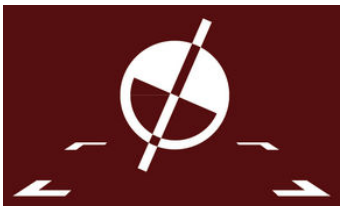
2011 **Organizer** (with Bart Deplancke, Alex Stark), 1st Junior European Drosophila
Investigators (JEDI) Conference, Leysin, CH

2010 **Organizer** (with Ben Lehner), 1st CRG/EMBL Workshop on "*The Evolution of Biological Networks*", Barcelona, ES

2006–2008 **Organizer** (with Beverly Glover), Seminar Series in Evolution & Development,
Dept of Zoology, University of Cambridge, Cambridge, UK

Teaching / Facilitation / Mentoring

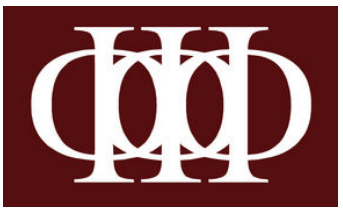
Workshops



The Perspective Studio
ArtScience Workshops
ArtEO, London, UK
Pushing the Boundaries, Vienna, AT
WWTF Funding Agency, Vienna, AT
Galemo Montessori School, Klosterneuburg, AT

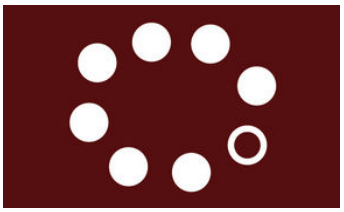
Academic Flourishing
Retreats for Early-Career Academics
Max Planck Institute for Evol Biol, Plön, DE
Swiss Institute for Aquatic Science & Technology (EAWAG), CH
Institute of Cell Biology / Dept of Biology, Univ Fribourg, CH
Dept of Cognitive Science, Univ Aarahus, DK
Vall d'Hebron Institute of Oncology (VHIO), Barcelona, ES

Creativity
Co-Creation & Co-Design
CRI Paris, FR
Webster Private University, Vienna, AT
Donauuniversität, Krems, AT



Philosophy for Researchers
Science as Process & Perspective
CRI/LPI Paris, FR
Institute for Science & Technology Austria (ISTA), Klosterneuburg, AT
Vall d'Hebron Institute of Oncology (VHIO), Barcelona, ES

Online Lectures



Beyond the Age of Machines
Beyond Networks: The Evolution of Living Systems
Science as Process and Perspective
Modelling in Developmental Biology
Other Public Talks

Metamodern Mentoring

metamodern-mentoring.org

Academic Teaching

2019–2021 **Mentor/Teacher**, CIRP Student Retreat, CRI/LPI Paris, FR
2018–2020 **Guest Lecturer** (**Gastprofessor**): MSc Programme: Evolutionary Systems Biology, Dept of Molecular Development & Evolution, University of Vienna, AT
Lecture: "*Beyond Networks: The Evolution of Dynamic Regulatory Systems*"
2012–2024 **Invited Lecturer**: Experimental Approaches Course, Wellcome PhD Programme in Developmental Biology, University of Cambridge, UK
2010–2022 **Invited Lecturer**: Graduate Course on Eco-Evo-Devo, Instituto Gulbenkian de Ciência, Lisbon, PT
2019/2020 **Guest Lecturer** (**Gastprofessor**): Dept of Mol Dev & Evol, University of Vienna, AT
Lecture: "*Introduction to Developmental Biology*" (Undergraduate Level)
Lecture: "*Introduction to Evo-Devo*" (MSc Level)
2019 **Visiting Professorship**, "*Into the Unknown: Open Inquiry & Radical Innovation*" Lecture, Seminar & Workshop, Webster Private University Vienna, Austria
2012–2016 **Invited Lecturer**: Postgraduate Summer School in Eco-Evo-Devo, Oxford Brookes University, Oxford, UK
2012–2015 **Invited Lecturer**: Masters in Genetics and Genomics, Dept of Genetics, Universitat de Barcelona, ES
2012–2014 **Invited Lecturer**: Masters Course in Animal and Plant Morphogenesis, École Normale Supérieure (ENS), Hameau de l'Étoile, Montpellier, FR
2009–2015 **Lecturer**: Advanced Seminars in Biomedical Research (First Year PhD Course), Centre de Regulació Genòmica (CRG), Universitat Pompeu Fabra, Barcelona, ES
2015 **Invited Lecturer**: Multi-level Modelling of Morphogenesis (EMBO Practical Course), John Innes Centre, Norwich, UK
2011–2013 **Teacher**: MSc in Holistic Science, Schumacher College, Dartington, Devon, UK
2011 **Teacher**: Summer Course in Genomic Logic, organized by the Centro Andaluz de Biología del Desarrollo (CABD), Carmona, ES
2011 **Teacher**: A Science of Qualities: Celebrating Brian Goodwin's Vision, Schumacher College, Dartington, Devon, UK
2009 **Invited Lecturer**: Summer School on Evo-Devo, Istituto Veneto di Scienze, Lettere ed Arti, Venice, IT
2008 **Lecturer/Supervisor**: L5 Genes, Genomes & Animal Evolution (Final Year, Undergraduate Course), Department of Zoology, University of Cambridge, UK
2000/2001 **Teaching Assistant**: Techniques in Molecular and Cellular Biology (BIO311), & Developmental Genetics (BIO327), Stony Brook University, Stony Brook, NY, USA

Other Teaching

2022 **Science Teacher**: Galemo Montessori School, Klosterneuburg, AT

Theses Supervised

PhD: (5 in total, * co-supervision)
Dept of Philosophy, University of Vienna: Paul Poledna*, Kevin Purkhauser* (2022–)
CRG / Universitat Pompeu Fabra, Barcelona: Astrid Hörmann (2009–2014), Berta Verd (2011–2016)
Dept of Zoology, University of Cambridge: Monica García-Solache* (2006–2008)

MSc / MPhil / BSc: (6 in total, * co-supervision)
Max Florka*, Anna Riedl, Thibault Ponchon, Kolja Becker*, Chea L. Lim, Luke Jostins*

Art & Science

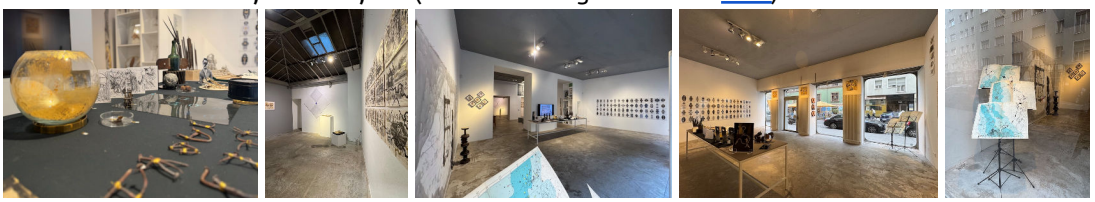
the-zone.at

Exhibitions / Interventions

Sep–Nov 2025 **I was looking for something …**
Volkskundemuseum / Museum of Folk Life & Art, Vienna, AT

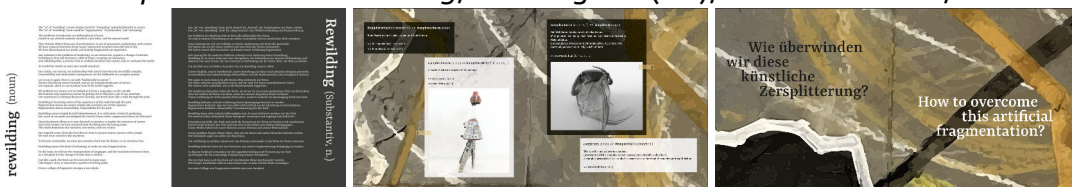
May–Nov 2025 **Rewilding**
SCHLOSS LIND – das andere heimatmuseum, Neumarkt i.d. Steiermark, AT

Mar 2025 **Intangible**
Galerie Rauminhalt, Vienna, AT (additional images available here)



Publications

2025 **The ZoNE**. *parkbuch nr. 4: rewilding*, Staudinger A (ed.), edition PRO:vinz, Neumarkt.



2024 **Jaeger J**, Neustetter M. In The ZoNE. In: *The Octopus – On Diversities, Art Production, Educational Models, and Curatorial Trajectories*, Şenova B (ed.), De Gruyter, Berlin.

2020 Anderson G, Verd B, **Jaeger J**. Drawing to extend Waddington's Epigenetic Landscape. *Leonardo* 53: 1–14.

Outreach

Media / Public Appearances

Apr 2025	**Leporello**, Ö1, *Intangible* – Art & Science
Apr 2025	**Podcast**, *Warum wir KI falsch verstehen*, Interessante Zeiten (mit Tobias März)
Mar 2025	**Podcast**, *We're not machines!* Love & Philosophy (with Fotis Tsiroukis)
Dec 2024	**Arts & Science**, *Erdzeitalter & Universum*, a guided walk through the exhibition: *The End is Where We Start From* by Anne Duk Hee Jordan KunstHausWien – Museum Hundertwasser, Vienna, AT
Jun 2024	**Podcast**, *On Agency, Algorithms, Art, and Bullshit*, Adventures Among Ideas (with David Dennen & Daniel Tarpy)
Apr 2024	**Podcast**, *Algorithms won't get us to AGI*, Futurati (Thomas Frey & Trent Fowler)
Nov 2021	**Podcast**, *Beyond Networks*, Brain Inspired (with Paul Middlebrooks)
Sep 2016	**Interview**, MeinBezirk.at.
Feb 2016	**Interview**, *Grundlagenforschung,* Ö1 Radiokolleg.
Nov 2015	**Interview**, Laborjournal.
2016/17	**Volkshochschule Wien (VHS)**, public lectures on basic science, systems, biology, organisms, and the question "what is life?" (in German)

Popular Essays

Sep 2025	*An Evolving Web of Complex Relations*
Aug 2024	*Toward a Metamodern Science* – *The Machine View is Blocking Our Vision*
May 2024	*Why TAME is lame …* (a criticism of the doctrine of "engineer everything!")
Apr 2024	*Understanding Living Systems* (with accompanying educational video)
Oct 2023	*Assembly theory is cool … but it doesn't do what its inventors say it does*
Sep 2023	*The Thing about Epistemic Humility*
Mar 2023	*Machine Metaphysics and the Cult of Techno-Transcendentalism*
Mar 2022	*Wissenskunst* – *Serious Play with Evolutionary Ideas*
Nov 2021	*Self-Censorship and the Cult of Productivity in Academic Research* (originally published in German as an article in the magazine *Laborjournal*)
Oct 2020	*Intentional Confusion* / *Metaphors All the Way Down*

There is also a series of online discussions available as part of the outreach program of our JTF Project "*Pushing the Boundaries*," plus the Zoom ZoNE podcast on arts & science topics.

List of Publications

2025 **Jaeger J**, Rodrigues A. Thinking about the Box: Models of Living Processes in the 21st Century (in preparation).

Jaeger J, Hofmeyr J-H. Life enmattered and enformed: the problem of embodiment (in preparation).

Jaeger J, Loettgers A, Purkhauser K, Poledna P, Knuuttila T. Radical emergence: the diachronic origin of novel levels of organization (in preparation).

Jaeger J, DiFrisco J, Monk N. The ontology of dynamical systems. (in preparation).

Jaeger J. Re-Engineering Wismatt for Limited Beings.
(commissioned for *Acta Biotheor*, in preparation)

Jaeger J, DiFrisco J, Loettgers A. Beyond networks: explaining dynamics in the natural and social sciences. *Modelling the Possible*, Knuuttila T (ed.), Routledge, New York (preprint).

2024 **Jaeger J**, Riedl A, Djedovic A, Vervaeke J, Walsh D. Naturalizing relevance realization: why agency and cognition are fundamentally not computational.
Front Psychol 15: 1362658 (preprint).

Jaeger J. The Fourth Perspective: Evolution and Organismal Agency.
In: *Organization in Biology*, Mossio M (ed.), Springer, Berlin (preprint).

Jaeger J. Ontogenesis, organization, and organismal agency. In: *Organismal Agency: Biological Concepts and Their Philosophical Foundations*, Švorcová J (ed.), Springer Nature, Cham (preprint).

Jaeger J. Artificial Intelligence is Algorithmic Mimicry: Why Artificial "Agents" Are Not (and Won't Be) Proper Agents. *NBDT* 1-21: 001c.94404. (preprint).

Jaeger J. Assembly Theory: What it Does and What it Does Not Do.
J Mol Evol 92: 87–92.

2023 **Jaeger J**, Masselot C, Greshake Tzovaras B, Senabre Hidalgo E, Santolini M. An epistemology for democratic citizen science. *Roy Soc Open Sci* 10, 231100 (preprint).

2022 Torri A, **Jaeger J**, Pradeu T, Saleh M-C. The origin of RNA interference: adaptive or neutral evolution? *PLoS Biology* 20: e3001715.

Roli A, **Jaeger J**, Kauffman SA. How organisms come to know the world: fundamental limits on artificial general intelligence. *Front Ecol Evol* 9: 806283 (preprint).

Jaeger J, Monk N. The flow of substance: a reply to Horsting & Hartjes.
EMBO Rep 23: e55642.

2021 Crombach A, **Jaeger J**. Life's attractors continued: progress in understanding developmental systems through reverse engineering and *in silico* evolution.
In: *Evolutionary Systems Biology: Advances, Questions, and Opportunities*, Crombach A (ed.), Springer Nature Switzerland, Cham (preprint).

Jaeger J, Monk N. Dynamical modularity of the genotype-phenotype map.
In: *Evolutionary Systems Biology: Advances, Questions, and Opportunities*, Crombach A (ed.), Springer Nature Switzerland, Cham (preprint).

2021 (contd.) **Jaeger J**, Monk N. Dynamical modules in metabolism, cell and developmental biology. *J Roy Soc Interface* 11: 20210011 (preprint).

DiFrisco J, **Jaeger J**. Homology of processes: developmental dynamics in comparative biology. *J Roy Soc Interface* 11: 20210007 (preprint).

2020 DiFrisco J, **Jaeger J**. Genetic causation in complex regulatory systems: an integrative dynamic perspective. *BioEssays* 42: 1900226.

Jaeger J, Verd B. Dynamic positional information: patterning mechanism vs. precision in gradient-driven systems. *Curr Top Dev Biol* 137: 219–246.

Anderson G, Verd B, **Jaeger J**. Drawing to extend Waddington's Epigenetic Landscape. *Leonardo* 53: 1–14.

2019 DiFrisco J, **Jaeger J**. Beyond networks: mechanism and process in evo-devo. *Biol Phil* 34: 54.

Verd B, Monk N, **Jaeger J**. Modularity, criticality and evolvability of a developmental gene regulatory network. *eLIFE* 8: e42832.

Jaeger J. Dynamic structures in evo-devo: from morphogenetic fields to evolving organisms. In: *Perspectives on Evolutionary and Developmental Biology: essays for Alessandro Minelli*, Fusco G (ed.), Padua Univ Press, Padua (preprint).

2018 Verd B, Clark E, Wotton KR, Janssens H, Jiménez-Guri E, Crombach A, **Jaeger J**. A damped oscillator imposes temporal order on posterior gap gene expression in *Drosophila*. *PLoS Biology* 16: e2003174.

Fraire-Zamora JJ, **Jaeger J**, Solon J. Two consecutive microtubule-based epithelial seaming events mediate dorsal closure in the scuttle fly *Megaselia abdita*. *eLIFE* 7: e33807.

Jiménez-Guri E, Wotton KR, **Jaeger J**. *tarsal-less* is expressed as a gap gene but has no gap gene phenotype in the moth midge *Clogmia albipunctata*. *Open Science* 5: 180458.

Jaeger J. Shift happens: the developmental and evolutionary dynamics of the gap gene system. *Curr Op Syst Biol* 11: 65–73.

Jaeger J. Foreword to: *Everything Flows: Towards a Processual Philosophy of Biology*, Nicholson D, Dupré J. (eds), Oxford Univ Press, Oxford.

2017 Wotton KR, Alcaine Colet A, **Jaeger J**, Jiménez-Guri E. Non-canonical dorso-ventral patterning in the moth midge *Clogmia albipunctata*. *EvoDevo* 8: 20.

Verd B, Crombach A, **Jaeger J**. Dynamic maternal gradients control timing and shift-rates for *Drosophila* gap gene expression. *PLoS Comp Biol* 13: e1005285.

Jaeger J. The importance of being dynamic: systems biology beyond the hairball. In: *Philosophy of Systems Biology: Perspectives from Philosophers and Scientists*, Green S (ed.), Springer, Berlin.

2016 Crombach A, Wotton KR, Jiménez-Guri E, **Jaeger J**. Gap gene regulatory dynamics evolve along a genotype network. *Mol Biol Evol* 33: 1293–1307.

2016 (contd.) Hoermann A, Cicin-Sain D, **Jaeger J**. A quantitative validated model reveals two phases of transcriptional regulation for the gap gene *giant* in *Drosophila*. *Dev Biol* 411: 325–38.

2015 Wotton KR, Jiménez-Guri E, Crombach A, Janssens H, Alcaine Colet A, Lemke S, Schmidt-Ott U, **Jaeger J**. Quantitative system drift compensates for altered maternal inputs to the gap gene network of the scuttle fly *Megaselia abdita*. *eLIFE* 4: e04785.

Wotton KR, Jiménez-Guri E, **Jaeger J**. Maternal co-ordinate gene regulation and axis polarity in the scuttle fly *Megaselia abdita*. *PLOS Genet* 11: e1005042.

Wotton KR, Jiménez-Guri E, Crombach A, Cicin-Sain D, **Jaeger J**. High-resolution gene expression data from blastoderm embryos of the scuttle fly *Megaselia abdita*. *Sci Data* 2:150005.

Cicin-Sain D, Hermoso Pulido A, Crombach A, Wotton KR, Jiménez-Guri E, Taly J-F, Roma G, **Jaeger J**. SuperFly: a comparative database for quantified spatio-temporal gene expression patterns in early dipteran embryos. *Nucl Acids Res* 43 (Database Issue): D752–6.

Jaeger J, Monk N. Everything flows: a process perspective on life. *EMBO Rep* 16: 1064–7.

Jaeger J, Laubichler M, Callebaut W. The comet cometh: evolving developmental systems. *Biol Theor* 10: 36–49.

Green S, Fagan M, **Jaeger J**. Explanatory integration challenges in evolutionary systems biology. *Biol Theor* 10: 18–35.

Villaverde AF, Henriques D, Smallbone K, Bongard S, Schmid J, Cicin-Sain D, Crombach A, Saez-Rodriguez J, Mauch K, Balsa-Canto E, Mendes P, **Jaeger J**, Banga JR. BioPreDyn-bench: a suite of benchmark problems for dynamic modelling in systems biology. *BMC Syst Biol* 9: 8.

2014 **Jaeger J**, Monk N. Bioattractors: dynamical systems theory and the evolution of regulatory processes. *J Physiol* 592: 2267–81.

Crombach A, García-Solache M, **Jaeger J**. Evolution of early development in dipterans: reverse-engineering the gap gene network in the moth midge *Clogmia albipunctata* (Psychodidae). *BioSystems* 123: 75–85.

Verd B, Crombach A, **Jaeger J**. Classification of transient behaviours in a time-dependent toggle switch model. *BMC Syst Biol* 8: 43.

Jaeger J, Sharpe J. On the concept of mechanism in development. In: *Towards a Theory of Development*, Minelli A, Pradeau T (eds), Oxford Univ Press, Oxford.

Jiménez-Guri E, Wotton KR, Gavilán B, **Jaeger J**. A staging scheme for the development of the moth midge *Clogmia albipunctata*. *PLoS ONE* 9: e84422.

Wotton KR, Jiménez-Guri E, García Matheu B, **Jaeger J**. A staging scheme for the development of the scuttle fly *Megaselia abdita*. *PLoS ONE* 9: e84421.

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2012 Crombach A, Wotton KR, Cicin-Sain D, Ashyraliyev M, **Jaeger J**. Efficient reverse-engineering of a developmental gene regulatory network. *PLoS Comp Biol* 8: e1002589.

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2011 **Jaeger J**. The gap gene network. *Cell Mol Life Sci* 68: 243–74.

2010 García-Solache M, **Jaeger J**, Akam M. A systematic analysis of the gap gene system in the moth midge *Clogmia albipunctata*. *Dev Biol* 344: 308–18.

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2009 (contd.) **Jaeger J**, Martinez-Arias A. Getting the measure of positional information. *PLoS Biology* 7: e1000081.

2008 **Jaeger J**, Irons D, Monk N. Regulative feedback in pattern formation: towards a general relativistic theory of positional information. *Development* 135: 3175–83.

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2007 **Jaeger J**, Sharp DH, Reinitz J. Known maternal gradients are not sufficient for the establishment of gap domains in *Drosophila melanogaster*. *Mech Dev* 124: 108–28.

2006 **Jaeger J**, Reinitz J. On the dynamic nature of positional information. *BioEssays* 28: 1102–11.

Janssens H, Hou S, **Jaeger J**, Kim A-R, Myasnikova E, Sharp DH, Reinitz J. Quantitative and predictive model of transcriptional control of the *Drosophila melanogaster even skipped* gene. *Nat Genet* 38: 1159–65.

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2004 **Jaeger J**, Surkova S, Blagov M, Janssens H, Kosman D, Kozlov KN, Manu, Myasnikova E, Vanario-Alonso CE, Samsonova M, Sharp DH, Reinitz J. Dynamic control of positional information in the early *Drosophila* blastoderm. *Nature* 430: 368–71.

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2002 **Jaeger J**, Goodwin BC. Cellular oscillators in animal segmentation. *In Silico Biol* 2: 111–23.

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Seminars / Lectures

(invited talks unless otherwise noted)

2025	Future Foundation Talk, WU Vienna, AT
	IIASA, Young Scientists Summer Program (YSSP), Laxenburg, AT
	Mathbio Seminar, Charles Univ, Prague, CZ
2024	Google Research – Paradigms of Intelligence, online
	Workshop: The Organic and the Normative, Uni Ljubljana, SI
	Computational Phenomenology Working Group (Karl Friston), online
2023	Workshop: What is Life? – Beyond Reductionism, Uni Ljubljana, SI
	FIAS Workshop: Condensed Complexity, Frankfurt, DE
	Complexity Science Hub (CSH) Vienna, AT
	ÖAW Colloquium: Convergence? Interfaces of the Digital & the Living, Vienna, AT
	Bernstein Conference Satellite: Machine Learning & Neuroscience, Berlin, DE
	Workshop: Agency & Life, Univ of the Aegean, Syros, GR
	Ronin Institute, Lightning Talk, online
	Séminaire Philbio, IHPST - Univ Paris 1 Panthéon-Sorbonne, Paris, FR
	Conferencia Amazónica: Herencia, Biodiversidad y Ambiente, IKIAM, CO
	Workshop: Toward a Science of Intrinsic Purposiveness, Paris, FR
	IIASA/ÖAW/UNEP, Human Development, Sustainability, and Agency, Vienna, AT
	EvoLunch Seminar, Institute for Science and Technology (IST) Austria, Vienna, AT
2022	University College London, Cell & Developmental Biology Seminar, London, UK
	Workshop: Modeling Life, Basque Center for Applied Mathematics, Bilbao, ES
	Departmental Seminar, Dept of Biology, University of Graz, AT
	Workshop: The New Naturalism, Wissenschaftskolleg zu Berlin, DE
	Workshop: Modalities in Science, Dept of Philosophy, Uni Geneva, CH
	Center for Molecular & Cellular Bioengineering, Dresden, DE
	MPI for Human Cognitive & Brain Sciences, Leipzig, DE
2021	Evolutionary Knowledge for Everyone (EvoKE), Barcelona, ES
	CSIC Institute of Evolutionary Biology (IBE), Barcelona, ES
	Max Planck Research School for Evolutionary Biology, DE
	Réunion Référents Science Ouverte France, Paris, FR
2020	Departmental Seminar, Sainsbury Laboratory, Cambridge, UK
	Jeudis de l'Histoire et de la Philosophie des Sciences, ENS Paris, FR
	Institute Seminar, Friedrich Miescher Institute (FMI), Basel, CH
	EvoLunch Seminar, Institute for Science and Technology (IST) Austria, Vienna, AT
	Fellow Seminar, Institut d'Études Avancées (IEA) Paris, FR
	CEFISES Seminar, Université Catholique de Louvain-la-Neuve, BE
	Public Seminar, Stellenbosch University/STIAS, Stellenbosch, ZA
2019	Institute Seminar, Instituto Gulbenkian de Ciência, Oeiras, PT
	Webster Private University Vienna, AT
	Centre for Advanced Study (CAS), Oslo, NO
	Intl Soc for Hist, Phil & Soc Stud of Biology (IHSPSSB) 2019, Oslo, NO
	Thinking About Science, Philosophy & Science Seminar, IST Austria, Vienna, AT
	Egenis (The Centre for the Study of Life Sciences), University of Exeter, Exeter, UK
	Sciences in Context, Centre de Recherches Interdisciplinaires (CRI), Paris, FR
	Institut de Biologie, Paris-Seine (IBPS), Paris, FR
	Evo-Devo Seminar, Cambridge University, Cambridge, UK
	DSC External Seminar, The Crick Institute, London, UK
	Institut d'Histoire et de Philosophie des Sciences & des Techniques (IHPST), Paris, FR
	Masterclass, Centre de Recherches Interdisciplinaires (CRI), Paris, FR
2018	Centre Cavaillès, École Normale Supérieure (ENS), Paris, FR
	Seminar de l'Institut Jacques Monod, Paris, FR

2018	Réseau de Biologie des Systèmes, Sorbonne Université, Paris, FR
(contd.)	Austrian Research Institute for Artificial Intelligence (OFAI), Vienna, AT
	International Study Group for Systems Biology (ISGSB), Tromsø, NO
	EvoPAD Student Seminar, University of Münster, Münster, DE
	Institute for Advanced Study, University of Amsterdam, NL
	Conference: "A Process Ontology for Contemporary Biology", London, UK
	IAS-Research, University of the Basque Country, San Sebastian, ES
	Philosophy & Biology Seminar, Université de Bordeaux, FR
2017	Univ Nice Sophia Antipolis, Nice, FR
	Institute pour la Génomique Fonctionnelle Lyon (IGFL), Lyon, FR
	Charles Univ, Prague, CZ
	Research Seminar, The Turing Center, ETH Zurich, CH
	Workshop: Organisation as a Theoretical Principle for the Life Sciences, Paris, FR
	Seminar, Institute Jacques Monod, Paris, FR
	Workshop: Causal Foundations of Biological Information, KLI Klosterneuburg, AT
	Engineering of Chemical Complexity, Vilanova i la Geltrú, ES
	Workshop: Cause and Process in Evolution, KLI Klosterneuburg, AT
	Workshop: Organisms – Living Systems and Processes, Univ of Exeter, UK
	Dome of Visions, Royal Institute of Technology (KTH), Stockholm, SE
	DK "Sciences in Historical, Philosophical & Cultural Context", Vienna, AT
	Biotechnology Institute, University of Helsinki, FI
2016	Workshop, "The Nature of our Biophilic Universe", Rome, IT
	Philosophy of Science Association (PSA) Meeting, Atlanta, USA
	Workshop, "Networks in Biology", Göttingen, DE
	Euro Evo Devo, Uppsala, SE
	Workshop "Chemolution", Dept of Theoretical Chemistry, University of Vienna, AT
	COSB Seminar, University of Vienna, AT
	Workshop "Life Sciences & Simulation", MECS, Lüneburg, DE
	Max Planck Institute for Cell Biology & Genetics (MPI-CBG), Dresden, DE
	Workshop on Evolutionary Systems Biology, Hinxton, UK
	Vienna BioCenter Recess, Schloss Hernstein, Vienna, AT
	Natural History Museum, London, UK
2015	Complexity Colloquium, Nové Hrady, University of Southern Bohemia, CZ
	EvoLunch Seminar, IST Austria, Klosterneuburg, AT
	Workshop "Theory in EvoDevo", Pan-American Evo-Devo Meeting, Berkeley, USA
	Institute of Genetics, University of Cologne, Cologne, DE
	MSB Seminar, Institute for Theoretical Biology, Humboldt University, Berlin, DE
	KLI Colloquium, Konrad Lorenz Institute, Vienna, AT
2014	Berlin Institute for Medical Systems Biology (BIMSB), Berlin, DE
	Workshop "Novelty in Biological, Social & Technological Systems", Santa Fe, USA
	Junior European Drosophila Investigators (JEDI) Meeting, Carry-le-Rouet, FR
	Workshop on "Explaining Development", Istituto Veneto, Venice, IT
	Euro Evo Devo, Vienna, AT
	7th Intl Symposium on Molecular Insect Science, Amsterdam, NL
	Symposium on "Molecular Mechanisms in Development and Evolution", Basel, CH
	Dept for Craniofacial Development, Kings College, London, UK
2013	NESCent Evo-Devo Workshop, Durham, USA
	CRG/CIFAR Genetic Networks Meeting, Barcelona, ES
	European Conference on Complex Systems (ECCS), Barcelona, ES
	Konrad Lorenz Institute Workshop on Evolutionary Systems Biology, Vienna, AT
	Society for Experimental Biology (SEB), Annual Meeting, Valencia, ES
	UB-CRG Biophysics Workshop, Barcelona, ES
	CRG-RIKEN Joint Meeting, Barcelona, ES
	Developmental Biology Colloquium, Univ of Göttingen, DE
	National Institute for Medical Research, Mill Hill, London, UK

2012 School of Mathematics and Statistics, Univ of Sheffield, UK
1st Spanish Drosophila Research Conference, Aiguablava, Begur, ES
Perspectives in Translational Medicine, CRG, Barcelona, ES
Contributed Talk, EVONET Symposium Vienna, AT
Euro Evo Devo, Lisbon, PT
Evo-Devo Seminar, Dept of Zoology, Univ of Cambridge, UK
Talk, ESF Conference "Systems Biology of Drosophila Development", Pultusk, PL
Institute for Theoretical Biology, Humboldt Univ, Berlin, DE
Contributed Platform Talk, Drosophila Research Conference, Chicago, USA

2011 Systems Biology Dept, Univ of Exeter, UK
Instituto Gulbenkian de Ciência, Lisbon, Portugal
Barcelona Developmental Biology Retreat, Sant Feliu de Guíxols, Spain
Contributed Talk, European Society for Evolutionary Biology, Tübingen, DE
European Conference for Mathematical & Theoretical Biology, Krakow, Poland
British Societies for Cell & Dev Biology, Joint Spring Meeting, Canterbury, UK
Workshop on "Reflexive Systems Biology", Bergen, NO
Centro Andaluz de Biología del Desarrollo (CABD), Sevilla, ES
Invited Workshop Talk, Drosophila Research Conference, San Diego, USA

2010 Meeting of the Spanish Systems Biology Network, Barcelona, ES
EMBO Conference "From Functional Genomics to Systems Biol.", Heidelberg, DE
EMBO Workshop "Systems Biology of Development", Ascona, CH
Institute for Developmental Biology & Cancer, Nice, FR
Intl Symposium on Networks in Biology (ISNB), Amsterdam, NL
Invited Student Seminar, Institute for Population Genetics, Vienna, AU
British Council Workshop, Systems Approaches to Dev. Biology, Ronda, ES
Institute for Research in Biomedicine (IRB), Barcelona, ES

2009 École Normale Supérieure, Paris, FR
CWI Minisymposium, Univ of Amsterdam, NL
Biochemistry and Genetics Seminars, Stony Brook Univ, USA
Darwin Seminar Series, Univ of Chicago, USA
Circle de Conferències sobre Biologia de Sistemes, Univ of Vic, ES
Symposium on Evolution, Genes and Networks, Utrecht, NL

2008 Physics of Living Matter III, Cambridge, UK
Euro Evo Devo, Ghent, BE
European Conference for Mathematical & Theoretical Biology, Edinburgh, UK
Intl Symposium on Networks in Biology (ISNB), Amsterdam, NL
Cambridge Fly Seminar Series, Cambridge, UK
Workshop on Gene Regulation and Noise, Univ of Sao Paulo, Sao Carlos, BR
Physics of Living Matter II, Cambridge, UK
Cell & Developmental Biology Seminar, Biozentrum, Basel, CH
Contributed Talk, Biology without Borders, Microsoft Research, Trento, IT
British Society for Developmental Biology, Autumn Meeting, Sheffield, UK
Population and Evolutionary Approaches to Biological Systems, Cambridge, UK

2007 Marie Curie Zoonet Meeting, Heraklion, GR
Contributed Talk, Swiss Society for Experimental Biology (USGEB), Basle, CH
Intl Symposium on Networks in Biology (NBIC-ISNB), Amsterdam, NL
Developmental and Neurobiology Seminar Series, NIMR, Mill Hill, London, UK

2006 Cambridge Fly Seminar Series, Cambridge, UK

2004 Seminar Series in Quantitative Biology, McGill Univ, Montreal, CA
Dynamics, Control and Computation in Biochemical Networks, Banff, CA
Contributed Talk, Drosophila Research Conference, Washington DC, USA

2003 Theoretical Division/Complex Systems Group, Los Alamos NM, USA

2002 City Seminar in Bioinformatics, St. Petersburg, RU
Modelling for Integration with Proteins, Networks & Signals, Sheffield, UK

2001 Isaac Newton Institute for Mathematical Sciences, Cambridge, UK

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