

CURRICULUM VITAE
The Johns Hopkins University School of Medicine

DEMOGRAPHIC AND PERSONAL INFORMATION

Current Appointments

07/2021 Assistant Professor at Johns Hopkins University School of Medicine,
Dept. of Molecular Biology and Genetics

Personal Data

Address: 725 N. Wolfe Street. PCTB 802A. Baltimore, MD 21205
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Education and Training

1996-2000 Licenciatura (Bachelor/Master equivalent); Biology; Universidad de Buenos Aires, Argentina
GPA 9.65/10
2000-2006 Ph.D.; Biochemistry, Cell and Molecular Biology; Johns Hopkins School of Medicine; Baltimore
PhD. Advisor: Prof. Rachel Green
2006-2012 Postdoc; Molecular Biology and Genetics; Columbia University; New York
Postdoctoral Advisor: Prof. Oliver Hobert

Professional Experience

01/2013-06/2021 Group Leader; Research Institute of Molecular Pathology (IMP); Vienna, Austria

PUBLICATIONS:

Original Research

1. **Cochella L** & Green R Isolation of antibiotic resistance mutations in the rRNA by using an in vitro selection system. *Proc. Natl. Acad. Sci. U.S.A.* 2004;101,3786–3791.
2. **Cochella L** & Green R An active role for tRNA in decoding beyond codon:anticodon pairing. *Science*. 2005;308, 1178–1180.
3. **Cochella L**, Brunelle JL & Green R. Mutational analysis reveals two independent molecular requirements during transfer RNA selection on the ribosome. *Nat. Struct. Mol. Biol.* 2007;14,30–36.
4. Tursun B¹, **Cochella L**¹, Carrera I & Hobert O. A toolkit and robust pipeline for the generation of fosmid-based reporter genes in *C. elegans*. *PLoS ONE*. 2009;4,e4625. ¹Equal contribution
5. Didiano D, **Cochella L**, Tursun B & Hobert O. Neuron-type specific regulation of a 3'UTR through redundant and combinatorially acting cis-regulatory elements. *RNA*. 2010;16,349–363.
6. Poole RJ, Bashllari E, **Cochella L**, Flowers EB & Hobert O. A Genome-Wide RNAi Screen for Factors Involved in Neuronal Specification in *Caenorhabditis elegans*. *PLoS Genet.* 2011;7, e1002109.
7. Zheng G, **Cochella L**, Liu J, Hobert O & Li W-H Temporal and spatial regulation of microRNA activity with photoactivatable antimirs. *ACS Chem. Biol.* 2011;6,1332–1338.
8. **Cochella L*** & Hobert O*. Embryonic priming of a miRNA locus predetermines postmitotic neuronal left/right asymmetry in *C. elegans*. *Cell*. 2012;151,1229–1242. *Co-corresponding authors
9. **Cochella L**, Tursun B, Hsieh Y-W, Galindo S, Johnston RJ, Chuang C-F & Hobert O. Two distinct types of neuronal asymmetries are controlled by the *Caenorhabditis elegans* zinc finger transcription factor *die-1*. *Genes & Development*. 2014;28,34–43.
10. Drexel T, Mahofsky K, Latham R, Zimmer M & **Cochella L**. Neuron type-specific miRNA represses two broadly expressed genes to modulate an avoidance behavior in *C. elegans*. *Genes & Development*. 2016;30,2042–2047.
11. Alberti C, Manzenreither RA, Sowemimo I, Burkard TR, Wang J, Mahofsky K, Ameres SL* & **Cochella L***. Cell-type specific sequencing of microRNAs from complex animal tissues. *Nat Meth.* 2018;15,283–289. *Co-corresponding authors

12. Finger F, Ottens F, Springhorn A, Drexel T, Proksch L, Metz S, **Cochella L** & Hoppe T. Olfaction regulates organismal proteostasis and longevity via microRNA-dependent signalling. *Nature Metabolism*. 2019;1,350–359.
13. Hong R, Riebesell M, Bumbarger D, Cook S, Sarpolaki T, Carstensen H, **Cochella L**, Castrejon J, Moreno E, Sieriebriennikov B, Hobert O & Sommer R. Evolution of neuronal anatomy and circuitry in two highly divergent nematode species. *eLife*. 2019;8,1246.
14. Charest, J., Daniele, T., Wang, J., Bykov, A., Mandlbauer, A., Asparuhova, M., Röhsner, J., Gutiérrez-Pérez, P. and Cochella, L. Combinatorial action of temporally segregated transcription factors. *Dev. Cell*. 2020;55(4),483-499.
15. Dexheimer, P.J., Wang, J. and Cochella, L. Two miRNAs are sufficient for embryonic patterning in *C. elegans*. *Curr. Biol*. 2020; S0960-9822(20)31436-6. doi: 10.1016/j.cub.2020.09.066.
16. Gutiérrez-Pérez, P., Santillán, E.M., Lendl, T., Schrempf, A., Steinacker, T.L., Asparuhova, M., Brandstetter, M., Haselbach, D. and Cochella, L. A deeply conserved miR-1 dependent regulon maintains muscle homeostasis. *bioRxiv* <https://doi.org/10.1101/2020.08.31.275644> (2020).
17. Yelagandula, R. *et al.* **Cochella, L.*** and Elling U.* Multiplexed detection of SARS-CoV-2 and other respiratory infections in high throughput by SARSeq. *Nat. Comms*. 2021; 12(1):3132. Previously on *medRxiv* <https://doi.org/10.1101/2020.10.28.20217778>. *Co-corresponding, equal contribution.
18. Özkan, E. *et al.* Elling U.* and **Cochella, L.*** High-throughput mutational surveillance of the SARS-CoV-2 spike gene. *medRxiv* <https://www.medrxiv.org/content/10.1101/2021.07.22.21259587v1> (2021). *Co-corresponding, equal contribution.
19. Calderón, L. *et al.* **Cochella, L.** and Busslinger, M. Pax5 regulates B cell immunity by promoting PI3K signaling via PTEN down-regulation. *Sci. Immunol*. 2021; 6(61):eabg5003.

Review Articles

1. **Cochella L** & Green R. Wobble during decoding: more than third-position promiscuity. *Nat. Struct. Mol. Biol*. 2004;11,1160–1162.
2. **Cochella L** & Green R. Fidelity in protein synthesis. *Curr. Biol*. 2005;15,R536–40.
3. Youngman EM, **Cochella L**, Brunelle JL, He S & Green R. Two distinct conformations of the conserved RNA-rich decoding center of the small ribosomal subunit are recognized by tRNAs and release factors. *Cold Spring Harbor Symposia on Quantitative Biology*. 2006;71,545–549.
4. **Cochella L** & Hobert O. Diverse functions of microRNAs in nervous system development. *Curr. Top. Dev. Biol*. 2012;99,115–143.
5. Alberti C & **Cochella L**. A framework for understanding the roles of miRNAs in animal development. *Development*. 2017;144,2548–2559.
6. Dexheimer P & **Cochella L**. MicroRNAs: from mechanism to organism. *Front. Cell Dev. Biol*. 2020; 8,409. doi: 10.3389/fcell.2020.00409. eCollection 2020.
7. Ketting RF & **Cochella L**. Concepts and functions of small RNA pathways in *C. elegans*. *Curr. Top. Dev. Biol*. 2020. <https://doi.org/10.1016/bs.ctdb.2020.08.002>. Online ahead of print.

FUNDING (in chronological order, earliest first by start date under each subcategory)

EXTRAMURAL Funding (Show as current, pending, previous under each subcategory and follow format above.)

Current:

01/2020-12/2022 Transcriptional priming in neuronal diversification
P32636-B
Austrian Science Fund (FWF)
EUR 407,000
Principal Investigator, 50% effort

Previous:

02/2014-01/2020 Spatio-temporal specificity of miRNA function
ERC-StG-337161
European Research Council (ERC)
EUR 1,499,000
Principal Investigator, 60% effort

- 01/2015-07/2019 Roles of miRNAs in nervous system development
SFB-F43-23
Austrian Science Fund (FWF)
EUR 349,000
Principal Investigator, 20% effort
- 01/2017-12/2019 Doctoral Program Plus: RNA Biology
W-1207-B09
Austrian Science Fund (FWF)
EUR 150,000
Co-PI, Network grant for PhD program in RNA biology

EDUCATIONAL ACTIVITIES

Teaching

Workshops /seminars

- 2013-2021 One lecture per year as part of a Doctoral School in RNA biology at Vienna Biocenter (PhD students)
- 2013-2021 One lecture per year as part of an annual *C. elegans* course at University of Vienna (Master's students)
- 2013-2021 One journal club per year for the introductory course for all PhD students at the Vienna Biocenter
- 09/2017 Lecturer at the International *C. elegans* course at CRG in Barcelona, Spain (MSc/PhD level)
- 10/2019 Lecturer at ICGEB Course on Gene Expression in Development in Rosario, Argentina (MSc/PhD level)
- 08/2019 Lecturer at RNA Summer School of the NCCR Network in Saas-Fee, Switzerland (MSc/PhD level)
- From 08/2021 In charge of the BCMB Seminar Course
- From 08/2021 One lecture per year as part of the Molecular Biology & Genetics course at Johns Hopkins Medicine

Mentoring

Pre-doctoral Advisees /Mentees

- 2013-2017 Tanja Drexel, PhD. Currently Medical Advisor at Novartis Oncology
Received her PhD under my supervision. Shared publications 10 and 12 in this CV
- 2013-2016 Thomas Steinacker, MSc. Currently PhD candidate at University of Oxford
Received his MSc under my supervision. Shared publication 16.
- 2014-2019 Chiara Alberti, PhD. Currently Postdoc at University of Zurich
Received her PhD under my supervision. Shared publication 11 and review 5 in this CV
- 2016-2020 Julien Charest, PhD. Currently Senior Research Assistant at BI X - MARVL.
Received his PhD under my supervision. Shared publication 14.
- 2016-2020 Philipp Dexheimer, PhD. Currently Senior Research Assistant in the Clausen Lab at IMP, Vienna.
Received his MSc and PhD degrees under my supervision. Shared publication 15 and review 6 in this CV.
- 2016-2021 Paula Gutierrez Perez, PhD. Currently working as a post-doc under my supervision
Received her PhD under my supervision. Shared publication 16.
- 2017-2018 Anna Schrempf. Currently PhD candidate at CeMM, Vienna
Received her MSc under my supervision. Shared publication 16.
- 2017-2018 Xue Strobl. Currently PhD candidate at University of Vienna
Received her MSc under my supervision.
- 2017-present Aleksandr Bykov, MSc. Currently working towards his PhD under my supervision. Shared publications 14 and 17.
- 2018-present Emilio Santillan, Licenciado. Currently working towards his PhD under my supervision. Shared publication 16.
- 2018-present Ariane Mandlbauer, MSc. Currently working towards her PhD under my supervision.
Obtained her master's degree under my supervision. Shared publication 14.
- 2020 Josef Röhner, BSc. Worked in the lab for a year before starting his MSc. Shared publication 14.

Post-doctoral Advisees /Mentees

- 2014-2019 Thomas Daniele, PhD. Co-founder and CSO at Blue Planet
Shared publication 14.
- 2017-2021 Jingkui Wang, PhD. Currently Senior Bioinformatician in the Tanaka Lab at IMP, Vienna
Shared publications 11, 14, 15 in this CV.

Thesis committees

Since 2013 I have been a member of 26 Thesis Advisory Committees (in Austria, Switzerland and Germany) and an examiner in 28 PhD Thesis Defenses (in Austria, Switzerland, Denmark, France, Czech Republic and England), in addition to the ones from my own lab

ORGANIZATIONAL ACTIVITIES

Institutional Administrative Appointments

Since 2014 Member of the Max Birnstiel Seminar Series Committee. IMP, Vienna, Austria
Since 2016 Chair of the Vienna BioCenter Seminar Series Committee, Austria
2016–2018 Member of Group Leader Search Committee for three searches at the Institute of Molecular Biotechnology (IMBA), Vienna, Austria
2018 Member of Group Leader Search Committee for the Max Perutz Laboratories, Vienna, Austria

Editorial activities

2020–2021 Co-editor of Frontiers Research Topic Issue on “Neuronal identity: from fate specification to function”

Journal peer review activities

Since 2013 Ad hoc reviewer for the following scientific journals: Cell Reports, Current Biology, Development, eLife, EMBO Journal, Genetics, Genome Research, Journal of Cell Biology, Nature, Nature Communications, Neuron, Nucleic Acids Research, RNA, RNA Biology and Science

Other review activities

2014 External grant reviewer, National Science Foundation
2014–2015 External reviewer for Boehringer Ingelheim Fonds PhD fellowships
2020 External reviewer for Israel Science Foundation

Advisory Committees, Review Groups/Study Sections

Since 2020 Advisory Board of Review Commons (<http://reviewcommons.org>)
2020 Member of the RNA Society Nominating Committee to select candidates to run for President and Society Board Members

Professional Societies

2015-2019 Member of the Management Committee of the GENiE Network (Group of Young *C. elegans* Investigators in Europe). COST Action BM1408
Since 2007 Member of the Genetics Society of America (GSA)
Since 2018 Member of the RNA Society

Conference Organizer (separate into JHMI/Regional - National - International activities)

2014 Scientific Committee Member for the 2014 European *C. elegans* meeting. Berlin
300 international participants
Since 2015 Co-organizer of the Annual RNA Microsymposium at the Vienna Biocenter, Austria
150-200 international participants (www.imba.oeaw.ac.at/microsymposium/)
2015 & 2017 Scientific Committee Member for the International *C. elegans* meeting. Los Angeles
>1,500 international participants
2020 Co-organizer of the biennial International *C. elegans* Neuroscience meeting (postponed due to covid)
2021 Invited to co-organize the EMBO Workshop on Noncoding RNAs in Development and Cell Differentiation in Rehovot, Israel (postponed due to covid)

RECOGNITION

Awards, Honors

2005 Alicia Showalter Reynolds, Johns Hopkins Young Investigator Award for PhD work
2006 Elected to Phi Beta Kappa Honor Society
2007–2010 Helen Hay Whitney Foundation Postdoctoral Fellowship
2014–2020 ERC Starting Grant

Invited Talks (such as grand rounds, keynote addresses, visiting professorships. *Do not duplicate entries already shown above.*)

Selected invited oral presentations (last 5 years): including future dates in gray

- 08/2016 Invited Speaker at Gordon Conference on Neural Development, Rhode Island, USA
- 10/2016 Invited Speaker at Berlin RNA Meeting, Berlin, Germany
- 02/2017 Invited Speaker at First Latin American C. elegans Meeting, Montevideo, Uruguay
- 03/2017 Invited Seminar at MPI/CECAD, Cologne, Germany
- 03/2017 Invited Seminar at CABD, Seville, Spain
- 05/2017 Invited Speaker at Small RNA Microsymposium, Vienna, Austria
- 09/2017 Invited Speaker at AXON2017 – Molecular Mechanisms of Neural Circuit Assembly, Klosterneuburg, Austria
- 10/2017 Invited Seminar at MRC Human Genetics Unit, IGMM, Edinburgh, UK
- 11/2017 Invited Seminar at Rockefeller University, New York, USA
- 03/2018 Invited Seminar at Imperial College, London, UK
- 04/2018 Invited Speaker at EMBO Workshop on Noncoding RNAs in Development and Cell Differentiation, Rehovot, Israel
- 06/2018 Invited Speaker at EMBO Workshop on Development, Cell Biology & Gene Expression in C.elegans, Barcelona, Spain.
- 10/2018 Invited Speaker at Metazoan Systems Biology Workshop, Bordeaux, France
- 12/2018 Invited Speaker at EMBO Workshop on Mechanisms of Neuronal Remodeling, Ein Gedi, Israel
- 02/2019 Invited Seminar at VIB Leuven Center for Brain and Disease Research, Belgium
- 04/2019 Invited Seminar at Institute of Biotechnology, University of Helsinki, Finland
- 06/2019 Invited Seminar at Albert Einstein College of Medicine, Bronx, USA
- 10/2019 Invited Seminar at Johns Hopkins University School of Medicine, Baltimore, USA
- 10/2019 Invited Speaker at Meeting of the Latin American Society for Developmental Biology, Buenos Aires, Argentina
- 12/2019 Invited Seminar at LMU, Munich, Germany
- 01/2020 Invited Speaker at UTRs in Development and Disease, Bellairs Research Institute, Barbados
- 02/2020 Invited Speaker at 9th Course on Non-coding Genomes, Institut Curie, Paris (online due to covid)
- 04/2020 Invited Seminar at University College London (UCL), UK (online due to covid)
- 09/2020 Invited Seminar at Universidad Nacional Autonoma de Mexico (UNAM), Mexico (online due to covid)
- 10/2020 Invited Seminar at Universidad Autonoma de Madrid, Spain (online due to covid)
- 01/2021 Invited Speaker at SfN Connectome - A virtual event (online due to covid)
- 01/2021 Invited Seminar at RNA Club, Cambridge, UK (online due to covid)
- 03/2021 Invited Seminar at Stem Cell Institute, Cambridge, UK (online due to covid)
- 03/2021 Invited Seminar at Biozentrum, Basel, Switzerland (online due to covid)
- 05/2021 Invited Speaker at EMBO/EMBL Symposium: The identity and evolution of cell types (online)
- 06/2021 Invited Speaker at 23rd International C. elegans conference (online due to covid)
- 07/2021 Invited Speaker at REPU Summit, organized by undergraduate students in Perú (<https://www.repuprogram.org/>)
- 09/2021 Invited Seminar at Johns Hopkins University Neuroscience Department, Baltimore, USA
- 11/2021 Invited Seminar at Columbia University Dept. of Biological Sciences, New York, USA
- 11/2021 Invited Seminar at Life Sciences Institute, University of British Columbia, Canada
- 11/2021 Invited Speaker at SAB Symposium (Argentine Society of Biology), Chascomús, Argentina
- 01/2022 Invited Seminar at Babraham Institute, Cambridge, UK

OTHER PROFESSIONAL ACCOMPLISHMENTS

Outreach/Science Education

- 2016 and 2020 Judge in the “Genes in Space” Competition for High School students (grades 7-12) (<https://www.genesinspace.org>)
- 2018-2019 Co-organizer of a Women in Science event at the Vienna BioCenter, during which invited female speakers led round table discussions with students and postdocs

- 2020 Currently co-organizing testing efforts for SARS-CoV-2 at the Vienna BioCenter, with multiple members of the RNA community in Vienna
- 2020 Organized and secured funding from EMBO for a Women in Science panel discussion (to be led by Prof. Piali Sengupta) at the upcoming *C. elegans* Neurobiology meeting which I am co-organizing. *meeting postponed due to COVID-19

Patents Filed

- Oct. 19, 2020 Claim EP20202627 filed to European Patent Office - Related to: SARSeq, a robust and highly multiplexed NGS assay for parallel detection of SARS-CoV-2 and other respiratory infections

Other

- Since 01/2021 Established a small team that uses SARSeq to monitor the appearance and spread of SARS-CoV-2 variants in Austria, supported by a contract with AGES (Austrian Agency for Health and Food Safety) and the Austrian Ministry of Health
- Since 11/2020 External consultant for Alector, a company focused on gene therapies for neurodegenerative disorders