

**Jolanda van Leeuwen, PhD**

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**EMPLOYMENT & EDUCATION**

- 2018-present **Tenure-track Assistant Professor**  
University of Lausanne, Switzerland
- 2011-2018 **Postdoctoral fellow & Research associate in Functional Genomics**  
University of Toronto, Canada  
Advisors: Drs. Charlie Boone & Brenda Andrews
- 2006-2011 **PhD in Molecular Toxicology**  
VU University Amsterdam, the Netherlands  
Advisor: Dr. Nico Vermeulen
- 2004-2006 **MSc in Chemistry** (*cum laude*)  
Leiden University, the Netherlands & Trieste University, Italy  
Advisors: Drs. Jan Reedijk & Gianni Sava
- 2001-2004 **BSc in Chemistry** (*cum laude*)  
Leiden University, the Netherlands

**GRANTS, FELLOWSHIPS & AWARDS**

- 2019-2024 Swiss National Science Foundation, Eccellenza grant, CHF 1 500 000.
- 2013-2016 Canadian Institutes of Health Research, postdoctoral fellowship, CAD 135 000.
- 2008-2010 Travel awards, Organization for the advancement of biochemical research (BioVU) and Royal Dutch Chemistry Society (KNCV), EUR 4 000.
- 2009 2<sup>nd</sup> prize, national PhD student competition, FIGON Dutch Medicine Days, EUR 750.
- 2005-2006 European Cooperation in Science and Technology, short-term scientific mission grant, EUR 1 500.

**INVITED SEMINARS**

- 2020 Center for Genomic Regulation, Barcelona, Spain (February 21, 2020).
- 2020 Friedrich Miescher Institute for Biomedical Research, Basel, Switzerland (February 18, 2020).
- 2019 Dementia Research Institute, Cardiff University, UK (April 11, 2019).
- 2017 Gurdon Institute, University of Cambridge, UK (April 18, 2017).
- 2017 Institute for Systems Genetics, NYU Langone Medical Center, USA (February 15, 2017).
- 2016 Institute for Research in Biomedicine, Barcelona, Spain (September 21, 2016).

- 2016 Wellcome Trust Sanger Institute, Cambridge, UK (March 16, 2016).  
2016 Amsterdam Institute for Molecules, Medicines, and Systems, VU University Amsterdam, the Netherlands (March 14, 2016).

### **SELECTED CONTRIBUTIONS TO CONFERENCES**

- 2019-present Co-organizer. CRISPR and beyond - perturbations at scale to understand genomes, Hinxton, UK.  
2021 Co-organizer. CIG symposium, Lausanne, Switzerland.  
2020 Invited talk. European Network Biology Conference: From Networks to Modeling, Hinxton, UK  
2019 Talk. International Conference on Yeast Genetics and Molecular Biology, Gothenburg, Sweden.  
2019 Invited talk. European Society of Human Genetics conference, Gothenburg, Sweden.  
2019 Talk. Network Biology meeting, Cold Spring Harbor, USA.  
2018 Invited talk. iGenolevure meeting 'High-Throughput Technologies Applied to Yeasts', Strasbourg, France.  
2018 Invited talk. Levures, Modèles et Outils, Rheinau, Switzerland.  
2017 Talk. Canadian Institute for Advanced Research Genetic Networks meeting, Toronto, Canada.  
2017 Talk. Systems Biology: Networks meeting, Cold Spring Harbor, USA.  
2016 Talk. International Conference on Systems Biology, Barcelona, Spain.  
2016 Talk. Yeast Genetics and Molecular Biology meeting, Orlando, USA.  
2016 Talk. North East Regional Yeast meeting, Buffalo, USA.  
2016 Talk. Breast Cancer Informatics Group Genetic Networks meeting, McGill-Bellairs research institute, Barbados.  
2015 Talk. OMICs in Biomedical Research meeting, Split, Croatia.  
2015 Talk. Canadian Institute for Advanced Research Genetic Networks meeting, Toronto, Canada.  
2014 Talk. Yeast Genetics and Molecular Biology meeting, Seattle, USA.  
2010 Talk. Yeasterday, Leuven, Belgium.  
2009 Talk. FIGON Dutch Medicine Days, Lunteren, the Netherlands.

### **SUPERVISION OF TRAINEES**

- 2019-present Postdoc advisor, Amandine Batté.  
2019-present MSc research project advisor ("first-step", 3 months), Jessica Burnier.  
2019-present PhD thesis advisor, Linh Ho.  
2019-present PhD thesis advisor, Dinis Barros.

- 2019-present MSc thesis co-advisor, Romane Mizeret.
- 2018-present Postdoc advisor, Betül Ünlü.
- 2006-2017 Day-to-day supervision of 24 undergraduate students and 10 master's students.

### **SERVICE ON THESIS COMMITTEES**

- 2020 President, PhD thesis committee, Júlia Domingo (Lehner lab, Center for Genomic Regulation, Spain).
- 2019-present Member, PhD thesis committee, Alexandra Bendel (Diss lab, Friedrich Miescher Institute for Biomedical Research, Switzerland).
- 2019-present Member, PhD thesis committee, Terry Mara (Martin and Pelet labs, University of Lausanne, Switzerland).

### **TEACHING EXPERIENCE**

- 2020-present *CRISPR-Cas9 genome editing*, course for MSc students.
- 2019-present Tutor, *Write-a-review*, course for MSc students.
- 2019-present *Epistasis, Oligogenicity, Pleiotropy and beyond*, course for 3rd year BSc students.
- 2006-2017 Teaching assistant for 8 lab courses in biochemistry, cell biology, toxicology, and genomics for undergraduate and master's students.

### **OTHER ACADEMIC RESPONSIBILITIES**

- 2017-present Ad hoc manuscript reviewer for Biological Reviews; G3: Genes, Genomes, Genetics; Current Genetics; PLOS Genetics; and Journal of Molecular Biology.
- 2018-present Mentor, PROWD program, advising female postdocs at the University of Lausanne on career planning and development.
- 2013-2016 Organizer, Donnelly Centre postdoc symposium and biweekly seminars, University of Toronto.
- 2007-2009 President, committee organizing social and scientific activities for first year students in chemistry or pharmaceutical sciences, VU University Amsterdam.
- 2004-2005 Student member, educational committee for Chemistry, Leiden University.
- 2004-2005 Student member, curriculum team for the new "Molecular Science & Technology" study program, Leiden University.
- 2004-2005 Board member, chemistry student association "Chemisch Dispuut Leiden".

### **OUTREACH ACTIVITIES**

- 2017 Interview on the academic job search ([link](#))
- 2017 Outreach video: *Why study interaction networks?* ([link](#))
- 2017 Organized a visit of MSc students from VU University Amsterdam to the University of Toronto.
- 2016 Selected press coverage related to our 2016 *Science* paper on genetic suppression:

- Quanta magazine, *Why Some Genetic Miscues Are Helpful* ([link](#))  
The Scientist, *Mutation vs. Mutation* ([link](#))  
Trouw (Dutch newspaper), *Zoeken naar de rem op het gen dat ons ziek maakt*  
2011 Selected press coverage related to my PhD thesis:  
NTR Radio 5 (Dutch radio station), *Hoe?Zo!*, radio interview.  
RTL news (Dutch news agency), *Proefdieren mogelijk overbodig dankzij gist*  
AT5 news (Dutch news agency), *Gist verlost proefdieren van onderzoek*

## PEER-REVIEWED PUBLICATIONS

20. Michael Costanzo, Elena Kuzmin, **Jolanda van Leeuwen**, Barbara Mair, Jason Moffat, Charles Boone, and Brenda J. Andrews (2019) *Global genetic networks and the genotype to phenotype relationship*. *Cell*, 177, 85-100.
19. Jing Hou, **Jolanda van Leeuwen**, Brenda J. Andrews, and Charles Boone (2018) *Genetic network complexity shapes background-dependent phenotypic expression*. *Trends Genet*, 34, 578-586.
18. Elena Kuzmin\*, Benjamin VanderSluis\*, Wen Wang, Guihong Tan, Raamesh Deshpande, Yiqun Chen, Matej Usaj, Attila Balint, Mojca Mattiazzi Usaj, **Jolanda van Leeuwen**, Elizabeth N. Koch, Carles Pons, Andrius J. Dagilis, Michael Prysxlak, Zi Wang, Julia Hanchard, Margot Riggi, Kaicong Xu, Hamed Heydari, Bryan-Joseph San Luis, Ermira Shuteriqi, Hongwei Zhu, Nydia Van Dyk, Sara Sharifpoor, Michael Costanzo, Robbie Loewith, Amy Caudy, Daniel Bolnick, Grant W. Brown, Brenda J. Andrews, Charles Boone, and Chad L. Myers (2018) *Systematic analysis of complex genetic interactions*. *Science*, 360, eaao1729.
17. Myungjoo Shin, **Jolanda van Leeuwen**, Charles Boone, and Anthony Bretscher (2018) *Yeast Aim21/Tda2 both regulates free actin by reducing barbed end assembly and forms a complex with Cap1/Cap2 to balance actin assembly between patches and cables*. *Mol Biol Cell*, 29, 923-936.
16. **Jolanda van Leeuwen**, Charles Boone, and Brenda J. Andrews (2017) *Mapping a diversity of genetic interactions in yeast*. *Curr Opin Syst Biol*, 6, 14-21.
15. Traver Hart, Amy H.Y. Tong, Katie Chan, **Jolanda van Leeuwen**, Ashwin Seetharaman, Michael Aregger, Megha Chandrashekar, Nicole Hustedt, Sahil Seth, Avery Noonan, Andrea Habsid, Olga Sizova, Lyudmilla Nedyalkova, Ryan Climie, Leanne Tworzyanski, Keith Lawson, Maria Augusta Sartori, Sabriyeh Alibeh, David Tieu, Sanna Masud, Patricia Mero, Alexander Weiss, Kevin R. Brown, Matej Ušaj, Maximilian Billmann, Mahfuzur Rahman, Michael Costanzo, Chad L. Myers, Brenda J. Andrews, Charles Boone, Daniel Durocher, and Jason Moffat (2017) *Evaluation and design of genome-wide CRISPR/Cas9 knockout screens*. *G3 (Bethesda)*, 7, 2719-2727.
14. Jeff S. Piotrowski\*, Sheena C. Li\*, Raamesh Deshpande\*, Scott W. Simpkins\*, Justin Nelson, Yoko Yashiroda, Jacqueline M. Barber, Hamid Safizadeh, Erin Wilson, Hiroki Okada, Abraham A. Gebre, Karen Kubo, Nikko P. Torres, Marissa A. LeBlanc, Kerry Andrusiak, Reika Okamoto, Mami Yoshimura, Eva DeRango-Adem, **Jolanda van Leeuwen**, Katsuhiko Shirahige, Anastasia Baryshnikova, Grant W. Brown, Hiroyuki Hirano, Michael Costanzo, Brenda Andrews, Yoshikazu Ohya, Hiroyuki Osada, Minoru Yoshida, Chad L. Myers, and Charles Boone (2017) *Functional annotation of chemical libraries across diverse biological processes*. *Nat Chem Biol*, 13, 982-993.

13. **Jolanda van Leeuwen**, Carles Pons, Charles Boone, and Brenda J. Andrews (2017) *Mechanisms of suppression: the wiring of genetic resilience*. *BioEssays*, 39, 1700042.
12. Angelina Huseinovic, **Jolanda van Leeuwen**, Tibor van Welsem, Fred van Leeuwen, Nico P.E. Vermeulen, Jan M. Kooter, and J. Chris Vos (2017) *The effect of acetaminophen on ubiquitin homeostasis in Saccharomyces cerevisiae* *PLoS One* 12, e017357.
11. **Jolanda van Leeuwen\***, Carles Pons\*, Joseph C. Mellor, Takafumi N. Yamaguchi, Helena Friesen, John Koschwanez, Mojca Mattiazzi Ušaj, Maria Pechlaner, Mehmet Takar, Matej Ušaj, Benjamin VanderSluis, Kerry Andrusiak, Pritpal Bansal, Anastasia Baryshnikova, Claire Boone, Jessica Cao, Atina Cote, Marinella Gebbia, Gene Horecka, Ira Horecka, Elena Kuzmin, Nicole Legro, Wendy Liang, Natascha van Lieshout, Margaret McNee, Bryan-Joseph San Luis, Fatemeh Shaeri, Ermira Shuteriqi, Song Sun, Lu Yang, Ji-Young Youn, Michael Yuen, Michael Costanzo, Anne-Claude Gingras, Patrick Aloy, Chris Oostenbrink, Andrew Murray, Todd R. Graham, Chad L. Myers, Brenda J. Andrews, Frederick P. Roth, and Charles Boone (2016) *Exploring genetic suppression interactions on a global scale*. *Science* 354, 599.
10. Michael Costanzo\*, Benjamin VanderSluis\*, Elizabeth N. Koch\*, Anastasia Baryshnikova\*, Carles Pons\*, Guihong Tan\*, Wen Wang, Matej Ušaj, Julia Hanchard, Susan D. Lee, Vicent Pelechano, Erin B. Styles, Maximilian Billmann, **Jolanda van Leeuwen**, Nydia van Dyk, Zhen-Yuan Lin, Elena Kuzmin, Justin Nelson, Jeff S. Piotrowski, Tharan Srikumar, Sondra Bahr, Yiqun Chen, Raamesh Deshpande, Christoph F. Kurat, Sheena C. Li, Zhijian Li, Mojca Mattiazzi Ušaj, Hiroki Okada, Natasha Pascoe, Bryan-Joseph San Luis, Sara Sharifpoor, Emira Shuteriqi, Scott W. Simpkins, Jamie Snider, Harsha Garadi Suresh, Yizhao Tan, Hongwei Zhu, Noel Malod-Dognin, Vuk Janjic, Natasa Przulj, Olga G. Troyanskaya, Igor Stagljar, Tian Xia, Yoshikazu Ohya, Anne-Claude Gingras, Brian Raught, Michael Boutros, Lars M. Steinmetz, Claire L. Moore, Adam P. Rosebrock, Amy A. Caudy, Chad L. Myers, Brenda Andrews, and Charles Boone (2016) *A global genetic interaction network maps a wiring diagram of cellular function*. *Science* 353, 1381.
9. **Jolanda van Leeuwen**, Nico P.E. Vermeulen and J. Chris Vos (2012) *Yeast as a humanized model organism for biotransformation-related toxicity*. *Curr Drug Metab* 13, 1464-1475.
8. **Jolanda van Leeuwen**, Betül Ünlü, Nico P.E. Vermeulen and J. Chris Vos (2012) *Differential involvement of mitochondrial dysfunction, cytochrome P450 activity and active transport in the toxicity of structurally related NSAIDs*. *Toxicol In Vitro* 26, 197-205.
7. **Jolanda van Leeuwen**, Nico P.E. Vermeulen and J. Chris Vos (2011) *Involvement of the pleiotropic drug resistance response, protein kinase C signaling, and altered zinc homeostasis in resistance of Saccharomyces cerevisiae to diclofenac*. *Appl Environ Microbiol* 77, 5973-5980.
6. Jelle Reinen, **Jolanda van Leeuwen**, Yongmin Li, Lifang Sun, Peter D.J. Grootenhuis, Caroline J. Decker, John Saunders, Nico P.E. Vermeulen and Jan N.M. Commandeur (2011) *Efficient screening of P450 BM3 mutants for their metabolic activity and diversity towards a wide set of drug-like molecules in chemical space*. *Drug Metab Dispos* 39, 1568-1576.
5. **Jolanda van Leeuwen**, Rick Orij, Marijke Luttik, Gertien J. Smits, Nico P.E. Vermeulen and J. Chris Vos (2011) *Subunits Rip1p and Cox9p of the respiratory chain contribute to diclofenac-induced mitochondrial dysfunction*. *Microbiology* 157, 685-694.
4. **Jolanda van Leeuwen**, Galvin Vredenburg, Sanja Dragovic, T.F. Jennifer Tjong, J. Chris Vos and Nico P.E. Vermeulen (2011) *Metabolism related toxicity of diclofenac in yeast as model system*. *Toxicol Lett* 200, 162-168.

\*equal authorship

### OTHER PUBLICATIONS

3. **Jolanda van Leeuwen**, Brenda J. Andrews, Charles M. Boone, and Guihong Tan (2015) *Rapid and efficient plasmid construction by homologous recombination in yeast* (protocol). Cold Spring Harb Protoc 9, pdb.prot085100.
2. **Jolanda van Leeuwen**, Brenda J. Andrews, Charles M. Boone, and Guihong Tan (2015) *Construction of multi-fragment plasmids by homologous recombination in yeast* (topic introduction). Cold Spring Harb Protoc 9, pdb.top084111.
1. **Jolanda van Leeuwen** (2012) *Yeast as a model eukaryote in drug safety studies: New insights on diclofenac-induced toxicity* (in Dutch). BVLT 39, 225-230.