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# CURRICULUM VITAE – CHARLOTTE DE VRIES

## CONTACT INFORMATION

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## EDUCATION

- Current **PhD – Theoretical Ecology. University of Amsterdam.** Supervisor: Hal Caswell. Part of European Research Council Project: *Individual stochasticity and population heterogeneity in plant and animal demography.*
- 2015 **Master’s – Limnology and Oceanography. University of Amsterdam.** Graduated *cum laude*. Awards: Volkert van der Willigen award (€3000). Supervisor 1: Jef Huisman. Thesis 1: *Effect of environmental noise on plankton community dynamics.* Supervisor 2: André de Roos. Thesis 2: *Disentangling mortality and development rates in an Arctic copepod population.*
- 2010 **Master’s – Physics. University of Waterloo and Perimeter Institute.** Scholarship: Perimeter Scholars International Program (\$28,000 for 1 year). Supervisor: Veronica Sanz. Thesis: *Top quark compositeness: Holographic Approach.*
- 2009 **Master’s – Physics. Oxford University.** Graduated with *first-class honours*. Supervisor: Julia Yeomans. Thesis: *Tethered swimmers at low Reynolds number.* Awards: Bielby Exhibition (2008)

## ACADEMIC EXPERIENCE

- Current **PhD.** University of Amsterdam, Institute for Biodiversity and Ecosystem Dynamics. Working on an ERC project with the aim to develop theory to incorporate individual stochasticity and heterogeneity into (matrix) population models. Supervisor: Hal Caswell.
- 2014 **Masters Student.** University Centre in Svalbard and University of Amsterdam. Stage-specific mortality and total population mortality rates were estimated for an arctic copepod population from field data using a modified version of the Population Surface Method. Supervisor: Janne Søreide and André de Roos.

- 2013 **Masters Student.** University of Amsterdam, Institute for Biodiversity and Ecosystem Dynamics. Modelling the effect of environmental noise on plankton community dynamics, investigating resonance behaviour. Supervisor: Elisa Benincà and Jef Huisman.
- 2012-2014 **Researcher and Data Manager.** The Netherlands Perinatal Registry. Conducted research and produced yearly national reports on the quality of perinatal health care in the Netherlands using a large data base of nearly all births in the Netherlands. Supervisor: Chantal Hukkelhoven.
- 2010-2011 **Masters Student.** Perimeter Institute for Theoretical Physics. Composite top quark phenomenology, calculated the top quark form factor in a warped extra dimension. Supervisor: Veronica Sanz.
- 2009-2010 **Masters Student.** Oxford University, Rudolf Peierls Centre for Theoretical Physics. Analytically calculated the approximate flow field around a fixed low Reynolds number swimmer (three sphere model), and compared the effect of choosing different fixed points. Supervisor: Julia Yeomans.
- 2007 **Undergraduate Researcher.** Vrije Universiteit Amsterdam, Biophysics. Carried out lab experiments investigating excitation energy transfer in photosystem II using femtosecond infrared pump-probe spectroscopy. Supervisor: Rienk van Grondelle.

## AWARDS

- 2018 **Madeleine Julie Vervoort Fund, Amsterdams Universiteitsfonds.** Travel grant to present at the Annual Meeting of the Ecological Society of America. Value: € 700.
- 2011 **Volkert van der Willegen fund.** Research grant for Masters research in Ecology. Value: € 3000.
- 2009 **Perimeter Scholars International Scholarship.** Awarded by the Perimeter Institute for Theoretical Physics. Value: \$28,000/year for 1 year.
- 2008 **Bielby Scholarship - Undergraduate.** Scholarship from St. Hilda's College, Oxford. (£200/year for 2 years).
- 2005 **Secondary School Research project award.** Jan Kommandeur award for science research project (awarded by Groningen University ).
- 2005 **Secondary School Research project award.** Twente University national research project competition.

## TEACHING

- 2018 **Teaching Assistant Theoretical Biology.** Assisted during tutorial/problem solving sessions for the bachelor course “Theoretical Ecology” focused on teaching population modeling and analyzing systems of multiple ODEs to biology bachelor students.
- 2017 **Teaching Assistant From Analysis to Evidence.** Assisted during tutorial/problem solving sessions for the bachelor course “From Analysis to Evidence” focused on introductory statistics for Bachelor Future Planet Studies.
- 2017 **Teaching Assistant Modelling Geocological Systems.** Assisted during tutorial/problem solving sessions for a masters course “Modelling Geocological Systems” focused on Inverse Modeling techniques for Earths Sciences students.
- 2015-2017 **Head Teaching Assistant Population Biology.** Responsible for tutorial sessions for a second year Population Biology course for biology students.
- 2011 and 2014 **Teaching Assistant Population Biology.** Assisted during tutorial/problem solving sessions for a second year Population Biology course for biology students.
- 2011 **Mentor.** Mentored a small group of high school students during Perimeter Institute’s *International Summer School for Young Physicists* by guiding them through a short research project.

## PUBLICATIONS

- (4) H. Caswell, **C. de Vries**, N. Hartemink, G. Roth, S. van Daalen. *Age  $\times$  stage-classified demographic analysis: a comprehensive approach.* Ecological Monographs (2018).
- (3) **C. de Vries**, H. Caswell. *Demography when history matters: construction and analysis of second-order matrix population models.* Theoretical Ecology (2017): 1-12.
- (2) J. van Bavel, C.W. P. M. Hukkelhoven, **C. de Vries**, D.N. M. Papatsonis, J. de Vogel, J. W. R. Roovers, B.W. Mol, J.W. de Leeuw. *The effectiveness of mediolateral episiotomy in preventing obstetric anal sphincter injuries during operative vaginal delivery: a ten-year analysis of a national registry* International Urogynecology Journal (2017).
- (1) S. M.T.A. Goossens, C.W.P.M. Hukkelhoven, **L. de Vries**, B.W. Mol, J.G. Nijhuis, F.J.M.E. Roumen. *Clinical indicators associated with the mode of twin delivery: an analysis of 22,712 twin pairs.* European Journal of Obstetrics and Gynecology and Reproductive Biology 195 (2015):133 - 140.

## PAPERS SUBMITTED

- (1) **C. de Vries**, H. Caswell. *Stage-structured evolutionary demography: linking life histories, population genetics, and ecological dynamics.*

## TALKS, POSTERS

- (7) *Linking life history theory, population genetics and population ecology using evolutionary demography: a matrix population model approach.* **Conference talk:** Second Joint Conference on Evolutionary Biology. Aug 21, 2018.
- (6) *Linking life history theory, population genetics and population ecology using evolutionary demography: a matrix population model approach.* **Conference talk:** Annual Meeting of the Ecological Society of America. Aug 8, 2018.
- (5) *Combining stage-classified demography and population genetics to study eco-evolutionary dynamics.* **Conference talk:** Modeling Biological Evolution 2017. Apr 5, 2017.
- (4) *A genetic matrix population model for eco-evolutionary dynamics.* **Conference talk:** Netherlands Annual Ecology Meeting 2017. Feb 15, 2017.
- (3) *Demography when history matters: Second order matrix population models.* **Conference talk:** British Ecological Society Annual Meeting 2016. Dec 12, 2016.
- (2) *Age $\times$ stage Markov Chain Models with Rewards.* **Lecture:** Course “Matrix Approaches to Health Demography” at the Max Planck Institute for Demographic Research, Rostock, Germany. Jan 20, 2016.
- (1) *Demography when history matters: A framework for investigating second order matrix population models.* **Conference talk and poster:** 2015 Meeting of the Evolutionary Demography Society, The Netherlands. Oct 5, 2015.

## ADMINISTRATIVE EXPERIENCE

2016-current **Treasurer** of the Dutch Society for Theoretical Biology (NVTB)

2016 Member of the IBED Seminar Committee

2007 **Secretary** of the 2007 St Hilda’s College Ball committee.

2007  $\rightarrow$  2008 **President** of *Oxford Food Society*. Organized events in and around Oxford together with local producers, small shops and restaurants.

2006  $\rightarrow$  2007 **Conference Organizer**. One of four students organizing the Oxford Undergraduate Physics Conference 2007 with Christopher Palmer.

## WORKSHOPS, SCHOOLS AND COURSES ATTENDED

- (8) *Modelling population dynamics with Physiologically Structured Population Models.* PE&RC supported training course, Ede, The Netherlands. Apr 29 – May 4, 2018.
- (7) *Structured Population Models.* The Helsinki Summer School on Mathematical Ecology and Evolution 2016, Turku, Finland. Aug 21 – 28, 2016.

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- (6) *Modeling individual histories with state uncertainty, Capture-Recapture workshop*. Centre d'Ecologie Fonctionnelle et Evolutive, Montpellier, France. March 21 – 25, 2016.
  - (5) *Course “Matrix Approaches to Health Demography”*. Max Planck Institute for Demographic Research, Rostock, Germany. Jan 13 – 20, 2016.
  - (4) *Investigative Workshop – Information and Entropy*. NIMBios Institute, Knoxville, USA, April 7 – 10, 2015.
  - (3) *Workshop demography and individual heterogeneity 'à la Caswell'*. CNRS Montpellier, France, April 2 – 3, 2015.
  - (2) *Workshop: Advanced applications of matrix population models*. British Ecological Society Symposium, Demography Beyond the Population. Sheffield, United Kingdom, March 23, 2015.
  - (1) *Summer School Inverse Modeling*. Organized by Jasper Vrugt and Willem van Bouten, University of Amsterdam, The Netherlands, July 2011.

## CONFERENCES ATTENDED

- (12) *2018 Second Joint Conference on Evolutionary Biology*. Montpellier, Aug 19 –22, 2018.
- (11) *2018 Annual Meeting of the Ecological Society of America*. New Orleans, Aug 5 –10, 2018.
- (10) *2018 Meeting of the Evolutionary Demography Society*. Lyon, Jan 8 –10, 2018.
- (9) *Ecology Across Borders: Joint Annual Meeting 2017* Ghent, Dec 11 –14, 2017.
- (8) *2017 Modeling Biological Evolution 2017* Leicester, Apr 4 –7, 2017.
- (7) *2017 Netherlands Annual Ecology Meeting 2017* Lunteren, Feb 14 –15, 2017.
- (6) *2016 British Ecological Society Annual Meeting 2016* Liverpool, Dec 11 –14, 2016.
- (5) *2016 Meeting of the Dutch Society of Theoretical Biology (NVTB)*. Schoorl, The Netherlands, May 26 –27, 2016.
- (4) *2015 Meeting of the Evolutionary Demography Society*. Lunteren, The Netherlands, Oct 5 – 7, 2015.
- (3) *2015 Meeting of the Dutch Society of Theoretical Biology (NVTB)*. Schoorl, The Netherlands, June 4 – 5, 2015.
- (2) *British Ecological Society Symposium, Demography Beyond the Population*. Sheffield, United Kingdom, March 23 – 26, 2015.
- (1) *2015 Netherlands Annual Ecology Meeting (NAEM)*. Lunteren, The Netherlands, February 10 – 11, 2015.