Curriculum Vitae of Prof. Dr. Volker Grimm[1]

Prof. Dr. Volker Grimm
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1. Professional Preparation

Diploma degree in Biology, 1983, University of Marburg, Germany
Diploma degree in Physics, 1989, University of Marburg, Germany
Doctoral degree in Physics, 1994, University of Marburg, Germany
Habilitation degree in Theoretical Ecology, 2003, University of Potsdam, Germany
Professorship for Theoretical Ecology, 2012, University of Potsdam, Germany

2. Appointments

- Current: Helmholtz Center for Environmental Research – UFZ, Germany (since 1992)
- Current: Professor for Theoretical Ecology at the University of Potsdam
- 2003-2012: Privatdozent (adjunct professor) at the University of Potsdam
- 6/1996-12/1997 Ecosystem research project ELAWAT ("Elasticity of the Wadden Sea"), Terramare (Centre for Research on Shallow Seas, Coastal Zones and the Marine Environment), Wilhelmshaven
- 1989-1992 Department of Physics, University of Marburg

3. Example Publications

Grimm V, Railsback SF. 2012. Pattern-oriented modelling: a "multiscope" for predictive systems ecology. *Philosophical Transactions Royal Society London B* 367: 298-310.

Zinck RD, Pascual M, **Grimm V**. 2011. Understanding shifts in wildfire regimes as emergent threshold phenomena. *American Naturalist* 178: E149-E161.

Schmolke A, Thorbek P, DeAngelis DL, **Grimm V**. **2010**. Ecological modelling supporting environmental decision making: a strategy for the future. *Trends in Ecology and Evolution* 25:479-486.

Grimm V, Railsback SF. **2005**. *Individual-based Modeling and Ecology*. Princeton University Press, Princeton N.J., 428 pp.

Grimm V, Revilla E, Berger U, Jeltsch F, Mooij WM, Railsback SF, Thulke H-H, Weiner J, Wiegand T, DeAngelis DL. **2005**. Pattern-oriented modeling of agent-based complex systems: lessons from ecology. *Science* 310: 987-991.

4. Invited Presentations (since 2005)

- Baton Rouge, USA. Seminar „BEFORE, a rule-based model of European beech forests: why does it work?" at the Department of Oceanography and Coastal Sciences, Louisiana State University, 2005

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- Charlottesville, USA. Talk in the "Digital Scholarship Lecture Series" of the University of Virginia: "Decoding nature: pattern-oriented modeling of complex systems", 2006
- Tempe, AZ, USA. Presentation at the NSF Workshop "Integrating Socioecological Sciences Through a Community Modeling Framework "ODD: a general protocol for describing IBMs and ABMs", 2007
- Zürich, Switzerland. Presentation at the ETH (Institute of Terrestrial Ecosystems – ITES) "Simple models of complex systems?", 2007
- Trieste, Italy. Plenary lecture at European ECEM '07 conference: "Individual-based models of communities and ecosystems: dream, nightmare, or reality?", 2007
- Roskilde, Denmark. Presentation at Centre for Integrated Population Ecology (CIPE): "Pattern-oriented modelling", 2008
- Paris, France. Keynote lecture at the workshop "Agent-based spatial simulation (ABS^2)": "Individual-based models in ecology", 2008
- Amsterdam, Netherlands. SEE lecture (=Seminars on Ecology and Evolution): "Buffer mechanisms of populations and communities: how to model them?", 2008
- Roskilde, Denmark. Presentation at workshop "Integrating population modelling into ecological risk assessment": "Individual-based and agent-based modelling for ecologcal risk assessment", 2009
- Jealott's Hill, Syngenta, UK. Presentation at "Syngenta Product Safety External Collaborations Day": "CREAM: a european project on ecological modelling for risk assessment of chemicals", 2009
- Montpellier, France. Keynote lecture at the conference "LandMod 2010: Integrative Landscape Modelling": "Designing and validating agent-based models: two sides of the same coin", 2010
- Paris, France. Keynote lecture at the MAPS-2 workshop "Teaching of/with agent-based models in the social sciences": "Protocols and methods to communicate with and about models", 2010
- Lyon, France, University. Seminar in the series SEMOVI: "Mechanistic effect models for ecological risk assessment of chemicals: CREAM and the documentation framework TRACE", 2010
- Lyon, France, AgChem Forum 2010: "Transparent and comprehensive ecological modelling for risk assessment of chemicals: the CREAM project", 2010.
- London, UK, Royal Society Discussion Meeting "Predictive ecology: systems approaches": "Pattern-oriented modelling: a 'multiscope' for predictive ecology", 2011
- Knoxville, USA, NIMBios Investigative Workshop "Individual-based Ecology of Microbes": "Individual-based modeling: the role of patterns and standards", 2011
- London, UK, ESF Workshop "Modeling in Ecology: Does Simple Alwawys Equate to General?": "Simple models of complex systems?", 2011
- Wageningen, Netherlands, Seminar at Alterra/Wageningen University: "Trustworthy models or useless arithmetic? How to convince decision makers that ecological models can lead to better decisions", 2012
- Le Croisic, France, SETAC workshop MODELINK I: "Introduction into ecological modelling", 2012
- Louvain, Belgium, Seminar Louvain Catholic University: "The future of individual-based modelling: some speculations", 2012
- Monschau, Germany, SETAC workshop MODELINK II, invited plenary presentation on: "Modelling superorganisms: risk assessments for honeybees", 2013
- Parma, Italy, EFSA (European Food Safety Authory), Scientific Colloquium XVIII on 'Towards holistic approaches to the risk assessment of multiple stressors in bees'. Invited plenary presentation: "A review of honeybee models and a short introduction to the new integrated colony model BEEHAVE", 2013
- Osnabrück, Germany, International Conference "Models in Population Dynamics and Ecology (MPDE'13)". Invited plenary lecture: "Individual-based modelling: emerging theories", 2013
- Knoxville, USA, NIMBios Investigative Workshop "Predictive Models for Ecological Risk Assessment". Invited keynote lecture: "Models linking organisms and ecosystems: putting individuals together", 2014

- Brescia, Italy, 28th Conference of the European Council for Modelling and Simulation (ECMS). Invited keynote lecture: "Patterns, protocols, and predictions: agent-based modelling as a multi-scope for analysing complex systems", 2014
- Vitoria-Gasteiz, Spain, 48th Congress of the International Society of Applied Ethology (ISAE). Invited Wood-Gush memorial lecture: "Agent-based modelling: a powerful tool for applied ethology", 2014
- London, UK, NERC Biodiversity & Ecosystem Services Sustainability (BESS) workshop "Understanding resilience, thresholds and tipping points". Invited lecture: "What is resilience? Review, critical assessment, and outlook", 2015
- Baltimore, USA, International Society for Ecological Modelling (ISEM) Global Conference. Invited keynote lecture: "Individual-based/agent-based modelling unifying ecological theory: eventually getting there", 2016
- Cardiff, UK, Workshop of Royal Society of Biology "Exploring Resilience". Invited lecture: "Observing, understanding, and utilizing resilience mechanisms of ecological systems", 2016
- Biddeford, New England, USA, Gordon Conference "Unifying Ecology Across Scales". Invited keynote lecture: "Nothing Makes Sense in Ecology Except in the Light of Individuals: Individual-Based Modelling Unifies Ecology", 2016
- Rome, Italy, Social Simulation Conference 2016. Invited keynote lecture: "Modelling resilience of agent-based complex systems", 2016
- San Diego, USA, Symposium "Agent-based Modeling (ABM) 17". Invited keynote lecture "Agent-based modeling: from manifestos to manifestations", 2017
- Brussels, Belgium, 13th SETAC Europe Special Science Symposium. Invited presentation "Using models for linking and integrating across scales: pros & cons and needs", 2018
- Hannover, Germany, Symposium "Research synthesis based on hierarchy-of-hypothesis approach". Invited lecture "Theory in biodiversity sciences and the contributions of modelling", 2018
- Bonn, Germany, International Conference "Simplicities and complexities". Invited lecture "Per aspera ad astra: ecology's way to simplicity has to embrace omplexity", 2019
- Hamburg, Germany, Forum "Zukunftsorientierte Steuerung". Invited lecture: "Theory in biodiversity sciences and the contributions of modelling, 2019
- Knoxville, USA, University of Tennessee Knoxville, invited Ecol. & Evol. Biology Seminar and Pre-Conference presentation for NIMBioS Undergraduate Research Conference "Modeling honey bees under stress with BEEHAVE: lessons for theory and practice", 2020

5. Teaching

- 1995–2000: Interdisciplinary seminar and lecture „Theoretical Ecology" at the Department of Physics, University of Marburg (attended by students of physics and biology).
- 2001 –: Course „Programming in C++", Institute of Biochemistry and Biology, University of Potsdam
- 2005 –: Course Ecological Modeling: Advanced issues, Institute of Biochemistry and Biology, University of Potsdam
- 2007 –: Bachelor student's course: "Scientific Writing" (Institute of Biochemistry and Biology, University of Potsdam).
- Several 1- or 3 week courses in Ecological Modelling (in Germany and Cape Town, South Africa)
- 2005 1-week course in „Individual-based Modelling" at the University of Helsinki (with Steve Railsback and Steve Lytinen)
- 2006 Three days module "Individual-based modelling" within a EUR-OCEANS summer school (Dragerup, Denmark; with S. Kramer-Schadt, B. Müller and N. Rüger)
- 2007, 2010: Three days "Agent-based modeling with NetLogo" at the Max-Planck-Institute for Evolutionary Anthropology, Leipzig (with S. Kramer-Schadt).
- 2008: Course in Agent-based Modelling at the Center for Ecological Research, Polish Acadamy of Science (Mikolajki, Poland).

- 2007 – : Courses in “Scientific Writing” (Graduate schools in Potsdam, Cologne, Göttingen, Frankfurt, UFZ, iDiv; in total 31 2-day courses).
- 2007–2013, 2015–2017: TU Dresden Summer School in Agent-based Modelling (organized by U. Berger; with S. Railsback).
- 2011–2018: Summer workshop in agent-based modelling for instructors (Humboldt State University, Arcata and UFZ [2014]) (organized by S. Railsback and V. Grimm [2014], with S. Lytinen and D. Ayllon [2014]).

6. PhD Advisees

Main supervisor:

1. Christian Neuert, 1999, degree in physics (Modelling of beech forests). Co-supervisor: C. Wissel, UFZ.
2. Norbert Dorndorf, 1999, degree in biology (Modelling of Alpine marmot population dynamics). Co-supervisor: C. Wissel, UFZ.
3. Silke Bauer, 2002, degree in biology (Modelling plant population dynamics). Co-supervisor: C. Wissel, UFZ
4. Dirk Eisinger, 2007, degree in biology (Ecological-epidemiological modelling for rabies management). Co-supervisor: H.-H. Thulke, UFZ.
5. Jula Zimmermann, 2008, degree in biology (Population ecology of a dominant grass: recruitment, growth and mortality in semi-arid savanna). Co-supervisors: S. Higgins, University of Frankfurt, and A. Linstädter, University of Cologne.
6. Richard Zinck, 2009, degree in biology (Diversity, criticality, and disturbances in spatial ecological systems).
7. Francisca A.S. dos Santos, 2010, degree in biology (Towards a mechanistic understanding of species and community responses to climate change: the role of disturbance interactions). Supervisor: K. Johst, UFZ.
8. Kamila Wiktoria Franz, 2011, Center for Ecological Research/International Doctoral School of Biological Sciences, Polish Academy of Sciences Warsaw, PhD at the University of Warsaw (Metapopulation viability analysis of the natterjack toad [*Bufo calamita*]: a comparative assessment of PVA software packages and management scenarios).
9. Benjamin Martin, 2013, degree in biology (Linking individual-based modelling and Dynamic Energy Budget theory: lessons for ecology and ecotoxicology), double doctorate (VU Amsterdam and Potsdam University).
10. Pia Backmann, 2017, degree in biology (Individual- and trait-based modelling of plant communities and their herbivores). Co-supervisor: Nicole van Dam, iDiv.
11. Juliane Horn, 2017, degree in biology (A modelling framework for exploration of a multi-dimensional factor causing decline in honeybee health).
12. Gabriele Schiro, 2019, degree in biology (Spatial distribution of phyllosphere fungi in heterogeneous wheat fields, an analysis of abiotic and biotic driving factors). Co-supervisor: Marina Müller, ZALF.
13. Maria Langhammer, 2019, degree in biology (Simulating biodiversity responses to land use mosaics in agricultural landscapes: an overview of the possibilities and potential).
14. Lukas Egli, 2021, degree in biology (Quantifying and modelling trends of ecosystem service diversity in socio-ecological systems and their implications for resilience). Co-supervisor: Ralf Seppelt, UFZ.
15. Johannes Leins, since 2018, degree in biology (Modelling and analysing the spatial population dynamics and survival probabilities of four grassland species under climate and land use change in Northern Germany). Co-supervisor: Martin Drechsler, UFZ
16. Patricia Calderon, since 2018, degree in biology (Connectivity models for jaguar (Panthera onca) in Meso-America). Co-supervisor: Stephanie Kramer-Schadt (IZW).
17. Alexander Milles, since 2018, degree in biology (Intra-specific trait variation in movement behaviour as mechanisms for species coexistence). Co-supervisor: Melanie Dammhahn.

Co-supervisor:

1. Damaris Zurell, 2011 (main supervisor: B. Schröder, University of Potsdam), degree in biology (Integrating dynamic processes into species distribution models to improve predictions for scenarios of environmental change).
2. Yue Lin, 2013 (main supervisor: U. Berger, TU Dresden), degree in biology (The role of different modes of interactions among neighbouring plants in driving population dynamics)
3. Jan Christoph Thiele, 2014 (main supervisor: W. Kurth, University of Göttingen), degree in computer science (Towards rigorous agent-based modelling: linking, extending, and using existing software platforms).
4. Faten Gabsi, 2014 (main supervisor: T. Preuß, RWTH Aachen), degree in biology (A realistic modelling framework to characterize individual- and population-level effects of chemicals on *Daphnia magna*. Implications for ecological risk assessment)
5. Viola Pavlova, 2015 (main supervisor: J. Nabe-Nielsen, Arhus University), degree in biology (Modeling the effects of contaminants on polar bear population dynamics).
6. Jacqueline Augusiak, 2016 (main supervisor: P. van den Brink, Wageningen University, Netherlands), degree in biology (Improving communication and validation of ecological models. A case study on the dispersal of aquatic macroinvertebrates).
7. Gabriele Kowalski. 2019 (main supervisor: Jana Eccard, University of Potsdam), degree in biology (Animal movement patterns across habitats: connecting biodiversity).
8. Lisa Teckentrup, 2019 (main supervisor: Florian Jeltsch, University of Potsdam), degree in biology (Understanding predator-prey interactions: The role of fear in structuring prey communities).
9. Cédric Scherer. 2019 (main supervisor: Stephanie Kramer-Schadt, TU Berlin), degree in biology. (Infection on the move: individual host movement drives disease persistence in spatially structured landscapes).
10. Tobias Kürschner. Since 2018. Pathogen evolution in changing landscapes. Main supervisor: Stephanie Kramer-Schadt
11. Marie-Sophie Rohwäder. Since 2018. From individual home-range formation to community dynamics: a novel, allometric modelling approach to explore biodiversity loss caused by landscape changes. Main supervisor: Florian Jeltsch.

7. Postdoctoral Associates

- 2007–2009: Roger Jovani; two years; grant from the Spanish Ministery of Education and Science.
- 2007-2010: Justin M. Calabrese; three years; grant PATRES from European Commission.
- 2007-2009: Amelie Schmolke; one year; grant from Syngenta, UK.
- 2013-2014: Anna-Maija Nyman; one year; grant from the May and Tor Nessling Foundation, Finland.
- 2013-2015: Yue Lin; two years; grant from German Centre for Integrative Biodiversity Research (iDiv) Halle-Jena-Leipzig
- 2013-2015: Daniel Ayllón; two years; grant from EU (Marie Curie Postdoctoral Fellowship)
- 2013-2015: Jürgen Groeneveld; three years; grant PolarTime from Helmholtz Association
- 2015-2016: Daniel Ayllón: 1 year; grant from DFG (together with G. Lischeid, ZALF)
- 2019- : Thomas Banitz, three years; grant CAUSES from Swedish Research Council
- 2020- : Jürgen Groeneveld, three years; grant VIBee from BLE (Bundesanstalt für Landwirtschaft und Ernährung)

8. Editorial Boards

- Polish Journal of Ecology (2003-)
- American Naturalist (2004-2012; 2018-)
- Ecological Modelling (2006-2018; Associate Editor 2013-2018)
- GAIA (2008-)
- Ecosystems (2009-2012)
- The Open Ecology Journal (2007-2011)

- Theoretical Ecology (2011-)
- Socio-Environmental Systems Modelling SESMO (2018-)

9. Scientific Committees

- Member of the Scientific Council of the Center for Ecological Research of the Polish Academy of Sciences (2007-2013)
- External expert in Working Group "Ecotox Effects" of the Scientific Panel on "Plant Protection Products and their Residues (PPR)", European Food Safety Authority (EFSA), 2010-2012.
- External expert in the Scientific Committee on Health and Environmental Risks (SCHER) of Directorate-General for Health & Consumers (SANCO), European Commission, 2010-2012
- Head of the executive committee of the Synthesis Center for Biodiversity Science – sDiv, which is part of the German Centre for Integrative Biodiversity Research – iDiv (since 2012)
- Member of net interim executive board of CoMSES Net (Computational Modeling for SocioEcological Science) (2012-2015)
- Member of the curriculum advisory board, TU Dresden, Department of Forest Sciences (2013-2016)

10. Memberships

British Ecological Society (BES), Ecological Society of America (ESA), Gesellschaft für Ökologie (GfÖ), Society of Environmental Toxicology and Chemistry (SETAC), European Social Simulation Association (ESSA)

11. Reviewer

Journals: Advances in Complex Systems, African Journal of Ecology, African Journal of Marine Science, Agricultural and Forest Meteorology, American Naturalist, Aquatic Living Resources, Artificial Life, Basic and Applied Ecology, Behavioral Ecology, Biodiversity and Conservation, Biogeosciences, Biological Conservation Biological Reviews, Bird Conservation International, BMC Ecology, Bulletin of Mathematical Biology, Canadian Journal of Forest Research, Ecological Applications, Computational and Mathematical Organization Theory, Critical Reviews in Toxicology, Current Zoology, Diversity and Distributions, Ecography, Ecological Indicators, Ecological Applications, Ecological Complexity, Ecological Modelling, Ecological Monographs, Ecology, Ecology Letters, Ecology and Evolution, Ecology and Society, Ecotoxicology, EcoSphere, Ecosystems, eLife, Environmental Modeling and Assessment, Environmental Modelling and Software, Environmental Pollution, Environmental Science Europe, Environmental Science & Technology, Environmental Chemistry & Toxicology, Ethology, Forest Ecology and Management, GAIA, Global Change Biology, Global Environmental Change, International Journal of Wildland Fire, ISME Journal, Journal of Animal Ecology, Journal of Applied Ecology, Journal of Artificial Societies and Social Simulation, Journal of Biological Physics, Journal of Ecology, Journal of Environmental Economics and Management, Journal of Land Use Science, Journal of Marine Experimental Biology and Ecology, Journal of Natural Resources Policy Research, Journal of Theoretical Biology, Landscape Ecology, Methods in Ecology and Evolution, Movement Ecology, Nature, Nature Communications, Oecologia, Oikos, Physiology and Behavior, PLoS Biology, PLoS One, Polish Journal of Ecology, Proceedings of the Royal Society B, Progress in Oceanography, Science, Science of the Total Environment, Socio-Environmental Systems Modelling, Simulation Theory and Practice, Sustainability, Sustainability Science, Royal Society Open Science, Theoretical Ecology, Transactions in GIS, Trends in Ecology and Evolution, Trends in Immunology, Web Ecology

Grant proposals: Germany (DFG, DBU, Humboldt Foundation), Austria, Denmark, UK, USA (NSF), Canada, Norway, Europe (ERC), New Zealand, Switzerland, The Netherlands

PhD theses: Germany, UK, Denmark, Canada, Finland, India, Netherlands, Norway, South Africa, Australia, Belgium

Habilitation theses: Germany, France, Austria

Promotion of faculty position: Germany, Sweden, UK, USA

12. Organisation of Workshops, Conference Symposia or Sessions, and Conferences

- Session „Individual-based Modelling“, INTECOL VII International Congress of Ecology 1998, **Florence, Italy** (with J. Uchmanski and T. Wyszomirski)
- Symposium „Muster und Modell in Forstökologie und –management“, Annual meeting of the Ecological Society of Germany, Austria and Switzerland 2003, **Halle, Germany** (with A. Huth and L. Fahse)
- Session „Linking Individual Behavior and Population Ecology: Models, Theory, and Applications“, Annual Meeting of the Ecological Society of America 2004, **Portland, USA** (with S. Railsback, R. Lamberson and U. Berger)
- Thematic Topic Session „Individual-based modeling and ecology: linking individual behaviour and patterns in ecological systems“, Annual Meeting of British Ecological Society 2005, **Hatfield, UK** (with U. Berger)
- Symposium „Ecological modelling: linking landscapes, ecosystems and population modelling“, Annual meeting of the Ecological Society of Germany, Austria and Switzerland 2005, **Regensburg, Germany** (with F. Jeltsch)
- Symposium „ Revisiting the ‘stability’ icon: Upstart approaches to modeling resilience ”, Annual meeting of the Ecological Society of America 2006, **Memphis, USA** (with U. Berger, D. DeAngelis, S Railsback)
- Workshop “Individuenbasierte Modelle in der Ökologie”, Arbeitskreis Theorie in der Ökologie der Gesellschaft für Ökologie, 2007**, Kohren-Sahlis near Leipzig** (with H Reuter, K Schiffers, B Schröder)
- SETAC Workshop LEMTOX (“Ecological models in support of regulatory risk assessments of pesticides: Developing a strategy for the future“) (with P. Chapman, P. Thorbek, F. Heimbach, J. Wogram, P. van den Brink & V. Forbes), 2007, **Leipzig**
- SETAC-GLB Annual Meeting 2007, **Leipzig,** member of the organizing committee
- Workshop of EU Project PATRES, 2008, **Bad Schandau, Germany**
- NIMBioS Investigative Workshop “Optimal control and optimization for individual-based and agent-based models”, 2009, **University of Tennessee, Knoxville, USA**, co-organizer
- Conference LandMod 2010 (“Integrative Landscape Modelling”), 2010, **Montpellier, France**, member of scientific committee
- Conference “Epistemological perspectives on simulation”, 2010, **Hamburg, Germany**, member of program committee
- Startup meeting of EU project CREAM, 2010, **Machern near Leipzig** (with A. Schmolke and J. Zimmermann)
- 7th ECEM (European Conference on Ecological Modelling) Conference, 2011, **Riva da Garda, Italy**, member of scientific advisory board
- SETAC Europe Meeting 2011, **Milan**, Session “Mechanistic modelling for risk assessment: sub-lethal responses and population-level effects” (with V. Ducrot and S. Charles)
- Mid-term Review Meeting of EU project CREAM, 2011, **Krakow, Poland** (with R. Laskowski, D. Jevtic, J. Augusiak, N. Hamda, J. Groeneveld and J. Zimmermann).
- SETAC Europe Meeting 2012, **Berlin**, Session “Ecological modelling in support of terrestrial risk assessments” (with P. Thorbek and MemoRisk SETAC Advisory Group)
- Conference “Epistemological perspectives on simulation V”, 2012, **San Antonio, USA**, member of organizing committee
- Open Conference “Mechanistic modelling for ecological risk assessment of chemicals” (final conference of EU project CREAM), 2013, **Leipzig** (with I. Dolciotti, J. Groeneveld and J. Zimmermann)
- Gesellschaft für Ökologie (GfÖ), Annual Meeting, 2013, **Potsdam**. Session “Individual-based ecology” (with U. Berger).
- Workshop “Sustainability and complex systems”. **Columbus, Ohio**, USA, 2013 (with A. Hastings, C. Costner, O. Ovaskainen)

- Gesellschaft für Ökologie (GfÖ), Annual Meeting, 2014, **Hildesheim**. Session "Interactions among individuals" (with U. Berger).
- BEEHAVE Workshop, **Leipzig**, 2016 (with J. Horn).
- SETAC Europe Meeting 2016, **Nantes**, Session "Ecological modelling for risk assessment: state of the art, applications, use in a regulatory context and future directions" (with P. Thorbek, V. Poulsen and Udo Hommen)
- ESA (Ecological Society of America) Meeting 2019, **Louisville**, Symposium "Bridging levels from individuals to communities and ecosystems: Including adaptive behavior and feedbacks in modelling and theoretical ecology" (with S. Railsback U. Berger).
- ISEM (International Society of Ecological Modelling) Global Conference 2019, **Salzburg**, Symposium "Individual-based Modelling" (with G. Wallentin and U. Berger)

13. Awards

- SETAC Europe Environmental Education Award 2016
- ISEM Lifetime Achievement Award 2019

13. Externally funded Research Projects

- PATRES ("Pattern Resilience"), STREP (Specific targeted research project) funded by the EC (6th Framework Program). UFZ: ca. 300,000 €, 2007–2010.
- "Ecological modelling for pesticide risk assessment", Syngenta Ltd., UK. 67,000 €. November 2007 – October 2008.
- CREAM ("Mechanistic effects models for ecological risk assessment of chemicals"), EC (Marie Curie Initial Training Network, 7th Framework Program). **Coordinator**. 2009– 2014 (13 Partners; ca. 5,000,000 €)
- "Honeybee population dynamics", Syngenta Ltd., UK, ca 50,000 €, 2009–2012.
- PolarTime ("Biological timing in a changing marine environment: Clocks and rhythms in polar pelagic organisms"), Helmholtz Virtual Institute (HVI), ca. 330,000 €, 2013–2017
- BioMove (BioMove Research Training Group DFG-GRK 2118/1: "Integrating Biodiversity Research with Movement Ecology in dynamic agricultural landscapes"), 2015-2021.
- CauSes ("Approaches to causation in the social and natural sciences and their implications for theory building in sustainability science"), Swedish Research Council, ca. 340,000 €, 2019-2023.
- VIBee ("Etablierung digitaler Indikatoren der Bienenvitalität in Agrarlandschaften"), Bundesanstalt für Landwirtschaft und Ernährung, ca. 355,000 €, 2020-2023.

14. Complete List of Publications

Books and Special Issues

10. Jeltsch F, **Grimm V**. **2020**. Editorial: thematic series "Integrating movement ecology with biodiversity research". *Movement Ecology* 8:19.
9. An L, **Grimm V**, Turner BL II. **2020**. Editorial: meeting grand challenges in agent-based models. *Journal of Artificial Societies and Social Simulation* 23 (1) 13.
8. Railsback SF, **Grimm V**. **2019**. Agent-based and Individual-based Modeling: A Practical Introduction. 2nd edition. Princeton University Press, Princeton, N.J., 360 pp.
7. **Grimm V**, Berger U (eds.). **2016**. Next-generation ecological modelling. Special Issue in *Ecological Modelling*, Vol. 326, pp. 1-187.
6. **Grimm V**, Thorbek P (eds.). **2014**. Population models for ecological risk assessment of chemicals. Special Issue in *Ecological Modelling*, Vol. 280, pp. 1-148.

5. Railsback SF, **Grimm V**. **2012**. *Agent-based and Individual-based Modeling: A Practical Introduction*. Princeton University Press, Princeton, N.J., 352 pp.

4. Thorbek P, Forbes V, Heimbach F, Hommen U, Thulke HH, van den Brink PJ, Wogram J, **Grimm V** (eds.). **2010**. *Ecological Models for Regulatory Risk Assessments of Pesticides: Developing a Strategy for the Future*. Pensacola and Boca Raton (FL): Society of Environmental and Chemistry (SETAC) and CRC Press, 160 pp.

3. **Grimm V**, Railsback SF. **2005**. *Individual-based Modeling and Ecology*. Princeton University Press, Princeton N.J., 428 pp.

2. Frank K, Lorek H, Koester F, Sonnenschein M, Wissel C, **Grimm V**. **2002**. *META-X: Software for Metapopulation Viability Analysis.* Springer-Verlag, Berlin Heidelberg, 195 pp.

1. Uchmanski J, Aikman D, Wyszomirski T, **Grimm V** (eds.). **1999**. *Individual-Based Models in Ecology*. Special Issue in *Ecological Modelling*, Vol. 115, pp. 109-290.

Articles in Refereed Journals

International

In press

200. Mammola S, Lunghi E, Bilandzija H, Cardoso P, **Grimm V**, Schmidt SI, Hesselberg T, Martínez A. Collecting eco-evolutionary data in the dark: impediments to subterranean research and how to overcome them. *Ecology and Evolution.*

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199. Accolla C, Vaugeois M, **Grimm V**, Moore AP, Rueda-Cediel P, Schmolke A, Forbes VE**. 2021**. A review of key features and their implementation in unstructured, structured, and agent-based models for ecological risk assessment. Integrated Environmental Assessment and Management 17: 521-540.

198. Ayllón D, Augusiak J, Baveco H, Berger U, Charles S, Martin R, Focks A, Galic N, Gallagher C, Liu C, van Loon EE, Nabe-Nielsen J, Piou1 C, Polhill JG,. Preuss TG, Radchuk V, Schmolke A, Stadnicka-Michalak J, Thorbek P, Railsback SF, **Grimm V**. **2021**. Keeping modelling notebooks with TRACE: good for you and good for environmental research and management support. *Environmental Modelling and Software* 136: 104932.

197. Crawford M, Schlägel UE, May F, Wurst S, **Grimm V**, Jeltsch F. **2021**. While shoot herbivores reduce, root herbivores increase nutrient enrichment's impact on diversity in a grassland model. Ecology 102(5), e03333.

196. Gallagher CA, **Grimm V**, Kyhn LA, Kinze C, Nabe-Nielsen J. **2021**. Movement and seasonal energetics mediate vulnerability to disturbance in marine mammal populations. *American Naturalist* 197: 296-311.

195. Horn J, Becher MA, Johst K, Kennedy P, Oborne J, Radchuk V, **Grimm V**. **2021**. Honeybee colony performance affected by crop diversity and farmland structure: a modelling framework. *Ecological Applications* 31: e02215

194. Iwanaga T, Wang H-H, Hamilton S, **Grimm V**, Koralewski TE, Salado A, ElSawah S, Razavi S, Yang J, Glynn P, Badham J, Voinov A, Chen M, Grant WE, Peterson TR, Frank K, Shenk G, Barton CM, Jakeman AJ, Little JC. **2021**. Socio-technical scales in socio-environmental modeling: managing a system-of-systems modeling approach. *Environmental Modelling and Software* 135: 104885.

193. Leins J, Banitz T, **Grimm V**, Drechsler M. **2021**. High-resolution PVA along large environmental gradients to model the combined effects of climate change and land use timing: lessons from the large marsh grasshopper. *Ecological Modelling* 440: 100355.

2020

192. An L, **Grimm V**, Turner BL II. **2020**. Editorial: meeting grand challenges in agent-based models. *Journal of Artificial Societies and Social Simulation* 23 (1) 13.

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