

Curriculum Vitae

Personal data:

Name: Prof. Dr. Christian Wirth
Date of birth: 28.02.1969
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Education

2000 **PhD** (“**summa cum laude**”); Title: „*The impact of fire on the carbon dynamics in Siberian Scots pine forests. Interactions of biogeochemistry and population ecology*“ (Professor Dr. Ernst-Detlef Schulze) University of Bayreuth, Germany
1996 **Diploma** (“**with distinction**”) in Biology with title „*Aboveground biomass, nitrogen balance and populations dynamics in chronosequence of Siberian Scots pine forests*“, University of Bayreuth, Germany
1988 **Abitur**, Graf-Friedrich-Gymnasium, Diepholz, Germany

Societal service

1988-1990 **Civil Service** at nature conservation association „Biologische Schutzgemeinschaft Hunte-Weser-Ems e. V.“ in Wardenburg, Germany

Academic positions

- Since Nov 2009 **Full professor (W3)** at University of Leipzig; head of department "Systematic Botany and Functional Biodiversity", Institute of Biology, and **Director of the Botanical Garden** of Leipzig
- 2009 Offer of professorship (W2) from University of Giessen
- 2005-2009 **Leader of Independent Junior Research Group** "Organismic Biogeochemistry" at the Max-Planck-Institute for Biogeochemistry, Jena
- 2003-2005 **Post-doctoral research scientist** in the lab of Prof. Stephen W. Pacala, Department of Ecology and Evolutionary Biology, Princeton University, USA (Research fellowship funded by the German Science Foundation)
- 2004 (June-Sept.) **Visiting scientist** at the Institute of Arctic Biology in the lab of Prof. F. Stuart Chapin III, University of Fairbanks, Alaska
- 2003 (August-Sept.) **Visiting scientist** at the Sukachev Institute for Forest in the lab of Prof. Evgeny Vaganov, Siberian Branch of the Academy of Sciences, Krasnoyarsk, Russia
- 2000-2002 **Post-doctoral research scientist** at Max-Planck-Institute for Biogeochemistry, Jena; BMBF project: "Carbon accounting in Thuringian's forests – A German case study on implementing the Kyoto protocol"
- 1997/98 (Oct.-Feb.) **Scientific assistant** at plant ecology lab, University of Bayreuth, Germany

Awards

- 2005 Independent Junior Research Group of the Max-Planck-Society
- 2005 *Carbo-Europe award "best paper of the year 2005"* (Vetter, Wirth et al. *Global Change Biology* 11: 810-827)
- 2003 Research stipend of the German Science Foundation
- 1999 NATO Advanced Study Institute "*Soils and Global Change: Carbon Cycle, Trace Gas Exchange*", Toulouse, France

Projects and funding

Since 2003 I acquired 3200 k€ of funding as principle investigator (PI), 970 k€ Million € as a Co-PI, and 124 k€ as a scientific host. Of the funding acquired as PI 1700 k€ were granted by the Max-Planck-Society, 973 k€ by the German Science Foundation, 350 k€ by the European Union, 125 by other German funding agencies, and 90 by foreign funding agencies.

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| P1 | 2003-2005 | <i>“Influence of changing climate and disturbance regimes on the carbon balance of boreal forests”</i> funded by DFG research stipend (PI, ~84 k€) |
| P2 | 2004-2005 | <i>„Analysing forest succession from permanent sample plots in the southern Siberian Taiga“</i> , cooperation with Sukachev Institut in Krasnoyarsk, Russia funded by Carbon Mitigation Initiative of <i>British Petroleum</i> und Princeton University (PI, ~12 k€) |
| P3 | 2006-2008 | <i>„Modeling biogeochemical cycles and population dynamics in grasslands to analyse diversity-functioning relationships“</i> funded by DFG within research unit FOR 456 (PI, ~55 k€) |
| P4 | 2005-2009 | <i>„Organismic Biogeochemistry“</i> funded by Max-Planck-Society as Independent Junior Research Group at MPI for Biogeochemistry, Jena (PI, ~1.700 k€) |
| P5 | 2006-2008 | DISCOVER: <i>„Biological diversity and ecosystem functioning: Understand and evaluate key experiments in grasslands by mechanistic modelling“</i> , funded by Agence National de la Recherche Scientifique (ANR) (PI, ~70 k€) |
| P6 | 2007-2008 | <i>“Interannual and seasonal variability of the anatomical structure and $\delta^{13}\text{C}$ in tree rings of coniferous and deciduous species”</i> ; INTAS (International Association for the promotion of co-operation with scientists from the New Independent States of the former Soviet Union) with Dr. Marina Skomarkova, Krasnoyarsk (Scientific host, ~15 k€) |
| P7 | 2008-2010 | <i>“Data management and synthesis“</i> ; central project funded by DFG within research unit FOR 891 (BEF China – Biodiversity and Ecosystem Functioning) (PI, ~250 k€) |
| P8 | 2008-2010 | <i>“Plant traits and functional diversity“</i> funded by DFG within research unit FOR 891 (BEF China – Biodiversity and Ecosystem Functioning) (Co-PI, ~120 k€) |
| P9 | 2006-2007 | <i>“Accounting for avoided deforestation within the Kyoto-Protocol“</i> funded by German Federal Environment Agency (UBA) (Co-PI, ~25 k€) |
| P10 | 2008-2010 | <i>“Modeling forest diversity in response to management and herbivory and the consequences for long-term carbon dynamics”</i> funded by DFG within SPP 1374 (Biodiversity Exploratories) (PI, ~54 k€) |
| P11 | 2008-2010 | <i>“Theory and Modeling“</i> funded by DFG within second phase of research unit FOR 456 (<i>“The role of biodiversity for element cycling and trophic interactions“</i>) (PI, ~100 k€) |
| P12 | 2008-2010 | <i>“Nutrient cycling“</i> funded by DFG within second phase of research unit FOR 456 (<i>“The role of biodiversity for element cycling and trophic interactions“</i>) (Co-PI, ~170 k€) |

- P13 2008-2010 “Carbon cycling“ funded by DFG within second phase of research unit FOR 456 (“*The role of biodiversity for element cycling and trophic interactions*“) (Co-PI, ~150 k€)
- P14 2007-2011 „*Fast-track initiative on plant functional type: Refining Plant Functional Classifications for Earth System Modelling – the TRY initiative*“ funded by IGBP-QUEST-DIVERSITAS (travel grant: 8 k€)
- P15 2009-2010 „*Forest fire forensics: How does fire kill a tree?*“ funded by *National Sciences and Engineering Research Council of Canada* with Dr. Henrik Hartmann (Scientific host, ca. 110 k€)
- P16 2009-2011 „*Tree mortality responses towards extreme events across Europe and their impact on the forest carbon balance CarboMort*“ funded by EU within FP7 project „CarboExtreme“ (Co-PI, ~70 k€)
- P17 2009-2011 “*Carbon dynamics of urban trees*“ funded by von-Thünen Institut (**PI**, ~125 k€)
- P18 2010-2013 “*Trait-based modeling*“ funded by DFG within research unit FOR 1451 (“Exploring mechanisms underlying the relationship between biodiversity and ecosystem functioning”) (**PI**, ~ 80 k€)
- P19 2010-2013 “*Database and Synthesis*“ funded by DFG within research unit FOR 1451 (“Exploring mechanisms underlying the relationship between biodiversity and ecosystem functioning”) (Co-PI, ~280 k€)
- P20 2010-2014 “FunDivEUROPE – The functional significance of forest biodiversity in Europe” funded by EU within FP7; (**PI** and **workpackage leader**, ~350 k€)
- P21 2011-2014 “*Data management and synthesis*“ funded by DFG within second phase of research unit FOR 891 (BEF China – Biodiversity and Ecosystem functioning) (**PI**, ~210 k€)
- P22 2011-2014 “*Coarse woody debris dynamics*“ in DFG research unit FOR 891 (BEF China – Biodiversity and Ecosystem functioning) (**PI**, ~140 k€)
- P23 2011-2014 “*Plant functional traits and functional diversity as predictors of ecosystem functioning*“ in DFG research unit FOR 891 (BEF China – Biodiversity and Ecosystem functioning) (Co-PI, ~150 k€)

Synergistic Activities

Leadership in collaborative research projects:

- Since 2011 (Jan) Speaker of a grant proposal for the 7th DFG Research Center 'German Centre for Integrated Biodiversity Research iDiv' including about 70 partners from three universities (University of Leipzig, Martin-Luther-University Halle Wittenberg, Friedrich-Schiller University Jena) and eight non-university institutions including three Max-Planck-Institutes MPI-BGC, MPI-CE, and MPI-EVA. The requested funding is 84 Million Euro for a period of 12 years. The proposal passed the first evaluation. The full proposal was submitted in Nov 2011.
- Since 2010 (Oct) EU FunDivEUROPE: Steering committee and workpackage leader

Editorial boards:

- Since 2009 Member of the editorial board of *Oecologia*
- Since 2008 Member of the editorial board of *Annals of Forest Research*

Reviewer

- General Sciences: Nature, PNAS, Biology Letters
- General Ecology: Ecology Letters, Ecology, Ecological Applications, Journal of Ecology, Functional Ecology, Oikos, Journal of Vegetations Science, Journal of Tropical Ecology, Acta Oecologia, Plant and Soil
- Forest Ecology: Tree Physiology, Forest Ecology and Management, Canadian Journal of Forest Research, European Journal of Forest Research, Forestry, Agricultural and Forest Meteorology, Trees – Structure and Function, Journal of Tropical Forest Sciences
- Biogeosciences: IPCC, Global Change Biology, Global Biogeochemical Sciences, Biogeochemistry, Mitigation and Adaptation Strategies for Global Change, Biogeosciences Discussions,
- Other: Plant, Cell and Environment, Natural Hazards

Project Reviews

- Member of DFG Review Board 'Plant Science'
German Science Foundation (DFG) (individual proposals and SFB)
Swiss National Science Foundation (SNF)
Natural Environment Research Council (NERC)

PhD Committees abroad

- Department of Forest Ecology, University of Helsinki, Finland (Aleksi Lehtonen)
Université Blaise Pascal, Clermont-Ferrand, France (Vincent Maire)
Swiss Federal Institute of Technology ETH, Zurich, Switzerland (Matteo Brezzi)
Frije Universiteit Amsterdam, Amsterdam Netherlands (Bob Douma)

Organization of International Workshops and Conference Sessions:

2011 (May)	DFG workshop “ <i>Biodiversity, Climate and Ecosystem Functioning</i> ” held in Leipzig (5 days, 30 international participants)
2011 (April)	5 th Symposium on the Ecology of Foodplain Forests held in Leipzig (1 day, 10 speakers, audience of 150)
2011 (March)	3 rd TRY / BBS (biome boundary shift) workshop (IGBP-QUEST-DIVERSITAS) in Paris, France (3 days, 50 participants, co-organizer and session leader)
2010 (Sep.)	MPI-BGC workshop “ <i>Towards a global multidimensional spectrum of plant functioning</i> ” in Jena (4 days, 11 participants from 7 countries, co-organizer)
2010 (Jan.)	Workshop of Vegetation Function Network of ARC-NZ (Australian Research Council - New Zealand branch) “ <i>Linking decomposability of leaves and stems to their traits: a global analysis of woody species</i> ” in Akaroa, New Zealand (5 days, 12 international participants)
2009 (Oct.)	2 nd TRY / BBS (biome boundary shift) workshop (IGBP-QUEST-DIVERSITAS) in Cape Town, South Africa (2 days, 36 participants, co-organizer)
2008 (Feb.)	1 st TRY workshop (IGBP-QUEST-DIVERSITAS) „ <i>Improving the representation of biodiversity in large-scale vegetation modeling: A global plant trait database</i> ” in Paris, France (3 days, 24 participants)
2007 (Jan.)	3 rd GINKGO (Network for global climate and ecosystem modelling) Workshop in Jena (3 days, 35 participants, co-organizer)
2006 (Sep.)	MPI Symposium „ <i>Function and Value of Old-Growth Forests</i> “ in Jena (3 days, 18 participants). Proceedings published as book in the Ecological Studies Series, Springer.
2004 (May)	12 th IBFRA (International Boreal Forest Research Association) conference, session “ <i>Responses to climate: Historical/spatial perspective</i> ” in Fairbanks, Alaska (session chair)

Memberships

since 2006	Ecological Society of Germany, Austria, Switzerland, Liechtenstein (GfÖ)
since 2009	German Botanical Society (DBG e.V.)

Committees

since 2011	Member of the DFG Review Board ‘Plant Science’
since 2010	Member of the Senate of the University of Leipzig
since 2011	Vice-Dean of the Faculty of Biosciences, Pharmacy, and Psychology of the University of Leipzig
since 2008	Steering committee of the TRY initiative (DIVERSITAS, IGBP)
since 2011	Steering committee of DIVERSITAS Germany

Research interests

Figures in brackets refer to publication numbers (“1” – see Publications below), project numbers (“P1” – see Project and Funding above), or submitted manuscripts (“S1” – see Publications below).

- **Functional biodiversity research** (P4, P8, P14, P18)
 - Biodiversity and ecosystem functioning (18, 36, 42, 53, 55, S1, S2, S4, S6, S7, P3, P5, P11, P12, P13, P22)
 - Species effects on succession and ecosystem functioning (23, 34, 37, 38, 39, 43, 46, 47, 48, 49, 50, 60, S6, P2, P10)
 - Ecoinformatics and meta-analysis (52, 58, P7, P19, P20, P21)
- **Climate change and vegetation dynamics** (17, 25, 28, 29, 30, 34, 40, 54, S4, S5)
- **General plant ecology**
 - Population biology and plant strategies (2, 9, 33, 34, 44, 56, 58, S8)
 - Ecophysiology, water relations, stable carbon isotopes (1, 6, 19, 20, 29, 35, 43, 45, P6)
 - Plant growth, allometry, allocation (21, 22, 32, S9)
- **Biogeochemical cycles**
 - C-, N-, and water cycling; spatial and temporal integration of fluxes (N1, 3, 4, 5, 7, 8, 10, 11, 13, 15, 16, 23, 27, 41, 50, 57, P9)
 - Influence of disturbances on ecosystem processes (2, 12, 13, 14, 16, 24, 26, 31, P1, P16)

Publications

Summary

- h*-Index = 19, total citations = 1708, 42 ISI-listed articles with 20 of these in journals with an impact factor above 4 including articles in *Nature*, *Nature Climate Change*, and *Science*
- Editor of book with title "Function and Value of Old-Growth Forests"; *Ecological Studies* (Springer-Verlag), printed 2009
- Main author of a report to the German Ministry of Education and Science in book format (302 pages).

International peer-reviewed journals and books

1. Kelliher FM, Lloyd J, Baldocchi DD, Rebmann C, **Wirth C** and Schulze E-D (1999): Evaporation in the boreal zone during summer - physics and vegetation. In: Schulze E-D, Heimann M, Harrison S, Holland E, Lloyd J, Prentice C, Schimel D (2001): *Global biogeochemical cycles in the climate system*. Academic press, San Diego, 151-165
2. **Wirth C**, Schulze E-D, Schulze W, von Stünzner-Karbe D, Ziegler W, Miljukowa I, Sogatchev A, Varlagin AB, Panvyorov M, Grigoriev S, Kusnetzova W, Siry M, Harges G, Zimmermann R and Vygodskaya NN (1999): Above-ground biomass in pristine Siberian Scots pine forests as controlled by competition and fire. *Oecologia* 121:66-80
3. Schulze E-D, Lloyd J, Kelliher FM, **Wirth C**, Rebmann C, Lühker B, Mund M, Knohl A, Milyukova I, Schulze W, Ziegler W, Varlagin A, Valentini R, Dore S, Grigoriev S, Kolle O and Vygodskaya NN (1999): Productivity of forests in the Eurosiberian boreal region and their potential to act as a carbon sink - A synthesis. *Global Change Biology* 5(6):703-722
4. Schulze E-D, **Wirth C** and Heimann M (2000): Response to *Science* 290:1895 (Letter by JH Borden, G Marland, B Schlamadinger, R Methews (2000): Kyoto forests and a broader perspective on management. *Science* 290:2895
5. Schulze E-D, **Wirth C** and Heimann M (2000): Kyoto and the global carbon cycle. *Science* 289(5487):2058-2059
6. Zimmermann R, Schulze E-D, **Wirth C**, Schulze EE, McDonald KC, Vygodskaya NN and Ziegler W (2000): Canopy transpiration in a chronosequence of Central Siberian Pine forests. *Global Change Biology* 6:25-37
7. Schimel D, House J, Hibbard K, Bousquet P, Ciais P, Peylin P, Apps M, Baker D, Bondeau A, Brasswell R, Canadell J, Churkina G, Cramer W, Denning S, Field C, Friedlingstein P, Goodale C, Heimann M, Houghton R A, Melillo J, Moore III B, Murdiyarso D, Noble I, Pacala S, Prentice C, Raupach M, Rayner P, Scholes B, Steffen W and **Wirth C** (2001): Recent patterns and mechanisms of carbon exchange by terrestrial ecosystems. *Nature* 414:169-172
8. Lloyd J, Shibistova O, Zolotoukhine D, Kolle O, Arneth A, **Wirth C**, Styles J M, Tchebakova N M, and Schulze E.-D. (2002). Seasonal and annual variations in the photosynthetic productivity and carbon balance of a central Siberian pine forest. *Tellus* 54B (5):590-610
9. Vygodskaya NN, Schulze E-D, Tchebakova NM, Karpachevskii LO, Kozlov D, Sidorov KN, Panvyorov MI, Abrazko MI, Shaposhnikov ES, Solnzeva ON, Minaeva TY, Jeltuchin

- AS, **Wirth C**, Pugachevskii AV (2002): Climatic control of stand thinning in unmanaged spruce forests of the southern taiga in European Russia. *Tellus* 54B (5) 443-461
10. Schulze E-D, Vygodskaya N N , Tschebakova N, Czimeczik C I, Kozlov D, Lloyd, J, Mollicone D, Myachkova E, Sidorov K, Varlagin A and **Wirth C** (2002): The Eurosiberian transect: An introduction to the experimental region. *Tellus* 54B (5):421-428
 11. Schulze E-D, **Wirth C**, and Heimann M (2002): Carbon fluxes in the Eurosiberian Region. *Environmental Control in Biology* 40(3):249-258
 12. Mollicone D, Achard F, Marchesini L B, Federici S, **Wirth C**, Rosellini S, Schulze E-D and Valentini R (2002): A new remote sensing based approach to determine forest fire cycle: Case study of the central Siberia Abies dominated taiga. *Tellus* 54B (5):688-695
 13. **Wirth C**, Czimeczik C I and Schulze E-D (2002): Beyond annual budgets: Carbon flux at different temporal scales in fire-prone Siberian Scots pine forests. *Tellus* 54B (5): 611-630
 14. **Wirth C**, Schulze E-D, Kuznetova V, Milyukova I, Hardes G, Siry M, Schulze B, and Vygodskaya N N (2002): Comparing the influence of site quality, stand age, fire and climate on above-ground production in Siberian Scots pine forests. *Tree Physiology* 22: 537-552
 15. McGuire A D, **Wirth C**, Apps M, Beringer J, Clein J, Epstein H, Kicklighter D W, Bhatti J, Chapin III F S, de Groot B, Efremov D, Eugster W, Fukuda M, Gower T, Hinzman L, Huntley B, Jia G J, Kasischke E, Melillo J, Romanovsky V, Shvidenko A, Vaganov E and Walker D (2002): Environmental Variation, Vegetation Distribution, Carbon Dynamics and Water/Energy Exchanges. *Journal of Vegetation Science* 13.3: 301-314
 16. **Wirth C**, Schulze E-D, Lühker B, Grigoriev S, Siry M, Hardes G, Ziegler W, Backor M, Bauer G and Vygodskaya NN (2002): Fire and site type effects on the long-term carbon balance in pristine Siberian Scots Pine forests. *Plant and Soil* 242: 41-63
 17. IPCC: Good practice guidance for Land-Use, Land-Use Change and Forestry (NGGIP-LULUCF task 1) - contributing author in chapter 5 (Rypdal et al.: Cross-cutting issues).
 18. **Wirth C** (2004): Fire regime and tree diversity in boreal and high elevation forests: Implications for biogeochemical cycles. In: The ecological significance of forest diversity (eds. M. Scherer-Lorenzen, Ch. Körner and E.-D. Schulze). Ecological Studies 176. Springer New York, Berlin, Heidelberg, pp. 309-344
 19. Slot M, **Wirth C**, Schumacher J, Mohren GMJ, Shibistova O, Lloyd J, Ensminger I (2004): Regeneration patterns in boreal Scots pine glades linked to temperature and high-light photoinhibition. *Tree Physiology* 25(9): 1139-1150
 20. Schulze B, **Wirth C** (corresponding author), Linke P, Brand W, Kuhlmann I, Horna de Zimmermann V, and Schulze E-D (2004): Laser Ablation-Combustion-GC-IRMS - A new method for online analysis of intra-annual variation in ¹³C in tree rings. *Tree Physiology* 24: 1193-1201
 21. Joosten R, Schumacher J, **Wirth C** and Schulte A (2004): Evaluating tree carbon predictions of beech (*Fagus sylvatica* L.) in western Germany. *Forest Ecology and Management* 189(1-3): 87-96
 22. **Wirth C**, Schumacher J, Schulze E-D (2004): Generic biomass functions for Norway spruce in central Europe - a meta-analysis approach towards prediction and uncertainty estimation. *Tree Physiology* 24:121-139
 23. Ciais P, Janssens I, Shvidenko A, **Wirth C**, Mahli Y, Grace J, Schulze E-D and Heimann M: The potential for rising CO₂ to account for the observed uptake of carbon by tropical,

- temperate and boreal forest biomes. In: The Carbon Balance of Forest Biomes (eds. Griffiths H. & Jarvis PG). Garland/Science Bios Scientific Publishes, London, pp. 109-150
24. Czimczik C, Mund M, Schulze E-D and **Wirth C**: Effects of reforestation, deforestation and afforestation on carbon storage in soils. In: The Carbon Balance of Forest Biomes (eds. Griffiths H. & Jarvis PG). Garland Science/Bios Scientific Publishers, London pp. 319-330
 25. Vetter M, **Wirth C**, Böttcher H, Churkina G, Schulze E-D, Wutzler T, Weber G (2005): Partitioning direct and indirect human-induced effects on carbon sequestration of managed coniferous forests using model simulations and forest inventories. *Global Change Biology* 11: 810-827
 26. Schulze E-D, **Wirth C**, Mollicone D, Ziegler W (2005): Succession after stand replacing disturbances by fire, windthrow and insects in the dark Taiga of Central Siberia. *Oecologia* 146: 77-88
 27. Chapin III FS, Woodwell GM, Randerson JT, Lovett GM, Rastetter EB, Baldocchi DD, Clark DA, Harmon ME, Schimel DS, Valentini R, **Wirth C**, (plus 18 additional authors): Reconciling carbon cycle concepts, terminology, and methodology. *Ecosystems* 9:1041-1051
 28. McGuire DA, Chapin III FS, **Wirth C**, Apps M, Bhatti J, Callaghan T, Christensen TR, Clein JS, Fukuda M, Maximov T, Onuchin A, Shvidenko A and Vaganov E: Responses of high latitude ecosystems to global change: Potential consequences for the climate system. Chapter in *Terrestrial Ecosystems in a Changing World*, pp. 297-310. The IGBP Series, Springer-Verlag, Berlin Heidelberg
 29. McGuire A, Chapin II FS, Walsh J and **Wirth C**: Integrated regional changes in high-latitude climate feedbacks: Implications for the global climate system. *Annual Review of Environment and Resources* 31:61-91
 30. Crevoiser C, Shevliakova E, Gloor E, **Wirth C**, Pacala S: Drivers of fire in the boreal forests: Data constrained design of a prognostic model of burned area for use in dynamic global vegetation models. *Journal of Geophysical Research - Atmospheres* 112(D24) D24112 (doi:10.1029/2006JD008372)
 31. Balshi MS, McGuire AD, Zhuang Q, Melillo J, Kicklighter DW, Kasischke E, **Wirth C**, Flannigan M, Harden J, Clein JS, Burnside TJ, McAllister J, Kurz W, Apps M, and Shvidenko A (2007): The role of historical fire disturbance in the carbon dynamics of the pan-boreal region: A process-based analysis. *Journal of Geophysical Research* 112(G2) G02029
 32. Wutzler T, **Wirth C**, Schumacher J (2008) Generic biomass functions for Common beech (*Fagus sylvatica* L.) in Central Europe predictions and components of uncertainty. *Canadian Journal of Forest Research*, 38: 1661-1675
 33. Tautenhahn S, Heilmeier H, Götzberger L, Klotz S, **Wirth C**, Kühn I: On the biogeography of seed mass in Germany Distribution patterns and environmental correlates. *Ecography* 31:457-468
 34. **Wirth C**, Lichstein JW, Dushoff J, Chen A, Chapin III FS (2008): White spruce forms sapling banks in black spruce habitat: Dispersal, establishment and growth across burned vegetation boundaries in a warming climate. *Ecological Monographs* 78(4):489-505

35. Hartmann H, **Wirth C**, Messier C, Berninger F (2008): Effects of above- and below-ground partial harvest disturbance on residual sugar maple growth and water stress. *Tree Physiology* 28:1851-1862
36. Soussana J-F, Maire V, Gross N, Reinhold T, Dähring H, Pontes LS, Picon-Cochard, Fontaine S, Pages L, and **Wirth C** (2008): Modeling the functioning of complex grassland mixtures - First results of the DISCOVER project. *Fourrages* 195:259-274
37. Weedon JT, Cornwell WK, Cornelissen HC, Zanne Y, **Wirth C**, Coomes D (2009): Global meta-analysis of wood decomposition rates: A role for trait variation among tree species? *Ecology Letters* 12:45-56
38. Kattge J, Knorr W, Raddatz T, **Wirth C**: Quantifying photosynthetic capacity and nitrogen use efficiency for earth system models. *Global Change Biology* 15(4):976-991
39. Cornwell WK, Cornelissen HC, Allison S, Eggleton P, Preston C, Scarff F, Weedon JT, **Wirth C**, Zanne AE: Plant traits and wood fates across the globe — rotted, burned, or consumed? *Global Change Biology* doi:10.1111/j.1365-2486.2009.01916.x
40. Shevliakova, E, Pacala SW, Malyshev S, Hurtt GC, Milly PCD, Caspersen JP, Sentman LT, Fisk JP, **Wirth C**, Crevoisier C: Carbon cycling under 300 years of land-use change: the importance of the secondary vegetation sink. *Global Biogeochemical Cycles* doi:10.1029/2007GB003176
41. Gleixner G, Tefs C, Nueske A, Jordan A, Hammer M, Telz A, Schmidt UE, Glatzel S, **Wirth C** (2009): Soil Carbon Accumulation in Old-Growth Forests. In Wirth C, Gleixner G, Heimann M (eds.) Old-growth forests: Function, fate and value. *Ecological Studies*, Vol. 207, Springer New York, Berlin, Heidelberg
42. Frank D, Finckh M, **Wirth C** (2009): Impacts of land use on habitat function of old-growth forests and its biodiversity. In Wirth C, Gleixner G, Heimann M (eds.) Old-growth forests: Function, fate and value. *Ecological Studies*, Vol. 207, Springer New York, Berlin, Heidelberg
43. Kutsch WL, **Wirth C**, Kattge J, Noellert S, Herbst M, Kappen L (2009): Ecophysiological characteristics of large, mature trees and consequences for old-growth functioning. In Wirth C, Gleixner G, Heimann M (eds.) Old-growth forests: Function, fate and value. *Ecological Studies*, Vol. 207, Springer New York, Berlin, Heidelberg
44. Schweingruber FH, **Wirth C** (2009): Old trees and the meaning of "old". In Wirth C, Gleixner G, Heimann M (eds.) Old-growth forests: Function, fate and value. *Ecological Studies*, Vol. 207, Springer New York, Berlin, Heidelberg
45. Knohl A, Schulze E-D, **Wirth C** (2009): Biosphere-atmosphere exchange of old-growth forests: processes and pattern. In Wirth C, Gleixner G, Heimann M (eds.) Old-growth forests: Function, fate and value. *Ecological Studies*, Vol. 207, Springer New York, Berlin, Heidelberg
46. Lichstein JW, **Wirth C**, Horn HS, Pacala SW (2009): Biomass chronosequences of U.S. forests: implications for carbon storage and forest management. In Wirth C, Gleixner G, Heimann M (eds.) Old-growth forests: Function, fate and value. *Ecological Studies*, Vol. 207, Springer New York, Berlin, Heidelberg
47. **Wirth C**, Lichstein JW (2009): The imprint of succession on old-growth forest carbon balances insights from a trait-based model of forest dynamics. In Wirth C, Gleixner G, Heimann M (eds.) Old-growth forests: Function, fate and value. *Ecological Studies*, Vol. 207, Springer New York, Berlin, Heidelberg
48. **Wirth C**, Messier C, Bergeron Y, Frank D, **Fankhänel A** (2009): Old-growth forest definitions: a pragmatic view. In Wirth C, Gleixner G, Heimann M (eds.) Old-growth

- forests: Function, fate and value. *Ecological Studies*, Vol. 207, Springer New York, Berlin, Heidelberg
49. **Wirth C** (2009): Old-growth forest: Function, fate and value: A synthesis *In* Wirth C, Gleixner G, Heimann M (eds.) Old-growth forests: Function, fate and value. *Ecological Studies*, Vol. 207, Springer New York, Berlin, Heidelberg
 50. **Wirth C**, Gleixner G, Heimann M (2009): Old-growth forest: Function, fate and value: An overview *In* Wirth C, Gleixner G, Heimann M (eds.) Old-growth forests: Function, fate and value. *Ecological Studies*, Vol. 207, Springer New York, Berlin, Heidelberg
 51. Kahl T, **Wirth C**, Mund M, Bönisch G, Schulze E-D (2009): Using drill resistance to quantify the density in coarse woody debris of Norway spruce. *European Journal of Forest Research* DOI 10.1007/s10342-009-0294-2
 52. Kattge J, Ogle K, Boenisch G, Diaz S, Lavorel S, Madin J, Nadrowski N, Nöller S, Sartor K, **Wirth C**. A generic structure for plant trait databases (2010). *Methods in Ecology and Evolution* doi: 10.1111/j.2041-210X.2010.00067.x
 53. Proulx R, **Wirth C**, Voigt W, Weigelt A, Roscher C, Attinger S, Baade J, Barnard R, Buchmann N, Buscot R, Eisenhauer N, Fischer M, Gleixner G, Halle S, Hildebrandt A, Kowalski E, Kuu Annely, Lange M, Milcu A, Niklaus PA, Oelmann Y, Rosenkranz S, Sabais A, Scherber C, Scherer-Lorenzen M, Scheu S, Schulze E-D, Schumacher J, Schwichtenberg G, Soussana J-F, Temperton VM, Weisser WW, Wilcke W, Schmid B (2010) Diversity Promotes Temporal Stability across Levels of Ecosystem Organization in Experimental Grasslands. *PLoS One* 5(10): e13382
 54. Mund M, Kutsch W, **Wirth C**, Kahl T, Knohl A, Skomarkova MV, Schulze E-D (2010): The influence of climate and fructification on the inter-annual variability of stem growth and net primary productivity in an old-growth, mixed-deciduous forest. *Tree Physiology* doi:10.1093/treephys/tpq027: 1:16
 55. Nadrowski K, **Wirth C**, Scherer-Lorenzen M (2010): Is forest diversity driving ecosystem function and service? *Current Opinion in Environmental Sustainability* 2:1-5
 56. Bruelheide H, Böhnke M, Both S, Fang T, Assmann T, Baruffol M, Bauhus J, Buscot F, Chen X-Y, Ding B.-Y., Durka W., Erfmeier A., Fischer M, Geißler C, Guo D, Guo L-D, Härdtle W, He, J-S, Hector, A, Kröber, W, Kühn, P, Lang, AC, Nadrowski K, Pei KQ, Scherer-Lorenzen M, Shi XZ, Scholten T, Schuldt A, Trogisch S, von Oheimb G, Welk E, **Wirth C**, Wu, Y-T, Yang XF, Yu MJ, Zeng XQ, Zhang SR, Zhou HZ, Ma KP & Schmid B (2010): Community assembly during secondary forest succession in a Chinese subtropical forest. *Ecological Monographs* doi: 10.1890/09-2172.1
 57. Hudiburg TW, Law BE, **Wirth C**, Luysaert S. (2011) Regional carbon dioxide implications of forest bioenergy production. *Nature Clim. Change* 1264:1–5.
 58. Kattge, J, Diaz S, Lavorel S, Prentice C, Leadley P, Boenisch G, Garnier E, Westoby M, Reich PB, Wright IJ, Cornelissen JHC, Violle C, Harrison SP, van Bodegom PM, Reichstein M, Enquist BJ, Soudzilovskaia NA, Ackerly DD, Anand M, Atkin O, Bahn M, Baker TR, Baldocchi D, Bekker R, Blanco CC, Blonder B, Bond WJ, Bradstock R, Bunker DE, Casanoves F, Cavender-Bares J, Chambers JQ, Chapin III FS, Chave J, Coomes D, Cornwell WK, Craine JM, Dobrin BH, Duarte L, Durka W, Elser J, Esser G, Estiarte M, Fagan WF, Fang J, Fernandez-Mendez F, Fidelis A, Finegan B, Flores O, Ford H, Frank D, Freschet GT, Fyllas NM, Gallagher RV, Green WA, Gutierrez AG, Hickler T, Higgins SI, Hodgson JG, Jalili A, Jansen S, Joly CA, Kerkhoff AJ, Kirkup D, Kitajima K, Kleyer M, Klotz S, Knops JMH, Kramer K, Kuehn I, Kurokawa H, Laughlin D, Lee TD, Leishman M, Lens F, Lenz T, Lewis SL, Lloyd J, Llusia J, Louault F, Ma S, Mahecha MD, Manning P, Massad T, Medlyn BE, Messier J, Moles AT, Mueller SC, Nadrowski K, Naeem S, Niinemets U, Noellert S, Nueske A, Ogaya R, Oleksyn J,

- Onipchenko VG, Onoda Y, Ordonez J, Overbeck G, Ozinga WA, Patino S, Paula S, Pausas JG, Penuelas J, Phillips OL, Pillar V, Poorter H, Poorter L, Poschlod P, Prinzing A, Proulx R, Rammig A, Reinsch S, Reu B, Sack L, Salgado-Negre B, Sardans J, Shiodera S, Shipley B, Siefert A, Sosinski E, Soussana JF, Swaine E, Swenson N, Thompson K, Thornton P, Waldram M, Weiher E, White M, White S, Wright SJ, Yguel B, Zaehle S, Zanne AE and **C Wirth** (2011) TRY - a global database of plant traits. *Global Change Biology* 17:2905-2935.
59. Brukhanova M, Vaganov EA, **Wirth C** (2011) Influence of Climatic Factors and Reserve Assimilates on the Radial Growth and Carbon Isotope Composition in Tree Rings of Deciduous and Coniferous Species. *Contemporary Problems of Ecology* 4(2):126-132.
60. Brovkin V, van Bodegom PM, Kleinen T, **Wirth C**, Cornwell W, Cornelissen JHC, Kattge J: Plant-driven variation in decomposition rates improves projections of global litter stock distribution. (*Biogeosciences Discussions* accepted).

Submitted publications (international peer-reviewed journal)

- S1 Soussana S-F, Maire V, Gross N, Hill D, Bachelet B, Page L, Martin R, and **Wirth C**: GEMINI: an individual-centered grassland ecosystem model for studying plant, community, and ecosystem responses to environmental change (submitted to *Ecological Modelling*)
- S2 Maire V, Gross N, **Wirth C**, Pontes LDS, Proulx R, Börger L, Soussana J-F, Loualt F. Habitat-filtering and niche differentiation jointly determine species relative abundance within grassland communities along fertility and disturbance gradients (submitted to *New Phytologist*).
- S3 Schulze E-D, **Wirth C**, Mollicone D, von Lüpke N, Ziegler W, Achard F, Mund M, Prokushkin A, Sherbina S: Factors promoting larch dominance in eastern Siberia: fire versus growth performance and implications for carbon dynamics (submitted to *Biogeosciences Discussions*)
- S4 Reiher A, Unterseher M, Otto P, and **Wirth C**: Spatio-temporal dynamics of endophyte diversity in the canopy of European Ash (*Fraxinus excelsior*). (submitted to *Fungal Ecology*)
- S5 Holzwarth F, Fankhänel A, Bauhus J, and **Wirth C**: Many ways to die – Partitioning tree mortality dynamics in a near-natural mixed deciduous forest. (submitted to *Journal of Ecology*)
- S6 Kröber W, Böhnke M, Welk E, **Wirth C**, and Bruelheide H: Leaf trait-environment relationships in a subtropical broadleaved forest in South-East China (submitted to *PlosONE*)
- S7 Böhnke M, Kröber W, Welk E, **Wirth C**, and Bruelheide H: Maintenance of constant functional diversity during secondary succession of a subtropical forest in China (submitted to *Ecosphere*)
- S8 Tautenhahn S, Fankhänel A, Heilmeier H, Jung M, Kattge J, Moffat A, **Wirth C**: Beyond distance-invariant survival in inverse recruitment modeling (submitted to *Ecological Modelling*)
- S9 Stahl U, Kattge J, Reu B, Voigt W, Ogle K, Dickie J, **Wirth C**: Whole plant trait syndromes of North American forest trees reflect fundamental plant strategies (submitted to *Ecology*)

Non-reviewed publications

- N1 **Wirth C** (1994): Das Kienmoor – Ein schützenswertes Niedermoor am Nordrand von Barnstorf. *Zwischen Hunte und Weser (FA 5 Naturschutz, Landschaftspflege und Umweltfragen)*, *Mitteilungsblatt des Kreisheimatbundes Diepholz e. V.*, Mai 1994: 26-30.
- N2 **Wirth C** (1998): Productivity and carbon sink capacity of Russian boreal forests. *Proceedings of the International Workshop: Ecological and economic problems in the boreal woodlands of Russia*, July 2-6 1998, Dresden, 67-71.
- N3 **Wirth C** (2000): The impact of fire on the carbon dynamics in Siberian Scots pine forests. Interactions of biogeochemistry and population ecology. Ph. D. Thesis, University of Bayreuth, 266 pp.
- N4 **Wirth C**, Schulze E-D, Schwalbe G, Tomczyk S, Weber G, Weller E (2003): Dynamik der Kohlenstoffvorräte in den Wäldern Thüringens. *Berichte der Thüringer Landesanstalt für Wald, Jagd und Fischerei*, Gotha, 302 pp.
- N5 Don A, **Wirth C**, Beck C (2009): Diversity as a survival advantage. *Wissen aus erster Hand - Max-Planck Journal*.

Conferences and invited talks (selection)

- 1998 (July) International workshop “*Ecological and economic problems in the boreal woodlands of Russia*”, **Dresden, Germany**
- 1999 (June) GCTE-Workshop “*How Nutrient Cycles Constrain Carbon Balances in Boreal Forests and Arctic Tundra*”, **Abisko, Sweden**
- 2000 (Sep.) Eurosilva-Workshop “*Development and Ageing in Forest Trees*”, **Florence, Italy**
- 2000 (Nov.) FORCAST-Workshop “*Biomass and NPP determination by harvest: Harmonising methods and protocols within CarboEurope*” in **Viterbo, Italy**
- 2000 (Nov.) Invited talk at Institute of climate impact research (PIK) in **Potsdam, Germany**
- 2001 (Sep.) Invited talk at Institute of Ecology and Evolutionary Biology, Princeton University, **Princeton, USA**
- 2002 (March) Keynote talk at second *CarboEurope*-conference in **Budapest, Hungary**
- 2002 (June) European Science Foundation-LINKECOL Workshop “*The functional significance of forest diversity*”, **Weimar, Germany**
- 2002 (July) COST E21 Expert Meeting on Biomass Functions, **Besalu, Spanien**
- 2002 (Okt.) IGBP-GAIM-TRACES Workshop „*Role of Fire in Earth System Sciences*“, **Isle-sur-la-Sorgue, France**
- 2003 (June) IPCC working group „*Quantification and mechanisms of trace gas emission from land-use and land-use change – a German perspective*“, **Dornburg, Germany**
- 2003 (Sep.) Guest lecture at Sukachev Institute of Forest, Siberian Branch of the Russian Academy of Sciences, **Krasnoyarsk, Russia**
- 2003 (Nov.) Internationale Symposium „*Boreal forest disturbances and their significance for climate change*“, **Sapporo, Japan**
- 2004 (May) 12th IBFRA conference (*International Boreal Forest Research Association*), **Fairbanks, Alaska, USA**
- 2004 (June) Workshop „*Harmonizing terrestrial carbon inventories in Central and Eastern Europe*“, **Prague, Czech Republik**.

- 2004 (Sep.) Plenary talk at Universität **Fairbanks, Alaska, USA**
- 2005 (June) Guest lecture at INRA (Institut National de la Recherche Agronomique), **Clermont-Ferrand, France**
- 2006 (Jan.) Opening lecture at *Workshop on climate change, tree growth response, and reconstruction of climate*, **Krasnoyarsk, Russia**
- 2006 (March) 1st GINKGO Workshop (Network for global climate and ecosystem modelling), **Potsdam, Germany**
- 2006 (Aug.) 13th IBFRA-conference (*International Boreal Forest Research Association*), **Umea, Sweden**
- 2006 (Sep.) Guest lecture at Wyoming State University, **Laramie, USA**
- 2006 (Oct.) Invited lecture at Department of Vegetation Ecology and Nature Conservation, University of Potsdam, **Potsdam, Germany**.
- 2007 (Feb.) Guest lecture at Department for Ecological Modelling, Helmholtz Center for Environmental Research, **Leipzig, Germany**.
- 2007 (Dec.) NSF TraitNet Workshop, **New York, USA**
- 2008 (Jan.) Internationale Workshop of ARC-NZ *Vegetation Network „Fate of global wood litter: Rotting, burning, being eaten“*, **Sydney, Australia**
- 2008 (March) NEESPI Symposium “*Biogeochemical Cycles in Boreal Eurasia*“, **Jena, Germany**
- 2008 (March) IGBP-QUEST-DIVERSITAS Workshop “*Improving the representation of biodiversity in large-scale vegetation modeling: A global plant trait database*“ (Co-Organisator), **Paris, France**
- 2008 (Sep.) EURECO 11th European Ecological Conference Workshop, **Leipzig, Germany**
- 2008 (Dec.) Invited talk at Lecture Series of Institute of Botany, **University of Bern, Switzerland**
- 2008 (Dec.) DISCOVER workshop, Clermont-Ferrand, France
- 2009 (Jan.) 2nd GINKGO Workshop (Network for global climate and ecosystem modelling), **Jena, Germany**.
- 2009 (March) Sino-German Symposium on Biodiversity and Ecosystem Functioning in Chinese Subtropical Forests, **Beijing, China**
- 2009 (May) Guest lecture at Department of Community Ecology, Helmholtz Center for Environmental Research, **Halle, Germany**
- 2009 (Aug.) Workshop on Development of Biomass Functions, Technical University of Munich, **Munich, Germany**
- 2009 (Sep.) Annual Meeting of German Botanical Society, **Leipzig, Germany**
- 2009 (Oct.) DIVERSITAS Open Science Conference, **Cape Town, South Africa**
- 2009 (Oct.) Plenary talk 2nd TRY / BBS workshop of DIVERSITAS-IGBP-QUEST, **Cape Town, South Africa**
- 2009 (Nov.) Keynote talk at DFG Workshop in “Biodiversity and Climate”, **Thurnau, Germany**
- 2009 (March) Sino-German Symposium on Biodiversity and Ecosystem Functioning in Chinese Subtropical Forests, **Beijing, China**
- 2010 (Sep.) Ecological Society of Germany, Switzerland, and Austria annual meeting – BEAM workshop, **Giessen, Germany**
- 2010 (Jan.) Workshop of Vegetation Function Network “Linking wood and leaf decomposability”, **Akaroa, New Zealand**

2011 (Jan) Plenary talk 3rd TRY / BBS workshop of DIVERSITAS-IGBP-QUEST, **Paris
France**

Lectured courses (* incl. seminars and lab / field courses)

- Introduction to Plant Ecology (University of Jena)
- Introduction to Forest Ecology (University of Jena)
- *General Ecology (University of Leipzig)
- *Global Vegetation Ecology (University of Leipzig)
- *Functional Biodiversity of Plants (University of Leipzig)
- *Biodiversity and Ecosystem Functioning (University of Leipzig)

Supervision

Bachelorstudents: Corinna Hoehl (2009), Martin Schubert (2010), Ronny Richter (2011), Peter Hahn (2011), Steve Wolfarth (2011), Florian Schulz (2011)

Diploma and Masterstudents: Martin Siry (2000), Gernot Harges (2000), Martina Dötterl (2001), Timo Kahl (2003), Thomas Guse (2009), Henrike Wagner (2010), Mario Liebergesell (2010), Alexandra Bähring (2010), Daniela Klie (2010), Katja Hoffmann (2011), Catleen Leidhold (2011), Martin Bulst (2011), Stefanie Harnapp (2011), Stefan Mund (2011), Elisabeth Klann (2011)

Former PhD students: Claudia Raedig (2010), Almut Reiher (2011), Andre Lindner (2011)

Current PhD students: Susanne Tautenhahn, Ulrike Stahl, Katharina Pietsch, Frederic Holzwarth, Carolin Seele, Mario Liebergesell, Yanli Zhuang, Thomas Schroeder-Georgi, Daniel Marra, Kristin Barber

Current Post-Doctoral Scientists: Dr. Karin Nadrowski, Dr. Nadja Rüger, Dr. Sophia Ratcliffe, Dr. Björn Reu, Dr. Alexandra Weigelt

Former Post-Doctoral Scientists: Dr. Jens Kattge, Dr. Marin Skomarkova, Dr. Raphael Proulx, Dr. Johannis Dietz