

July 10, 2015

## Kim Pilegaard

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### Work:

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Technical University of Denmark (DTU)  
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Denmark  
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<b>Date of Birth</b>	24 August 1950, Frederiksberg, Denmark	
<b>Education</b>	<b>Ph.D. (Lic. scient.)</b> University of Copenhagen, Institute of Plant Ecology Biological Monitoring of Air Pollution (method development and applications)	June 1978
	<b>Master of Science (Cand. scient.)</b> University of Copenhagen Biology (environmental sciences)	June 1975
	<b>High school</b> Efterslægtsselskabets skole	June 1969
<b>Post Education</b>	<b>External courses:</b> Situational leadership (2003); Leadership in practice (2002–2005); Workplace Safety (2002); Statistical modelling and advanced programming (1999); Ecotoxicology (1983); University teaching techniques (1977).  <b>Internal courses:</b> Speech training; Marketing; Project leadership; Presentation technique; Personal Development.	
<b>Professional experience</b>	<b>Professor</b> , Technical University of Denmark (DTU)	2012-date
	<b>Adjunct Professor</b> , University of Copenhagen	2006-date
	<b>Head of Division</b> , Risø National Laboratory	2005-2011
	<b>Head of Programme</b> , Risø National Laboratory	2001-2005
	<b>Senior Scientist</b> , Risø National Laboratory	1992-2001
	<b>Scientist</b> , Risø National Laboratory	1981-1992
	<b>Post. Doc.</b> , University of Copenhagen	1978-1981
	<b>Ph.D. student</b> , University of Copenhagen	1975-1978
	<b>Teaching Assistant</b> , University of Copenhagen	1972-1975
<b>Research profile</b>	My research has been centered around biosphere–atmosphere exchange in terrestrial ecosystems. The first 10 years mainly dealt with spread and deposition of heavy metals from indus-	

trial activities such as power plants, steel works and mining (Greenland), including environmental assessments. The next 10 years were centered on aspects of acid rain and atmospheric chemistry. During this phase I started working with micro-meteorology and implemented flux measurement methods of nitrogen oxides and ozone. During the last decade the main emphasis has been on greenhouse gas exchange including long-term measurements of CO<sub>2</sub> fluxes and effects of climate change. My main contribution to the international research community is long-term flux measurements of CO<sub>2</sub> over different ecosystems. The data and results have been made available to the international research community through the NASA-funded organisation FLUXNET.

**Research output**

- 102 papers in peer reviewed journals (including 5 papers in Nature Journals).
- ISI citation index: 93 papers, cited 10,105 times, citations/paper: 108.66, h-index: 38 (July, 2015).
- 1 paper cited 1328 times, 20 papers cited  $\geq$  100 times.
- 12 book chapters.

**Academic Honours**

Norbert Gerbier–Mumm International Award For paper by Law et al. 2002 (see list of publications).	2004
Norbert Gerbier–Mumm International Award For paper by Yi et al. 2010 (see list of publications).	2011
Thomson Reuters: Highly Cited Researcher 2002-2012.	2014

**Teaching**

Teaching at master and Ph.D. level in ecophysiology, climate change, greenhouse gas exchange and industrial ecology.

**Supervision and mentorship**

Since the main part of my carrier has been at the Ris National Laboratory (a research institution without students), I have supervised only a few Ph.D. students. However, I have served as external examiner at both University of Copenhagen and the Technical University of Denmark. In addition, I have been external examiner of Ph.D. theses at University of Jena, Germany, University of Lund, Sweden, University of Helsinki, Finland, and the University of Manchester, Great Britain.

**Ph.D. students:**

- Patrik Fauser (1995-1998): Particulate Air Pollution, with emphasis on Traffic Generated Aerosols.
- Shoa Yao (2008): Metabolic Engineering of Ethanol Production in *Thermoanaerobacter mathranii* BG1.
- Xiaoru Hou (2008-2011): Development of industrial yeast for second generation bioethanol production.
- Tinghong Chang (2008-2011): Improvement of thermophilic bacteria for ethanol production from lignocellulose.
- Andreas Brændholt (2014-2017): Partitioning forest soil respiration into autotrophic and heterotrophic respiration.
- Aikaterini Efthymiou (2014-2015 (moved to KU)): PSM-solubilization of Inorganic phosphorus in gasified waste products: molecular mechanisms and role of AMF in P transfer to plants.

- Nelly Raymond (2014-2015 (moved to KU)): SM-solubilization of inorganic phosphorus in gasified waste products: optimization of the performance and persistence of biofertilizers in different soil/crop systems.

## Committees

**Bundesministerium für Bildung und Forschung** (Germany): Project evaluation for AFO2000 (German Programme on Atmospheric Research (2000–2006)).

**Danish Center for Atmospheric Research (DCAR)**: Chairman of working group on effects.

**Danish Polar Center**: AMAP (Arctic Monitoring and Assessment Programme) steering groups on terrestrial environment and air pollution.

**Direktoratet for Fødevarer Erhverv**: Programme committee for the research programme “Jordbruget i et ressourcemæssigt helhedsperspektiv”.

**International Geosphere–Biosphere Programme**: Member of Danish National Committee 2007 -, Chairman 2012 –.

**EU**: Project evaluation under FP4 and FP5. Evaluation of Marie Curie applications. External observer on the GRAMINAE project.

**European Science Foundation**: Member of steering committee for Scientific Programmes and COST actions: Stable Isotopes in Biospheric-Atmospheric Exchange (SIBAE); Advancing the integrated monitoring of trace gas exchange between biosphere and atmosphere (ABBA); The terrestrial biosphere in the Earth system (TERRABITES). Evaluation of applications for programmes and fellowships.

**EUROTRAC-2**: Steering committee for Biosphere Atmosphere Exchange (BIATEX-2).

**Fonds Wetenschappelijk Onderzoek (FWO), Flandern, Belgium**: Evaluation of research proposals.

**Hungarian Scientific Research Fund (OTKA)**: Evaluation of research proposal.

**Ministry of the Environment**: Environmental consequences of coal-fired power plants. Environmental assessment of cadmium. Evaluation of projects under Nordic Council of Ministers (MIL-3).

**Ministry of Greenland**: Assessment of air pollution around lead mine in Maarmorilik. Assessment of proposals for mining columbium and tantalum.

**Ministry of Research** : International evaluation of Danish environmental research. National strategy for agricultural research (working group on forest and landscape). Advisory group for EU Environment and Climate Research Programme (FP7) and for Horizon 2020 (Climate action, environment, resource efficiency and raw materials).

**Norges Forskningsråd** (Norwegian Research Council): Evaluation of research proposals.

**The Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning**: Evaluation of research proposals.

## Censorship

**Technical University of Denmark**: Courses in air pollution. Project and masters theses.

**University of Copenhagen:** Courses in ecology and plant physiology. Project and masters theses. Ph.D. theses.

**University of Jena, Germany, University of Lund, Sweden, University of Helsinki, Finland, and University of Manchester, Great Britain:** Ph. D. theses.

<b>Consultancy</b>	Greenex A/S; DOPCO A/S; NKT A/S; Hecla Mining Corporation.																
<b>Referee</b>	Agricultural and Forest Meteorology; Agriculture, Ecosystems & Environment; Ambio; Atmospheric Chemistry and Physics; Atmospheric Environment; Atmospheric Measurement Techniques; Biogeochemistry; Biogeosciences; Biosystems Engineering; Boreal Environmental Research; Canadian Journal of Forest Research; Journal of Environmental Management; Environmental Pollution; Environmental Science and Technology; Forest Ecology and Management; Geophysical Research Letters; Global Biogeochemical Cycles; Global Change Biology; Journal of Environmental Quality; Journal of Geophysical Research; Nature; Oecologia; PLOS ONE; Proceedings of the Royal Society; Soil Biology and Biochemistry; Tellus; Tree Physiology; Water, Air and Soil Pollution.																
<b>Editor</b>	Editor of 3 special issues of Biogeosciences.																
<b>Major recent research projects</b>	<table><tr><td><b>ISOFLUX</b>, FNU Partitioning forest ecosystem respiration by application of novel isotope laser spectroscopy.</td><td>2013–2017</td></tr><tr><td><b>InGOS</b>, EU Improving the observational capacities for non-CO<sub>2</sub> GHG's. Accurate GHG concentration measurements from tall tower.</td><td>2011–2015</td></tr><tr><td><b>GHG-Europe</b>, EU Greenhouse gas management in European land use systems. Role of nitrogen in GHG balance for European forests.</td><td>2010–2013</td></tr><tr><td><b>ICOS</b>, EU and FI Preparation of Danish participation in ESFRI project ICOS. Integrated carbon observation system.</td><td>2008–2012</td></tr><tr><td><b>2G Bioethanol</b>, The Danish National Advanced Technology Foundation Platform for second generation bioethanol. Pretreatment and fermentation of biomass.</td><td>2008-2010</td></tr><tr><td><b>IMECC</b>, EU Infrastructure for Measurement of the European Carbon Cycle. CO<sub>2</sub> flux measurements in beech forest.</td><td>2007–2011</td></tr><tr><td><b>NitroEurope-IP</b>, EU Integrated European research into the nitrogen cycle Flux measurements in forests.</td><td>2006–2011</td></tr><tr><td><b>ACCENT</b>, EU Networks of Excellence Atmospheric composition change. Member of steering committee of subproject BIAFLUX. Organized Workshop on flux methodology, Risø April 2005.</td><td>2004–2009</td></tr></table>	<b>ISOFLUX</b> , FNU Partitioning forest ecosystem respiration by application of novel isotope laser spectroscopy.	2013–2017	<b>InGOS</b> , EU Improving the observational capacities for non-CO <sub>2</sub> GHG's. Accurate GHG concentration measurements from tall tower.	2011–2015	<b>GHG-Europe</b> , EU Greenhouse gas management in European land use systems. Role of nitrogen in GHG balance for European forests.	2010–2013	<b>ICOS</b> , EU and FI Preparation of Danish participation in ESFRI project ICOS. Integrated carbon observation system.	2008–2012	<b>2G Bioethanol</b> , The Danish National Advanced Technology Foundation Platform for second generation bioethanol. Pretreatment and fermentation of biomass.	2008-2010	<b>IMECC</b> , EU Infrastructure for Measurement of the European Carbon Cycle. CO <sub>2</sub> flux measurements in beech forest.	2007–2011	<b>NitroEurope-IP</b> , EU Integrated European research into the nitrogen cycle Flux measurements in forests.	2006–2011	<b>ACCENT</b> , EU Networks of Excellence Atmospheric composition change. Member of steering committee of subproject BIAFLUX. Organized Workshop on flux methodology, Risø April 2005.	2004–2009
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<b>CARBOEUROPE-IP, EU</b> The role of the European continent in the global carbon cycle. Flux measurements in forest and grassland.	2004–2009
<b>CLIMAITTE, Willum Kann-Rasmussen Foundation</b> Climate change effects on biological processes and natural ecosystems.	2004–2012
<b>GREENGRASS, EU</b> Sources and Sinks of Greenhouse Gases from managed European Grasslands and Mitigation Strategies. CO <sub>2</sub> exchange over grassland.	2001–2004
<b>NOFRETETE, EU</b> Nitrogen oxides emissions from European forest ecosystems. NO emission from forest floor; NO <sub>2</sub> exchange over forest.	2001–2004
<b>CARBOEUROFLUX, EU</b> An investigation on Carbon and Energy exchanges of terrestrial ecosystems in Europe. CO <sub>2</sub> exchange over forest, soil respiration.	2000–2003
<b>CORE, EU</b> Climate Atmosphere Interactions. Continuous field measurements for observations of atmospheric compounds and properties.	2000–2003
<b>FOREXNOX-II, EU</b> Exchange of ozone and nitrogen oxides at the forest atmosphere interface. Flux divergence of NO, NO <sub>2</sub> and O <sub>3</sub> .	2000–2003
<b>Centre for Sustainable Land Use and Management of Contaminants, Carbon and Nitrogen,</b> Danish Environmental Research programme Effects of Land Use and Organic Waste Application on Carbon and Nitrogen Fluxes.	1997–2001
<b>EUROFLUX, EU</b> Long term carbon dioxide and water vapour fluxes of European forests and interactions with the Climate System. CO <sub>2</sub> exchange over forest, soil respiration.	1996–1999
<b>BEMA-II, EU</b> Biogenic Emission in the Mediterranean Area. Exchange of O <sub>3</sub> , NO and NO <sub>2</sub> over orange orchard.	1996–1997
<b>Centre for Terrestrial Ecosystem Research,</b> Danish Environmental Research programme. Nitrogen fluxes in coniferous ecosystems.	1992–1997
<b>FOREXNOX-I, EU</b> Fluxes of NO, NO <sub>2</sub> and O <sub>3</sub> over forest.	1992–1995
<b>TRACT, EU</b>	1990–1992

Transport of Pollutants over Complex Terrain.  
Exchange of O<sub>3</sub>, NO and NO<sub>2</sub> over re-grown wheat.