

CV - BIRGER LINDBERG MØLLER

Researcher unique identifiers: ORCID: 0000-0002-3252-3119; Research ID: H-2657-2014

Date of birth: November 17th, 1946; Nationality: Danish; URL for web site: <https://synbio.ku.dk/blm>

H-index: 67; **Total number of citations:** >13,100; **Registered publications:** 384 (Source: Web of Science)

EDUCATION

M.Sc. 1972; Ph.D. 1975; D.Sc. 1984 (University of Copenhagen); D.Sc.h.c.

CURRENT POSITIONS

- 2015-present: Distinguished Professor and Consultant, Carlsberg Research Laboratory, Copenhagen Valby, 6% employment
- 1990-present: Professor, Plant Biochemistry Laboratory, Department of Plant Biology and Environmental Sciences, University of Copenhagen, Frederiksberg, Copenhagen, 100% employment

PREVIOUS POSITIONS

- 2014-2015: Head of the Carlsberg Laboratory, Copenhagen Valby, contract to reorganize the lab, 20% employment
- 2010-2013: Professor in Plant Biochemistry, Section Director of “Plant Pathway Discovery” in the Novo Nordisk Foundation Center for Bio-Sustainability, Technical University of Denmark, Lyngby, 20% employment
- 1984-1990: Research Professor, Plant Biochemistry Laboratory, Department of Plant Physiology, Royal Veterinary & Agricultural University (now merged into University of Copenhagen), Copenhagen, Frederiksberg. One among the first five “elite research professorships” established by the Danish Government
- 1977-1983: Senior Research Scientist and Niels Bohr Fellow, Department of Physiology, Carlsberg Laboratory, Copenhagen Valby
- 1975-1977: Fulbright-Hays Act Fellow, Department of Biochemistry & Biophysics, University of California, Davis, California

DIRECTOR OF RESEARCH CENTERS

- 2013-2019: VILLUM Research Centre for Plant Plasticity – 5 M€
- 2013-2018: Center for Synthetic Biology “bioSYnergy”, UCPH Excellence Programme for Interdisciplinary Research (<https://synbio.ku.dk/research/biosynergy/>) – 3.5 M€
- 2010-2014: UNIK Synthetic Biology, one of four Centres of Excellence established in Denmark by the Ministry of Science, Technology and Innovation (<https://www.synbio.ku.dk/>) – 16 M€
- 2008-2013: VILLUM Research Centre Pro-Active Plants – 3 M€
- 1998-2008: Centre of Molecular Plant Physiology (PlaCe), Center of Excellence in plant biology in Denmark supported by the Danish National Research Foundation – 13 M€

MAJOR RESEARCH GRANTS, last 13 years

In the last 13 years I have raised > 35 M€ in research grants:

- 2021-2026: Carlsberg Foundation (co-PI) Semper Ardens research project: Crops for the future - Tackling the challenges of changing climates - 1.2 M€
- 2020-2025: Carlsberg Foundation: LCMS Ion-Trap based research towards climate resilient crop plants – 0.2 M€

- 2019-2024: Novo Nordisk Foundation, Distinguished Grant: “Black Holes in the Plant Universe” – 1.3 M€
- 2018-2020: VILLUM Experiment - 0.26 M€
- 2016-2020: Novo Nordisk Foundation Synergy Grant: Desert-loving therapeutics – 2 M€
- 2016-2019: Lundbeck Foundation: Brewing diterpenoids – 1.4 M€
- 2016-2018: ERC Proof of Concept Grant – 0.14 M€
- 2015-2017: Innovation Fund Denmark, Innobooster: SUNWORKS – 0.8 M€
- 2013-2019: ERC Advanced Grant: Lightdriven P450s – 2.5 M€
- 2013-2018: UCPH Excellence Progr. for Interdisciplinary Research: bioSYnergy – 3.5 M€
- 2012-2020: 3 ARC Linkage Grants with Melbourne, Monash and Queensland Universities – 0.3 M€
- 2012: Villum Foundation Post Doc Block Stipend – 0.3 M
- 2009-2014: UNIK Synthetic Biology, Ministry of Science, Technology and Innovation – 16 M€. Of these 4.8 million € is assigned to projects, instrumentation and infrastructure within plant biology. My research group received 90.000 €/year for studies on light driven hydroxylations obtained by linking Photosystem I to cytochrome P450 enzymes
- 2008-2019: VILLUM Centers for Pro-active Plants and Plant Plasticity – 8 M€

OTHER GRANTING AGENCIES

The Danish Council for Independent Research, Human Frontier Science Programme, EU LifeSciHealth STREP, EU Marie Curie, Australian Research Council, Spanish Research Council, Carlsberg Foundation, The Rockefeller Foundation, Danish National Research Foundation, Villum Kann Rasmussen Foundation, Danish Research Councils and DANIDA.

RESEARCH AWARDS

- 2014: Awarded Order of the Dannebrog. Knight 1st Class
- 2013: Awarded title of Honorary Professor at University of Queensland
- 2010-2019: Invited Visiting Professor at University of Melbourne and Monash University, Melbourne, Australia and University of Queensland, Brisbane, Australia during the month of May
- 2009: Appointed Honorary Doctor at the University of Umeå, Sweden
- 2007: Villum Kann Rasmussen Research Prize (350.000 €). The largest Danish research award
- 2004: The Academy of Future Research, “The Future Prize” (17,000 €)
- 2003: Societas Physiologia Plantarum Scandinavica “Popularization Prize” (17,000 €)
- 1995: Promoted by the Queen of Denmark as Knight of the Dannebrog
- 1994: “Director Ib Henriksens Research Prize” (33,000 €)
- 1994: Carlsberg Research Prize Award (18,000 €)
- 1991: “Fabrikant Ulrik Brinch og hustru Marie Brinchs Legat” Technical University of Denmark (14,000 €)
- 1988: Pedersholm Legat (36,000 €)
- 1985: Hans Gram Medal, the Royal Danish Academy of Sciences and Letters.

SUPERVISION, MENTORING AND TEACHING

- Main advisor of >55 PhD-students
- Mentor for a similar number of postdoctoral fellows and BSc and MSc students.
- Mentor for Bio-Hackerspaces in Denmark and US.
- Teaching courses e.g. Frontiers in Plant Science, Beer and Wine Course, Applied Biotechnology, Synthetic Biology and Advanced Biotechnology at University of Copenhagen.

INVITED LECTURES AT INTERNATIONAL CONFERENCES

Numerous invited lectures at international meetings including the Nature.com conferences, International Yeast 2.0 and Synthetic Genomes Conferences, “Revolutionizing agriculture with synthetic biology”

Banbury Center, Science think tank; Cold Spring Harbor Laboratory conferences, International Conferences on Cytochrome P450.

COMMUNICATION AND ART-SCIENCE-SOCIETY COLLABORATIONS

I have given numerous interviews to newspapers, radio and digital media (www.synbio.ku.dk/media/) and continuously present our research at major events, e.g.:

- På sporet af planternes hemmeligheder (in danish) <https://soundcloud.com/user-994950474/pa-sporet-af-planternes-hemmeligheder>
 - Material Design with Synthetic Biology: <https://www.youtube.com/watch?v=1k7u91RTEuo>
 - TEDx talk: Plant Power: The Ultimate Way to Go Green – on synthetic biology and citizen science <https://www.youtube.com/watch?v=6oiWJOTydWA>
 - World Economic Forum: The Future of Energy from Plants (ERC-invited) https://synbio.ku.dk/news/davos_2015/
 - American Society of Cell Biology: Center for Synthetic Biology – Plant Pathway Discovery <https://www.youtube.com/watch?v=F1xxdRp-lEc&feature=youtu.be> also featuring our young researchers
- I enjoy many contacts to artists, designers and architects wrt our different research topics e.g.
- Talk at the “Light Space: textile illumination” symposium on September 14th, 2018 in Copenhagen on integrating light technologies in architectural design practices to support resilient ways of living.
 - Co-org. and keynote at Society of Literature, Science and Arts GREEN 2018, interdisciplinary art-science-humanities-policies conference: <https://green-slsa2018.ku.dk/>
 - Documentary movies: “On the edge of a new paradigm” by Alfred Birkegaard, “Good Things Await” (2014) and “When you look away” (2017) by Phie Ambo.

CURRENT RESEARCH INTERESTS

Biochemistry will always be my passion and my drive, especially focused on the biochemical processes enabling plants to counteract biotic and abiotic environmental challenges. Cyanogenic glucosides and diterpenoids have been our experimental model systems. Major hallmarks of our research within plant pathway discovery has been the elucidation of the biosynthetic pathways for high-value phytochemicals such as diterpenoids, vanillin, carmine and steviosides – and the basic science behind their biosynthesis and metabolism (cytochromes P450-enzymes, glycosyltransferases, metabolon formation, self-assembly etc) and development of light driven production systems for high value compounds.

ORGANISATION OF INTERNATIONAL SCIENTIFIC MEETINGS

- GREEN: 12th European Society for Literature, Science and Arts Conference, June 13-16th, 2018, Copenhagen. Steering Committee member, Sponsor, Plenary lecture
- 14th International Symposium on Cytochrome P450 Biodiversity and Biotechnology, July 15-19th, 2018, York. Steering Committee member, Symposium lecture



ACADEMIC SOCIETIES

- 2013-present: Elected Corresponding Member of the Australian Academy of Science
- 1994-present: Appointed member of the [Royal Danish Academy of Sciences and Letters](#)
- 1993-present: Appointed member of the [Danish Academy of Technical Sciences](#)
- 1993-present: Appointed member of the [Danish Academy of Natural Sciences](#)

RESEARCH ADMINISTRATION

- 2019-present: Member of the Scientific Advisory Board of CSIRO Synthetic Biology Future Platform, the Australian National Center of Synthetic Biology, Australia
- 2018-present: Member of the Scientific Advisory Board of SynBioactive, a research initiative between Univ. Queensland and Technische Univ. München
- 2018-present: Member of the Scientific Advisory Board of Octarine Bio, a start-up spin-out based on the ERC ADG and ERC Proof of Concept grants and supported by the Novo Nordisk Bio-Innovation Institute, Copenhagen, and several private and institutional investors
- 2018- present: Current member of the Scientific Advisory Board of River Stone Denmark, a start-up biotech company, 17 employees, Copenhagen
- 2015-present: UK Synbio Roadmap reviewer and advisor of new synbio centers across UK (300M£)
- 2013-2020: Member of the Scientific Advisory Board of Evolva Biotech, a biotech company with >70 employees, Basel, Switzerland
- 2011-2014: Member of the [Danish Council for Research Policy](#)
- 2011-2015: Appointed by the [Royal Danish Academy of Science and Letters](#) as the Danish representative to the [European Academies of Science](#) Advisory Council
- 2008-present: Member of the Scientific Advisory Board of Max-Planck Institute of Chemical Ecology, Jena, Germany
- 2007-present: Elected member of the [International Human Rights Network of Academies and Scholarly Societies](#), Washington
- 2007-2009: Chairman of the Federation Fellowships Selection Committee at the Australian Research Council responsible for awarding annual grants totalling 25 million €
- 2006-2009: Coordinator of EEC research programs. Recipient of a prestigious grant from the [Human Frontier of Science Program](#)
- 2006-2009: Member of the Research Advisory Board for the Danish Biotech Company Aresa, developing plants for the detection of land mines
- 2001-2009: Member of the Board of Trustees of the International Institute of Tropical Agriculture (IITA), Ibadan, Nigeria
- 2001-2008: Member of the Scientific Advisory Board of the [Leibniz Institute of Plant Biochemistry](#), Halle, Germany
- 2001-2007: Co-founder of the Danish Biotech Company Poalis A/S, the pharma business of which was subsequently acquired by [Evolva Biotech A/S](#)
- 2001-2005: Appointed by the Minister of Food, Agriculture and Fisheries as Member of the Board of the Danish Institute of Agricultural Sciences
- 1998-2014: Member of the Board of the [Pajbjerg Foundation](#) and of the Advisory Board of Nordic Seed
- 1998-2012: Member of the Leader Group of Department of Plant Biology and Biotechnology
- 1992-present: Member of the [Danish Board of Appeal for Patents](#)
- 1992-2009: Member of the [Academic Council of KU-SCIENCE](#) and vice-chairman of the Research Board

Selected Positions of Trust at the University of Copenhagen:

- Appointed by the Deans of the Science, Life Science and Pharma Faculties of the University of Copenhagen as Member of a Research Committee to recommend how the University fusions in the Copenhagen area should be optimized across and within different disciplines. This work resulted in the influential report P. Krogsgaard-Larsen, B.L. Møller, E. H. Larsen, B. Vestergaard, C. Lunde and P. Stæhr: [Synergies within the natural sciences at the University of Copenhagen](#) - an interfaculty evaluation of barriers and opportunities to improve the quality of infrastructure, research and education. ISBN 978-87-90655-79-2 (2009) 43 pp

- Appointed by the Vice-Chancellor of the University of Copenhagen as Member of a Task Force to restructure collaboration between industrial partners and governmental institutions and the University of Copenhagen. This resulted in the report **S.P. Olesen, H.Harmsen and B.L.Møller**: The Recommendations of the Task Force regarding collaboration between Private Industries and the University of Copenhagen” (2009-2010), 57 pp.

Evaluation Panels and Positions of Trust:

- 1999: Member of an international panel to evaluate agricultural research in Sweden
- 1993: Appointed by the Danish Minister of Food, Agriculture and Fisheries as member of the supreme committee to establish a “National Strategy for the Agricultural Sciences in Denmark”
- 1992-1998: Appointed by the Minister of Research as Member of the [Danish Research Council for Agriculture and Veterinary Sciences](#)

Memberships to Recruitment Panels/Editorial Boards/Journal Referee:

- Member of numerous panels responsible for recruitment of Research Directors and Full Professors in Denmark and abroad.
- Associate Editor of the journal Metabolic Engineering and Member of the Editorial Board of [Phytochemistry](#); Reviewer for Nature, [Science](#), [PNAS](#), [Plant Cell](#), [Plant Journal](#), [Plant Physiology](#), [Phytochemistry](#) and others.