

CV: Arnfinn SUNDSFJORD

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Date of Birth: 08/07/1958

Email: arnfinn.sundsfjord@uit.no Citizenship: Norwegian

Academic positions: Professor of Medical Microbiology, Department of Medical Biology, Faculty of Health Sciences, UiT – The Arctic University of Norway *and* Program director Centre for New Antibacterial Strategies (CANS; UiT <https://cans.uit.no/>)



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Education

- 1983: MD, Faculty of Medicine, University of Tromsø (UiT)
- 1992: Specialist of Clinical Microbiology, University hospital of North –Norway (UNN)
- 1994: PhD, Faculty of Medicine, UiT

Employment

- 2001 - *Present*: Professor of Medical Microbiology, UiT.
- 2001 - *Present*: Director, National Norwegian Advisory Unit in Detection of Antimicrobial resistance (K-res), UNN.
- 2019 – *Present*: Director, Centre for New Antibacterial Strategies (CANS), UiT
- 2009-17: Dean, Faculty of Health Sciences, UiT
- 1995-2001: Associate professor of Medical Microbiology, UiT
- 1992- *present*: Senior consultant microbiologist, UNN (part-time from 1995).
- 1987-1989: PhD-fellow, Department of Medical Biology, UiT
- 1985-86 and 1990-91: Advanced training in Clinical Microbiology, UNN
- 1983-85: Internship medicine, surgery and general practice, military service

Main research topics and expertise relevant for the application

- (i) Multilevel molecular epidemiology of antimicrobial resistance including antimicrobial resistance (AMR)-transfer between ecological reservoirs (animals and humans), (ii) Elucidation of AMR-mechanisms, their genetic support and mechanisms of persistence (iii) Development and validation of pheno- and genotypic AMR-detection methods.

Mobility (visiting scholar)

- 2000-01: Unité des Agents Antibactériens, Institut Pasteur, Paris (att: prof P Courvalin).
- 2008: Dept of Medical Microbiology, University Medical Centre Utrecht (att: prof Marc Bonten)
- 2018: Dept of Microbiology and Immunology, The University of Melbourne at the Doherty Institute for Infection & Immunity, Melbourne (att: prof Benjamin Howden)

Awards and distinctions

- 1982-83: Student Research Fellowship, Research Council of Norway (RCN)
- 1995: Young research investigator award, Nordic Society for Clinical Microbiology and Infectious Diseases (NSCMID)
- 1996: Excellence in teaching award, Faculty of Medicine, UiT.
- 2000-1: One year visiting professor fellowship (from RCN), Institute Pasteur, Paris.
- 2006 and 2019: Excellence in research award, Faculty of Medicine/Health Science, UiT/Regional Health Authority (2006)
- 2014 - *Present*: Honorary Research fellow, School of Health Sciences, Univ of KwaZulu-Natal, Durban
- 2017: Fellow, European Society for Clinical Microbiology and Infectious Diseases (ESCMID)

Meeting and conference organization contributions and commission of trust

- *Editorial Board:* Norwegian Medical Journal (1999-), Clin Microbiol and Infection (2005-), Microbial Drug Resistance (2008-), APMIS (National Editor; 2014-).

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- *External grant reviewer* National Research Foundations; Several EU-countries including the Swedish Research Council (2013-18), panel chair for “Infection and antibiotics” (2015).
- *PhD-thesis evaluator* (1996-); 22 dr. thesis in Norway, Denmark (n=3) and Sweden (n=4).
- *International program committees:* American Society for Microbiology (ASM) Conference on enterococci (2005), Nordic Society for Clinical Microbiology and Infectious Diseases (NSCMID) yearly 2009-15 and ESCMID yearly 2016-18, Amsterdam, Vienna and Madrid.
- *NSCMID:* President annual meeting 2009, Board member NSCMID 2008-15.
- *Joint Programming Initiative AMR (JPI-AMR):* First Scientific Advisory Board 2011-14.
- *Norwegian ministry of Health:* HO21 Strategic advisory board member 2013-17.
- *Board member, Regional Health Authority North (Helse Nord RHF),* 2014-17
- *Norwegian Directorate for Health:* The Norwegian Working Group for Antibiotics (NWGA) Member, secretary 1996-2004, chair 2005-2012, and re-elected chair 2019-.
- *Research Council of Norway,* Chair Board, Health programs (Porteføljestyret HELSE), 2019-23.
- *IBA – The Natioanl Graduate School in Infection Biology and Antimicrobials,* Chair Board, 2019-

Student supervision

Main- or co-supervised MSc- (n=18)/PhD- (n=22; main n=10) students to final thesis and postdocs (n=7) of which four have become professors. Ongoing main (n=2) and co-PhD supervision (n=4).

Larger grants and national, international collaborative projects

- *2000 - 11:* RCN-contracts 143267/310, 165997/V40, FUGE II, FRIBIOMOL (PI/Co-PI).
- *2001- present:* Norwegian National Advisory Unit on Detection of Antimicrobial Resistance, Ministry of Health. 3.5 mill NOK/year (PI)
- *2004-12:* ASPIRE-project, Northern Norway Regional Health Authority Medical Research Programme 2-4 mill NOK/year (PI)
- *2002-2006:* WP-leader, EU 5th FP “ARTRADI - Antimicrobial Resistance Transfer From and Between Gram-Positive Bacteria of the Digestive Tract and Consequences for Virulence”. Contract # QLK2-CT-2002-00843.
- *2007-10:* WP-leader, EU 6th FP “ACE - Approaches to Control multi-resistant Enterococci: studies on molecular ecology, horizontal gene transfer, fitness and prevention”. Contract # LSHE-CT-2007-037410.
- *2014-19:* NORHED – Norwegian PI, “Antimicrobial stewardship and conservancy in Africa”, Contract # 1300654-3 QZA-0484. 19 mill NOK.
- *2018-19:* NOR-KLEB-NET (<http://nor-kleb.net/>), RCN (co-PI). 2 mill NOK.
- *2019-23:* KLEB-GAP project, Trond Mohn Foundation. PI. 20 Mill NOK with six national and 4 international partners including Karolinska Institutet, Institute Pasteur (Paris), Monash University Melbourne (AUS), and Queen’s University Belfast (UK).
- *2019-25:* Centre for New Antibacterial Strategies (CANS- PI), UiT and Tromsø research Foundation. 130 mill NOK, involving 14 research groups, seven departments and three faculties.

Publications

142 publications (PubMed; <https://www.ncbi.nlm.nih.gov/pubmed/?term=sundsfjord+A>). 8304 citations and *h*-index 53 (30 since 2015) as of January, 2020 (Google Scholar; <https://scholar.google.no/citations?user=3r8RZMkAAAAJ&hl=no&oi=ao>).

20 selected publications

1. Zykov IN, Frimodt-Møller N, Småbrekke L, Sundsfjord A, Samuelsen Ø. Efficacy of mecillinam against clinical multidrug-resistant *Escherichia coli* in a murine urinary tract infection model. *Int J Anti Agents*. 2019 Nov 23;105851. doi: 10.1016/j.ijantimicag.2019.11.008. <https://www.ncbi.nlm.nih.gov/pubmed/31770624>
2. Pedersen T, Sekyere JO, Govinden U, Moodley K, Sivertsen A, Samuelsen Ø, Essack S, **Sundsfjord A**. Spread of Plasmid-Encoded NDM-1 and GES-5 Carbapenemases among Extensively Drug-Resistant and Pandrug-Resistant Clinical Enterobacteriaceae in Durban, South Africa. **Antimicrob Agents Chemother** 2018; <https://www.ncbi.nlm.nih.gov/pubmed/29507063>
3. Holmes A, Holmes M, Gottlieb T, Price LB, **Sundsfjord A**. End non-essential use of antimicrobials in livestock. **BMJ** (Editorial) 2018 ; <https://www.ncbi.nlm.nih.gov/pubmed/29378684>

4. Haldorsen B, Giske CG, Hansen DS, Orri Helgason K, Kahlmeter G, Löhr IH, Matuschek E, Österblad M, Rantakokko-Jalava K, Wang M, Småbrekke L, Samuelsen Ø, **Sundsfjord A**; NordicAST CPE Study Group. Performance of the EUCAST disc diffusion method and two MIC methods in detection of Enterobacteriaceae with reduced susceptibility to meropenem: the NordicAST CPE study. **J Antimicrob Chemother** 2018; <https://www.ncbi.nlm.nih.gov/pubmed/30053113>
5. Samuelsen Ø, Overballe-Petersen S, Bjørnholt JV, Brisse S, Doumith M, Woodford N, Hopkins KL, Aasnæs B, Haldorsen B, **Sundsfjord A**; Norwegian Study Group on CPE. Molecular and epidemiological characterization of carbapenemase-producing Enterobacteriaceae in Norway, 2007 to 2014. **PLoS One**. 2017; <https://www.ncbi.nlm.nih.gov/pubmed/29141051>
6. Holmes AH, Moore LS, **Sundsfjord A**, Steinbakk M, Regmi S, Karkey A, Guerin PJ, Piddock LJ. Understanding the mechanisms and drivers of antimicrobial resistance. (Review) **Lancet**. 2016 ;387:176-87. <https://www.ncbi.nlm.nih.gov/pubmed/26603922>
7. Mikalsen T, Pedersen T, Willems R, Coque TM, Werner G, Sadowy E, van Schaik W, Jensen LB, **Sundsfjord A**, Hegstad K. Investigating the mobilome in clinically important lineages of Enterococcus faecium and Enterococcus faecalis. **BMC Genomics**. 2015;16:282-.
8. Hegstad K, Samuelsen Ø, Hegstad J, **Sundsfjord A**. Molecular methods for detection of antibacterial resistance genes: rationale and applications. In: **Antibiotics in Laboratory Medicine**. Wolters Kluwer 2015 ISBN 978-1-4511-7675-9. s. 408-449 (Book chapter)
9. Löhr IH, Hüter N, Bernhoff E, Johnsen PJ, Sundsfjord A, Naseer U. Persistence of a pKPN3-Like CTX-M-15-Encoding IncFIIK Plasmid in a Klebsiella pneumonia ST17 Host during Two Years of Intestinal Colonization. **PLoS One**. 2015 Mar 4;10(3):e0116516.
10. Sundqvist M, Granholm S, Naseer U, Rydén P, Brolund A, **Sundsfjord A**, Kahlmeter G, Johansson A. Within-population distribution of trimethoprim resistance in Escherichia coli before and after a community wide intervention on trimethoprim use. **Antimicrob Agents Chemother**. 2014; 58:7492-500.
11. Löhr IH, Rettedal S, Natås OB, Naseer U, Oymar K, **Sundsfjord A**. Long-term faecal carriage in infants and intra-household transmission of CTX-M-15-producing Klebsiella pneumoniae following a nosocomial outbreak. **J Antimicrob Chemother**. 2013;68:1043-8.
12. Rettedal S, Löhr IH, Natås O, Giske CG, **Sundsfjord A**, Øymar K. First outbreak of extended-spectrum β -lactamase-producing Klebsiella pneumoniae in a Norwegian neonatal intensive care unit; associated with contaminated breast milk and resolved by strict cohorting. **APMIS**. 2012 Aug;120(8):612-21
13. Bengtsson S, Naseer U, **Sundsfjord A**, Kahlmeter G, Sundqvist M. Sequence types and plasmid carriage of uropathogenic Escherichia coli devoid of phenotypically detectable resistance. **J Antimicrob Chemother**. 2012;67(1):69-73
14. Samuelsen O, Toleman MA, Hasseltvedt V, Fuursted K, Leegaard TM, Walsh TR, **Sundsfjord A**, Giske CG. Molecular characterization of VIM-producing Klebsiella pneumoniae from Scandinavia reveals genetic relatedness with international clonal complexes encoding transferable multidrug resistance. **Clin Microbiol Infect**. 2011;1811-
15. Giske CG, Gezelius L, Samuelsen O, Warner M, **Sundsfjord A**, Woodford N. A sensitive and specific phenotypic assay for detection of metallo-beta-lactamases and KPC in Klebsiella pneumoniae with the use of meropenem disks supplemented with aminophenylboronic acid, dipicolinic acid and cloxacillin. **Clin Microbiol Infect**. 2011;17(4):552-
16. Werner G, Freitas AR, Coque TM, Sollid JE, Lester C, Hammerum AM, Garcia-Migura L, Jensen LB, Francia MV, Witte W, Willems RJ, **Sundsfjord A**. Host range of enterococcal vanA plasmids among Gram-positive intestinal bacteria. **J Antimicrob Chemother**. 2011;66(2):273-82.
17. Johnsen PJ, Townsend JP, Bøhn T, Simonsen GS, **Sundsfjord A**, Nielsen KM Factors affecting the reversal of antimicrobial-drug resistance. **Lancet Inf Dis** 2009;9:357-64
18. Dahl KH, Mater DD, Flores MJ, Johnsen PJ, Midtvedt T, Corthier G, **Sundsfjord A**. 2007. Transfer of plasmid and chromosomal glycopeptide resistance determinants occurs more readily in the digestive tract of mice than in vitro and exconjugants can persist stably in vivo in the absence of glycopeptide selection. **J Antimicrob Chemother** 59:478-86.
19. Tofteland S, Haldorsen B, Dahl KH, Simonsen GS, Steinbakk M, Walsh TR, **Sundsfjord A**; Norwegian ESBL Study Group. 2007. Effects of phenotype and genotype on methods for detection of extended-spectrum-beta-lactamase-producing clinical isolates of Escherichia coli and Klebsiella pneumoniae in Norway. **J Clin Microbiol** 45(1):199-205.
20. Johnsen PJ, Østerhus JJ, Sletvold H, Sørum M, Kruse H, Nielsen K, Simonsen GS, **Sundsfjord A**. 2005. Persistence of animal and human glycopeptide resistant enterococci on two Norwegian poultry farms formerly exposed to avoparcin is associated with a widespread plasmid-mediated vanA-element within a polyclonal Enterococcus faecium population. **Appl Environ Microbiol** 2005;71:159-168.