Curriculum vitae

PERSONAL INFORMATION

*Family name, First name: Stokke, Runar

*Nationality: Norwegian

Researcher unique identifier(s) (ORCID, ResearcherID, etc.): ORCID:0000-0002-6056-7119

EDUCATION

2006 PhD. Microbiology: **Dissertation date:** *30.11.2006.*
Department of Biology, University of Bergen, Norway.
Title: Biological adaptations to extreme temperatures.
Main supervisor: Nils-Kåre Birkeland

2003 Cand.Scient/Master in Microbiology
(former) Department of Microbiology, University of Bergen, Norway.
Thesis: Cloning, expression and characterization of recombinant isocitrate dehydrogenase from *Methylococcus capsulatus* and *Thermoplasma acidophilum.*
Main supervisor: Nils-Kåre Birkeland

CURRENT AND PREVIOUS POSITIONS

2017- Current Position
Permanently employed researcher at the Department of Biological Sciences, University of Bergen (UIB), Norway. WP-leader for Biodiscovery and Bioprospecting at the KGJ-Centre for Deep Sea Research at UIB. From 2016-2018, acting WP-leader in the national Biotechnology project NorZymeD and part of the post-project group. In addition, I was a researcher in the EU-funded biotechnology project INMARE from 01.01-05.12.2017.

2013-2016 Researcher at Department of Biology/Centre for Geobiology on the national Biotek2021 project NorZymeD; "Enzyme development for Norwegian biomass - mining Norwegian biodiversity for seizing Norwegian opportunities in the bio-based economy".

2011-2013 Researcher at Centre for Geobiology on the Project Biogoldmine, "Mining of a Norwegian biogoldmine through metagenomics" (NFR-Biotek 2021- RCN208491).

2008-2011 Post.Doc position at Centre for Geobiology within the research program "Roots of Life".

2007-2008 Research Fellow at the Centre for Geobiology. Sulfate metabolism in *Archaeoglobus fulgidus*.

2007 Temporary employed as over engineer (50%) to develop proteomic tools for physiological studies of microorganisms involved in central biogeochemical cycles in extreme environments.

TEACHING AND SUPERVISION OF GRADUATE STUDENTS/RESEARCH FELLOWS

Current PhDs:

2019 - **Victoria Røyseth**, "Functional diversity, energy metabolisms and biochemical properties of proteolytic and amino acid degrading microorganisms living in hydrothermal vent fields (HVF)". (co-supervisor)

2018 - ***Petra Hribovsek*** *(GEO)* – main supervisor. The PhD-position is associated to the KGJ Centre for Deep Sea Research and WP6; Bioprospecting and Biodiscovery.

2018 - **Francesca Vulcano** (BIO) - "Anaerobic alkane oxidation at Loki's castle barite field: microbial physiology at the basis of hydrocarbons cycling". (Co-supervisor).

Former PhDs:

2010-2017 **William Hocking**, "Energy conservation mechanisms in the sulfate respiring archaeon Archaeoglobus fulgidus VC16 - assessed by transcriptome profiling and comparative genomics" (dissertation June 2015, co-supervisor).
Juliane Wissuwa, "The Arctic Mid-Ocean Ridge Vent Fields - A Valuable Resource for Marine Bioprospecting?" (dissertation May 2016, co-supervisor).
Anders Schouw, "Isolation and genome analysis of Vallitalea guaymasensis L81; energy metabolism, syntrophy and applications" (dissertation June 2018, co-supervisor)

Master students:

2020 - **Sondre Olai Spjeld**, will start his Master thesis January 2020 (Main supervisor).

2009-2015 **Sepideh Mostafavi**, Metagenome-based analysis of the functional potential of a marine sediment community dominated by ANME-2c (Graduated 2015, Grade A, co-supervisor).
Sophie Radeke, Diversity, function and interactions of anaerobic methanotrophs in Loki´s Castle Vent Field. (Graduated, 2015, Grade B, co-supervisor).
Carina Magnussen, Genekspresjon av karbonmonoksid dehydrogenase/acethyl-CoA syntase komplekset og sat-ORF2-aprBA operonet i *Archaeoglobus fulgidus* (Graduated 2010, Grade B, co-supervisor).

RESEARCH CRUISE

June/July 2019 16 days research cruise to the Arctic mid-ocean Ridge (AMOR) with the research Wessel G.O SARS.

June/July 2007 10 days research cruise to AMOR with the research Wessel G.O SARS.

Publications per September 2019 (24):

24. Stepnov AA, Fredriksen L, Steen IH, **Stokke R**, Eijsink VGH.
Identification and characterization of a hyperthermophilic GH9 cellulase from the Arctic Mid-Ocean Ridge vent field. PLoS One. 2019 Sep 6;14(9):e0222216. doi: 10.1371/journal.pone.0222216. eCollection 2019.

23. Fredriksen L, **Stokke R**, Jensen MS, Westereng B, Jameson JK, Steen IH, Eijsink VGH.
Discovery of a Thermostable GH10 Xylanase with Broad Substrate Specificity from the Arctic Mid-Ocean Ridge Vent System. *Appl Environ Microbiol.* 2019 Mar 6;85(6).

22. Vuoristo KS, Fredriksen L, Oftebro M, Arntzen MØ, Aarstad OA, **Stokke R**, Steen IH, Hansen LD, Schüller RB, Aachmann FL, Horn SJ, Eijsink VGH.
Production, Characterization, and Application of an Alginate Lyase, AMOR_PL7A, from Hot Vents in the Arctic Mid-Ocean Ridge. *J Agric Food Chem*. 2019 Feb 25

21. Le Moine Bauer S, Sjøberg AG, L'Haridon S, **Stokke R**, Roalkvam I, Steen IH, Dahle H.
Profundibacter amoris gen. nov., sp. nov., a new member of the Roseobacter clade isolated from Loki's Castle Vent Field on the Arctic Mid-Ocean Ridge. *Int J Syst Evol Microbiol.* 2019 Feb 13.

20. Dahle H, Le Moine Bauer S, Baumberger T, **Stokke R**, Pedersen RB, Thorseth IH, Steen I H.
Energy Landscapes in Hydrothermal Chimneys Shape Distributions of Primary Producers. *Front Microbiol*. 2018 Jul 16;9:1570.

19. Schouw A, Vulcano F, Roalkvam I, Hocking WP, Reeves E, **Stokke R**, Bødtker G, Steen IH. Genome Analysis of *Vallitalea guaymasensis* Strain L81 Isolated from a Deep-Sea Hydrothermal vent System. *Microorganisms* 2018 4;6(3).

18. Coscolin, C., Martinez-Martines, M., Chow, J., Bargiela, R., Garcia-Moyano, A., Bjerga, GEK., Bollinger, A., **Stokke, R**., Steen, IH., Golyshina, OV., Yakimov, MM., Jaeger, K-E., Yakunin, AF., Streit, WR., Golyshin, PN., Ferrer, M. Relationship between Substrate Promiscuity and Chiral Selectivity of Esterases from Phylogenetically and Environmentally Diverse Microorganisms. *Catalysts* 2018, 8, 10; doi:10.3390/catal8010010

17. Martínez-Martínez M, Coscolín C, Santiago G, Chow J, Stogios PJ, Bargiela R, Gertler C, Navarro-Fernández J, Bollinger A, Thies S, Méndez-García C, Popovic A, Brown G, Chernikova TN, García-Moyano A, Bjerga GEK, Pérez-García P, Hai T, Del Pozo MV, **Stokke R**, Steen IH, Cui H, Xu X, Nocek BP, Alcaide M, Distaso M, Mesa V, Peláez AI, Sánchez J, Buchholz PCF, Pleiss J, Fernández-Guerra A, Glöckner FO, Golyshina OV, Yakimov MM, Savchenko A, Jaeger KE, Yakunin AF, Streit WR, Golyshin PN, Guallar V, Ferrer M, The Inmare Consortium. Determinants and Prediction of Esterase Substrate Promiscuity Patterns. ACS Chem Biol. 2017 Dec 20. doi: 10.1021/acschembio.7b00996. [Epub ahead of print] PubMed PMID: 29182315.

16. Wissuwa J, Bauer SL, Steen IH, **Stokke R**. Complete genome sequence of Lutibacter profundi LP1(T) isolated from an Arctic deep-sea hydrothermal vent system. Stand Genomic Sci. 2017 Jan 7;12:5. doi: 10.1186/s40793-016-0219-x. eCollection 2017. PubMed PMID: 28078050; PubMed Central PMCID: PMC5219744.

15. Wissuwa J, **Stokke R**, Fedøy AE, Lian K, Smalås AO, Steen IH. Isolation and complete genome sequence of the thermophilic Geobacillus sp. 12AMOR1 from an Arctic deep-sea hydrothermal vent site. Stand Genomic Sci. 2016 Feb 24;11:16. doi: 10.1186/s40793-016-0137-y. eCollection 2016. PubMed PMID: 26913091; PubMed Central PMCID: PMC4765119.

14. Schouw A, Leiknes Eide T, **Stokke R**, Birger Pedersen R, Helene Steen I, Bødtker G. Abyssivirga alkaniphila gen. nov., sp. nov., an alkane-degrading, anaerobic bacterium from a deep-sea hydrothermal vent system, and emended descriptions of Natranaerovirga pectinivora and Natranaerovirga hydrolytica. Int J Syst Evol Microbiol. 2016 Apr;66(4):1724-34. doi: 10.1099/ijsem.0.000934. Epub 2016 Jan 28. PubMed PMID: 26822139.

13. Steen IH, Dahle H, **Stokke R**, Roalkvam I, Daae FL, Rapp HT, Pedersen RB, Thorseth IH. Novel Barite Chimneys at the Loki's Castle Vent Field Shed Light on Key Factors Shaping Microbial Communities and Functions in Hydrothermal Systems. Front Microbiol. 2016 Jan 7;6:1510. doi: 10.3389/fmicb.2015.01510. eCollection 2015. PubMed PMID: 26779165; PubMed Central PMCID: PMC4703759.

12. Roalkvam I, Drønen K, **Stokke R**, Daae FL, Dahle H, Steen IH. Physiological and genomic characterization of Arcobacter anaerophilus IR-1 reveals new metabolic features in Epsilonproteobacteria. Front Microbiol. 2015 Sep 16;6:987. doi: 10.3389/fmicb.2015.00987. eCollection 2015. PubMed PMID: 26441916; PubMed Central PMCID: PMC4584990.

11. Hocking WP, Roalkvam I, Magnussen C, **Stokke R**, Steen IH. Assessment of the Carbon Monoxide Metabolism of the Hyperthermophilic Sulfate-Reducing Archaeon Archaeoglobus fulgidus VC-16 by Comparative Transcriptome Analyses. Archaea. 2015 Aug 6;2015:235384. doi: 10.1155/2015/235384. eCollection 2015. PubMed PMID: 26345487; PubMed Central PMCID: PMC4543118.

10. **Stokke R**, Dahle H, Roalkvam I, Wissuwa J, Daae FL, Tooming-Klunderud A, Thorseth IH, Pedersen RB, Steen IH. Functional interactions among filamentous Epsilonproteobacteria and Bacteroidetes in a deep-sea hydrothermal vent biofilm. Environ Microbiol. 2015 Oct;17(10):4063-77. doi: 10.1111/1462-2920.12970. Epub 2015 Aug 17. PubMed PMID: 26147346.

9. Hocking WP, **Stokke R**, Roalkvam I, Steen IH. Identification of key components in the energy metabolism of the hyperthermophilic sulfate-reducing archaeon Archaeoglobus fulgidus by transcriptome analyses. Front Microbiol. 2014 Mar 11;5:95. doi: 10.3389/fmicb.2014.00095. eCollection 2014. PubMed PMID: 24672515; PubMed Central PMCID: PMC3949148.

8. Urich T, Lanzén A, **Stokke R**, Pedersen RB, Bayer C, Thorseth IH, Schleper C, Steen IH, Ovreas L. Microbial community structure and functioning in marine sediments associated with diffuse hydrothermal venting assessed by integrated meta-omics. Environ Microbiol. 2014 Sep;16(9):2699-710. doi: 10.1111/1462-2920.12283. Epub 2013 Oct 27. PubMed PMID: 24112684.

7. **Stokke R**, Hocking WP, Steinsbu BO, Steen IH. Complete Genome Sequence of the Thermophilic and Facultatively Chemolithoautotrophic Sulfate Reducer Archaeoglobus sulfaticallidus Strain PM70-1T. Genome Announc. 2013 Jul 5;1(4). pii: e00406-13. doi: 10.1128/genomeA.00406-13. PubMed PMID: 23833130; PubMed Central PMCID: PMC3703591.

6. **Stokke R**, Roalkvam I, Lanzen A, Haflidason H, Steen IH. Integrated metagenomic and metaproteomic analyses of an ANME-1-dominated community in marine cold seep sediments. Environ Microbiol. 2012 May;14(5):1333-46. doi: 10.1111/j.1462-2920.2012.02716.x. Epub 2012 Mar 9. PubMed PMID: 22404914.

5. Roalkvam I, Jørgensen SL, Chen Y, **Stokke R**, Dahle H, Hocking WP, Lanzén A, Haflidason H, Steen IH. New insight into stratification of anaerobic methanotrophs in cold seep sediments. FEMS Microbiol Ecol. 2011 Nov;78(2):233-43. doi: 10.1111/j.1574-6941.2011.01153.x. Epub 2011 Jul 14. PubMed PMID: 21676010.

4. **Stokke R**, Karlström M, Yang N, Leiros I, Ladenstein R, Birkeland NK, Steen IH. Thermal stability of isocitrate dehydrogenase from Archaeoglobus fulgidus studied by crystal structure analysis and engineering of chimers. Extremophiles. 2007 May;11(3):481-93. Epub 2007 Mar 31. PubMed PMID: 17401542.

3. **Stokke R**, Madern D, Fedøy AE, Karlsen S, Birkeland NK, Steen IH. Biochemical characterization of isocitrate dehydrogenase from Methylococcus capsulatus reveals a unique NAD+-dependent homotetrameric enzyme. Arch Microbiol. 2007 May;187(5):361-70. Epub 2006 Dec 12. PubMed PMID: 17160675.

2. **Stokke R,** Birkeland NK, Steen IH. Thermal stability and biochemical properties of isocitrate dehydrogenase from the thermoacidophilic archaeon Thermoplasma acidophilum. Extremophiles. 2007 Mar;11(2):397-402. Epub 2006 Nov 23. PubMed PMID: 17123127.

1. Karlström M, **Stokke R**, Steen IH, Birkeland NK, Ladenstein R. Isocitrate dehydrogenase from the hyperthermophile Aeropyrum pernix: X-ray structure analysis of a ternary enzyme-substrate complex and thermal stability. J Mol Biol. 2005 Jan 21;345(3):559-77. PubMed PMID: 15581899.