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Professor of Microalgae and Microbiome Engineering
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**EXPERTISE**

Chemical engineer specializing in genome-enabled systems & synthetic biology of microbes and microbial communities. Applications are at the intersection of fundamental and applied science relating to the fields of bioprocess engineering, biodesign, microbial ecology, and molecular systems biology.

PROFESSIONAL EXPERIENCE

- 2021-pres. **Professor and Research Group Leader**, Microalgae & Microbiomes Research Group, Norwegian College of Fishery Science, Arctic Centre for Sustainable Energy – UiT - The Arctic University of Norway, Tromsø, Norway
- 2018-2021 **Associate Professor and Research Group Leader**, Microalgae & Microbiomes Research Group, Norwegian College of Fishery Science, Arctic Centre for Sustainable Energy – UiT - The Arctic University of Norway, Tromsø, Norway
- 2016-2018 **Senior Staff Scientist**, Biological Sciences Division, Microbiome Sciences Group, Pacific Northwest National Laboratory, Richland, WA, USA
- 2015-2018 **Adjunct Professor**, Voiland School of Chemical and Biological Engineering, Washington State University, Pullman, WA, USA
- 2013-2016 **Linus Pauling Distinguished Postdoctoral Fellow**, Pacific Northwest National Laboratory, Richland, WA, USA
- 2012 **Research Intern**, Pacific Northwest National Laboratory, Richland, WA, USA
- 2007-2013 **Doctoral Candidate and Research Associate**, U.S. National Science Foundation IGERT-fellowship, Montana State University, Bozeman, MT, USA
- 2003-2007 **Research Associate**, Center for Biofilm Engineering, Montana State University, Bozeman, MT, USA

EDUCATION & TRAINING

- 2013 Linus Pauling Distinguished Postdoctoral Fellowship, Pacific Northwest National Laboratory, Richland, WA, USA
- 2013 Ph.D. Chemical Engineering, Montana State University, Bozeman, MT, USA
- 2007 B.S. Chemical and Biological Engineering, Montana State University, Bozeman, MT, USA

AWARDED RESEARCH FUNDING & SUPPORT

- 2021-2024 The Norwegian Research Council. AlgScaleUp – Scaleup of the production of microalgae as a sustainable salmon feed raw material for the salmon industry. Knowledge-building Project for Green platform (40 M NOK); **Work Package Leader in Microalgae-Bacterial Interactions**
- 2021-2024 UiT- The Arctic University of Norway Strategic Research Funds (29 M NOK); “ABSORB – Arctic Carbon Storage with Biomes.” **Principle Investigator**

2018-2020	UiT- The Arctic University of Norway Strategic Research Funds for ARC - The Arctic Centre for Sustainable Energy (250 K NOK); “Gaining genomic insight into Arctic microalgae carbon capture technologies.” Principle Investigator
2017-2020	U.S. Department of Energy, Office of Science, Biological and Environmental Research, Genomic Science Program; Scientific Focus Area (Funded at \$7.5 M USD); “Phenotypic Response of the Soil Microbiome to Environmental Perturbations.” Key Staff Member and Task Lead for Building Model Microbial Consortia under PI: Janet Jansson and Co-PI: Kirsten Hofmockel
2016-2018	U.S. Department of Energy, Office of Science, Biological and Environmental Research, Genomic Science Program; Scientific Focus Area (Funded at \$4.31 M USD); “MOSAIC: Metabolic and Spatial Interactions in Communities.” Key Staff Member and Synthetic Biology Task Lead under PI: Charlette Geffen and Co-PI: Jim Fredrickson
2016-2018	U.S. Department of Energy, Office of Science user facility, Environmental Molecular Science Laboratory; EMSL Science Theme Award (Funded at \$125 K USD equivalent instrument hours); “Metabolic Flux Coupling in Microbial Consortia: Demystifying Metabolic Exchanges across Species.” Principal Investigator
2016-2018	Laboratory Directed Research and Development (LDRD); Microbiomes in Transition Initiative (Funded at \$400 K USD); “Probiotics and secondary bile acids as regulators of the gut microbe interactome.” Principal Investigator
2016-2018	Laboratory Directed Research and Development (LDRD); National Security Seed Funding Initiative (Funded at \$400 K USD); “Retro-fitting non-traditional microbes with state-of-the-art synthetic biology tools: Towards the next generation of engineered microbial biosensors.” Principal Investigator
2016-2018	Laboratory Directed Research and Development (LDRD); Energy and Environment Seed Funding Initiative (Funded at \$400 K USD); “Filling the gaps: midscale research at the coastal interface.” Key Staff Member under PI: George Bonheyo
2013-2016	Laboratory Directed Research and Development (LDRD) award (Funded at \$832.5 K USD); “Exploring and engineering phototrophic-heterotrophic partnerships.” Principal Investigator

PUBLICATIONS (h-index = 22; orcid.org/0000-0003-2913-7708)

Google Scholar: <https://scholar.google.com/citations?user=MZpM2nsAAAAJ&hl=en&oi=ao>

1. Chan, D.T.C., Baldwin, G.S., **Bernstein, H.C.*** (2023). Revealing the host-dependent nature of an engineered genetic inverter in concordance with physiology. *BioDesign Research*. <https://doi.org/10.34133/bdr.0016>
2. Moran, J.J.*, **Bernstein, H.C.**, Mobberley, J.M., Thompson, A.M., Kim, Y.M., Dana, K.L., Cory, A.B., Courtney, S., Renslow, R.S., Fredrickson, J.K., Kreuzer, H.W., Lipton, M.S. (2023). Daylight-driven carbon exchange through a vertically structured microbial community. *Frontiers in Microbiology*. <https://doi.org/10.3389/fmicb.2023.1139213>
3. Aalto, N.J., Schweizer, H., Grann-Meyer, E., Krsmanovic, S., Svenning, J.B., Dalheim, L., Petters, S., Ingebrigtsen, R., Hulatt, C.J., **Bernstein, H.C.*** (2023). Microbial community dynamics during a harmful *Chrysochromulina* leadbeateri bloom. *Applied and Environmental Microbiology*. <https://doi.org/10.1128/aem.01895-22>
4. Aalto, N.J., Schweitzer, H.D., Krsmanovic, S., Campbell, K., **Bernstein, H.C.*** (2022). Diversity and selection of surface marine microbiomes in the Atlantic-Influenced Arctic. *Frontiers in Microbiology*. <https://doi.org/10.3389/fmicb.2022.892634>
5. Lima, S., Lokesh, J., Schulze, P.S.C., Wijffels, R.H., Viswanath, K., Scargiali, F., Petters, S., **Bernstein, H.C.**, Morales-Sanchez, D.,* (2022). Flashing lights affect the photophysiology and expression of carotenoid and lipid synthesis genes in *Nannochloropsis gaditana*. *Journal of Biorechnology*. <https://doi.org/10.1016/j.jbiotec.2022.11.012>

6. Beck, A.E., Pintar, K., Schepens, D., Schrammeck, A., Johnson, T., Bleem, A., Du, M., Harcombe, W.R., **Bernstein, H.C.**, Heys, J.J., Gedeon, T., Carlson, R.P.* (2022). Environment constrains fitness advantages of division of labor in microbial consortia engineered for metabolite push or pull interactions. *mSystems*. <https://doi.org/10.1128/msystems.00051-22>
7. Phalak, P., **Bernstein, H.C.**, Lindemann, S.R., Renslow, R.S., Thomas, D.G., Henson, M.A., Song, H-S.* (2022). Spatiotemporal Metabolic Network Models Reveal Complex Autotroph-Heterotroph Interactions and Their Coexistence Governed by Photon Incidences. *IFAC-PapersOnLine*. <https://doi.org/10.1016/j.ifacol.2022.07.430>
8. Aalto, N.J., Campbell, K., Eilertsen, H.C., **Bernstein, H.C.*** (2021). Drivers of atmospheric-ocean CO₂ flux in northern Norwegian fjords. *Frontiers in Marine Science*. <https://doi.org/10.3389/fmars.2021.692093>
9. Schweitzer, H.D., Aalto, N.J., Busch, W., Chan, D.T.C., Chiesa, M., Elvevoll, E.O., Gerlach, R., Krause, K., Mocaer, K., Moran, J.J., Noel, J.P., Patil, S.K., Schwab, Y., Wijffels, R.H., Wulff, A., Øvreås, L., **Bernstein, H.C.*** (2021). Innovating carbon capture biotechnologies through ecosystem inspired solutions. *One Earth*. <https://doi.org/10.1016/j.oneear.2020.12.006>
10. Khan, N., Yeung, E., Farris, Y., Fansler, S.J., **Bernstein, H.C.*** (2020). A broad-host-range event detector: expanding and quantifying performance between *Escherichia coli* and *Pseudomonas* species. *Synthetic Biology*. <https://doi.org/10.1093/synbio/ysaa002>
11. Kessell, A.K., McCullough, H.C., Auchtung, J.M., **Bernstein, H.C.**, Song, H-S.* (2020). Predictive interactome modelling for precision microbiome engineering. *Current Opinion in Chemical Engineering*. <https://doi.org/10.1016/j.coche.2020.08.003>
12. Lee, J-Y, Haruta, S., Kato, S., **Bernstein, H.C.**, Lindemann, S.R., Lee, D-Y., Fredrickson, J.K., Song, H-S.* (2020). Prediction of Neighbor-dependent Microbial Interactions from Limited Population Data. *Frontiers in Microbiology*. <https://doi.org/10.3389/fmicb.2019.03049>
13. Zupanec, A., **Bernstein, H.C.**, Heiland, I.* (2020). Systems biology – Current status and challenges. *Cellular and Molecular Life Sciences*. <https://doi.org/10.1007/s00018-019-03410-z>
14. **Bernstein, H.C.*** (2019). Reconciling engineering and ecological design principles for building microbiomes. *mSystems*. <https://msystems.asm.org/content/4/3/e00106-19>
15. Zengler, K., Hofmockel, K., Baliga, N.S., Behie, S.W., **Bernstein, H.C.**, Brown, J.B., Dinney, J.R., Folge, S.A., Forry, S.P., Hess, M., Jackson, S.A., Jansson, C., Lindemann, S.R., Pett-Ridge, J., Maranas, C., Venturelli, O.S., Wallenstein, M.D., Shank, E.A., Northen, T.R.* (2019) EcoFABS: advancing microbiome science through standardized fabricated ecosystems. *Nature Methods*. 16, pages567–571. <https://doi.org/10.1038/s41592-019-0465-0>
16. Zegeye, E.K., Brislawn, J.C., Farris, Y., Fansler, S.J., Hofmockel, K.S., Jansson, J.K., Wright, A.T., Graham, E.B., Naylor, D., McClure, R.S.* , **Bernstein, H.C.*** (2019). Selection, succession and stabilization of soil microbial consortia. *mSystems*. <https://msystems.asm.org/content/4/4/e00055-19>
17. Song, H-S.*, Lee, J-Y, Haruta, S., Nelson, W.C., Lee, D-Y., Lindemann, S.R., Fredrickson, J.K., **Bernstein, H.C.** (2019). Minimal Interspecies Interaction Adjustment (MIIA): inference of member-dependent interactions in microbiomes. *Frontiers in Microbiology*. <https://doi.org/10.3389/fmicb.2019.01264>
18. Brislawn, J.C., Graham, E.B., Dana, K., Ihardt, P., Fansler, S.J., Chrisler, W.B., Cliff, J.B., Stegen, J.C., Moran, J.J.* , **Bernstein, H.C.*** (2019). Forfeiting the priority effect: turnover defines biofilm community succession. *The ISME Journal*. <https://doi.org/10.1038/s41396-019-0396-x>
19. Linn, V.S., Volk, R.F., DeLeon, A.J., Anderson, L.N., Purvine, S.O., Shukla, A.K., **Bernstein, H.C.**, Smith, J.N., Wright, A.T.* (2019). Structure dependent determination of organophosphate targets in mammalian tissues using activity-based protein profiling. *Chemical Research in Toxicology*. <https://doi.org/10.1021/acs.chemrestox.9b00344>
20. McClure, R.S., Overall, C.C., Charania, M., Hill, E.A., **Bernstein, H.C.**, McDermott, J.E., Beliaev, A.S.* (2018). Species-specific transcriptomic network inference of interspecies

interactions in microbial communities. *The ISME Journal*. <https://doi.org/10.1038/s41396-018-0145-6>

21. Khan, N., Maezato, Y., McClure, R.S., Brislawn, C.J., Mobberley, J.M., Isern, N., Chrisler, W.B., Markille, L.M., Barney, B.M., Song, H-S., Nelson, W.C., **Bernstein, H.C.*** (2018). Phenotypic responses to interspecies competition and commensalism in a naturally-derived microbial co-culture. *Scientific Reports*, 8, 297. DOI: 10.1038/s41598-017-18630-1. <https://www.nature.com/articles/s41598-017-18630-1>
22. Song, H-S., Lee, J-Y., Nelson, W.C., Taylor, R.C., Henry, C.S., Beliaev, A.S., Ramkrishna, D., **Bernstein, H.C.** (2018). Metabolic network modeling for computer-aided design of microbial interactions. *Emerging Areas in Bioengineering. Wiley Biotechnology Series*. DOI: 10.1002/9783527803293.ch45. <http://onlinelibrary.wiley.com/doi/10.1002/9783527803293.ch45/summary>
23. **Bernstein, H.C.***, Brislawn, C., Dana, K., Flores-Wentz, T., Cory, A.B., Fansler, S.J., Fredrickson, J.K., Moran, J.J. (2017). Primary and heterotrophic productivity relate to multi-kingdom diversity in a hypersaline mat. *FEMS Microbial Ecology*, DOI: 10.1093/femsec/fix12. <https://academic.oup.com/femsec/article/4555378>
24. **Bernstein, H.C.***, McClure, R.S., Thiel, V., Sadler, N.C., Kim, Y-M., Chrisler, W.B., Hill, E.A., Bryant, D.A., Romine, M.F., Jansson, J.K., Fredrickson, J.K., Beliaev, A.S. (2017). Indirect interspecies regulation; transcriptional and physiological responses of a cyanobacterium to heterotrophic partnership. *mSystems*. DOI: 10.1128/mSystems.00181-16. <http://msystems.asm.org/content/2/2/e00181-16>
25. Hill, E.A., Chrisler, W.B., Beliaev, A.S., **Bernstein, H.C.*** (2017). A flexible co-culture platform for simultaneous utilization of methane and carbon dioxide from gas feedstocks. *Bioresource Technology*. <https://doi.org/10.1016/j.biortech.2016.12.111>
26. Beck, A.E., **Bernstein, H.C.**, Carlson, R. P.* (2017). Stoichiometric network analysis of cyanobacterial acclimation to photosynthesis-associated stresses identifies heterotrophic niches. *Processes*. DOI: 10.3390/pr5020032. <http://www.mdpi.com/2227-9717/5/2/32>
27. Mobberley, J.M., Lindemann, S.R., **Bernstein, H.C.**, Moran, J.J., Renslow, R.S., Hu, D., Babauta, J., Beyenal, H., Nelson, W.C.* (2017). Organismal, metabolic, and chemical microgradients reveal partitioning of energy and biogeochemical cycling within a hypersaline microbial mat system. *FEMS Microbial Ecology*. DOI: 10.1093/femsec/fix028. <https://academic.oup.com/femsec/article/3071443/Organismal-and-spatial-partitioning-of-energy-and>
28. **Bernstein, H.C.***, Brislawn, C., Renslow, R.S., Dana, K., Morton, B., Lindemann, S.R., Song, H-S., Atci, E., Beyenal, H., Fredrickson, J.K., Jansson, J.K., Moran, J.J.* (2016). Trade-offs between microbiome diversity and productivity in a stratified microbial mat. *The ISME Journal*. <https://doi.org/10.1038/ismej.2016.133>
29. **Bernstein, H.C.***, McClure, R.S., Hill, E.A., Markillie, L., Chrisler, W.A., Romine, M., A., Posewitz, M.A., Bryant, D.A., Konopka, A.E., Fredrickson, J.K., Beliaev, A.S.* (2016). Unlocking the constraints of cyanobacterial productivity: acclimations enabling ultra-fast growth. *mBio*, 7(4), e00949-16. DOI: 10.1128/mBio.00949-16. <http://mbio.asm.org/content/7/4/e00949-16.short>
30. Sadler, N.C., **Bernstein, H.C.**, Melnicki, M.R., Charania, M.A., Hill, E.A., Anderson, L.N., Monroe, M.E., Smith, R.D., Beliaev, A.S., Wright, A.T.* (2016). Dinitrogenase driven photobiological hydrogen production alleviates oxidative stress. *Applied and Environmental Microbiology*, DOI: 10.1128/AEM.02098-16. <http://aem.asm.org/content/early/2016/10/10/AEM.02098-16.abstract>
31. Henry, C.S., **Bernstein, H.C.**, Weisenhorn, P., Taylor, R.C., Lee, J-Y., Zucker, J., Song, H-S.* (2016). Microbial community metabolic modeling: a community data-driven network reconstruction. *Journal of Cellular Physiology*. (COVER ARTICLE). <https://doi.org/10.1002/jcp.25428>

32. Lindemann, S.R., **Bernstein, H.C.**, Song, H-S., Fredrickson, J.K., Fields, M.W., Shou, W., Johnson, D., Beliaev, A.S.* (2016). Engineering microbial consortia for controllable outputs. *The ISME Journal*. <https://doi.org/10.1038/ismej.2016.26>
33. Beam, J.P., **Bernstein, H.C.**, Jay, Z., Kozubal, M.A., Jennings, R., Tringe, S.G., Inskeep, W.P.* (2016). Assembly and succession of iron oxide microbial mat communities in acidic geothermal springs. *Frontiers in Microbiology*, 7. DOI: 10.3389/fmicb.2016.00025. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4753309/>
34. James, G.A., Zhao, A.G., Usui, M., Underwood, R.A., Nguyen, H.D., Beyenal, H., Pulcini, E., Agostinho, A., **Bernstein, H.C.**, et al., Stewart, P.S.* (2016). Microsensor and transcriptomic signatures of oxygen depletion in biofilms associated with chronic wounds. *Wound Repair and Regeneration*. DOI: 10.1111/wrr.12401. <http://onlinelibrary.wiley.com/doi/10.1111/wrr.12401/abstract>
35. Beck, A., Hunt, K., **Bernstein, H.C.**, Carlson, R.P.* (2016). Interpreting and designing microbial communities for bioprocess applications; from components to interactions to emergent properties. *Biotechnologies for Biofuel Production and Optimization*. DOI: 10.1016/B978-0-444-63475-7.00015-7. <http://www.sciencedirect.com/science/article/pii/B9780444634757000157>
36. **Bernstein, H.C.***, Charania, M., McClure, R.S., Sadler, N., Melnicki, M., Hill, E.A., Markillie, L. M., Nicora, C., Wright, A., Romine, M., A., Beliaev, A.S.* (2015). Multi-omic dynamics associate oxygenic photosynthesis with nitrogenase-mediated H₂ production in *Cyanothece* sp. ATCC 51142. *Scientific Reports*, 5. DOI: 10.1038/srep16004. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4630603/>
37. Song, H-S.*, McClure, R.S., **Bernstein, H.C.**, Overall, C.C., Hill, E.A., Beliaev, A.S., (2015). Integrated in silico analyses of the regulatory and metabolic networks of *Synechococcus* sp. PCC 7002 reveal relationships between gene centrality and essentiality. *Life*, 5(2), 1127-1140. DOI: 10.3390/life5021127. <http://www.mdpi.com/2075-1729/5/2/1127/html>
38. **Bernstein, H.C.**, Konopka, A., Melnicki, M.R., Hill, E.A., Kucek, L.A., Zhang, S., Shen, G., Bryant, D.A., Beliaev, A.S.* (2014). Effect of mono- and dichromatic light quality on growth rates and photosynthetic performance of *Synechococcus* sp. PCC 7002. *Frontiers in Microbiology*, 5, 488. DOI: 10.3389/fmicb.2014.00488. <http://journal.frontiersin.org/article/10.3389/fmicb.2014.00488/full>
39. Moran, J.J.*, Doll, C.G., **Bernstein, H.C.**, Renslow, R.S., Cory, A.B., Hutchison, J.R., Lindemann, S.R., Fredrickson, J.K. (2014). Spatially tracking ¹³C labeled substrate (bicarbonate) accumulation in microbial communities using laser ablation isotope ratio mass spectrometry. *Environmental Microbiology Reports*, 6(6), 786-791. DOI: 10.1111/1758-2229.12211. <http://onlinelibrary.wiley.com/doi/10.1111/1758-2229.12211/abstract>
40. **Bernstein, H.C.**, Carlson, R.P.* (2014). Design, construction and characterization methods for synthetic microbial consortia. *Engineering Multi-Cellular Systems; Methods and Protocols, Methods in Molecular Biology*, 49-68. DOI: 10.1007/978-1-4939-0554-6_4. http://link.springer.com/protocol/10.1007/978-1-4939-0554-6_4
41. Beliaev, A.S.*, Romine, M.F., Serres, M., **Bernstein, H.C.**, Linggi, B.E., Markillie, L.M., Isern, N.G., Chrisler, W.B., Kucek, L.A., Hill, E.A., Pinchuk, G.E., Bryant, D.A., Wiley, S.H., Fredrickson, J.K., Konopka, A., (2014). Inference of interactions in cyanobacterial-heterotrophic co-cultures via transcriptome sequencing. *The ISME Journal*, 8(11), 2243-2255. DOI: 10.1038/ismej.2014.69. <http://www.nature.com/ismej/journal/v8/n11/abs/ismej201469a.html>
42. **Bernstein, H.C.**, Kesaano, M., Moll, K., Smith, T., Gerlach, R., Carlson, R.P., Miller, C.D., Peyton, B.M., Cooksey, K.E., Gardner, R.D.*, Sims, R. C.* (2014). Direct measurement and characterization of active photosynthesis zones inside wastewater remediating and biofuel producing microalgal biofilms. *Bioresource Technology*, 156, 206-215. <https://doi.org/10.1016/j.biortech.2014.01.001>

43. **Bernstein, H.C.**, Beam, J.P., Kozubal, M.A., Carlson, R.P., & Inskeep, W. P.* (2013). In situ analysis of oxygen consumption and diffusive transport in high-temperature acidic iron-oxide microbial mats. *Environmental Microbiology*, 15(8), 2360-2370. DOI: 10.1111/1462-2920.12109. <http://onlinelibrary.wiley.com/doi/10.1111/1462-2920.12109/full>
44. DePas, W.H., Hufnagel, D.A., Lee, J.S., Blanco, L.P., **Bernstein, H.C.**, Fisher, S.T., James, G.A., Stewart, P.S. Chapman, M. R.* (2013). Iron induces bimodal population development by *Escherichia coli*. *Proceedings of the National Academy of Sciences USA*, 110(7), 2629-2634. <https://doi.org/10.1073/pnas.1218703110>
45. Bhardwaj, C., Cui, Y., Hofstetter, T., Liu, S. Y., **Bernstein, H. C.**, Carlson, R. P., ... & Hanley, L.* (2013). Differentiation of microbial species and strains in coculture biofilms by multivariate analysis of laser desorption postionization mass spectra. *Analyst*, 138(22), 6844-6851. DOI: 10.1039/C3AN01389H. <http://pubs.rsc.org/is/content/articlehtml/2013/an/c3an01389h>
46. **Bernstein, H.C.**, Carlson, R.P.* (2012). Microbial Consortia Engineering for Cellular Factories: in vitro to in silico systems. *Computational and Structural Biotechnology Journal*, 3(4), 1-8. DOI: 10.5936/csbj.201210017. <http://www.sciencedirect.com/science/article/pii/S2001037014600738>
47. Bhardwaj, C., Moore, J. F., Cui, Y., Gasper, G.L., **Bernstein, H.C.**, Carlson, R. P., & Hanley, L.* (2012). Laser desorption VUV postionization MS imaging of a cocultured biofilm. *Analytical and bioanalytical chemistry*, 405(22), 6969-6977. DOI: 10.1007/s00216-012-6454-0. <http://link.springer.com/article/10.1007/s00216-012-6454-0>
48. **Bernstein, H.C.**, Paulson, S. D., Carlson, R. P.* (2012). Synthetic *Escherichia coli* consortia engineered for syntrophy demonstrate enhanced biomass productivity. *Journal of Biotechnology*, 157(1), 159-166. DOI: 10.1016/j.jbiotec.2011.10.001. <http://www.sciencedirect.com/science/article/pii/S0168165611006067>
49. Zuroff, T., **Bernstein, H.**, Lloyd-Randolfi, J., Jimenez-Taracido, L., Stewart, P., Carlson, R.P.* (2010). Robustness analysis of culturing perturbations on *Escherichia coli* colony biofilm beta-lactam and aminoglycoside antibiotic tolerance. *BMC Microbiology*, 10(1), 185. DOI: 10.1186/1471-2190-10-185. <http://bmcmicrobiol.biomedcentral.com/articles/10.1186/1471-2190-10-185>

PUBLICATIONS IN-PRESS, PEER REVIEW AND/OR PREPRINT

1. Sert, M.F.*, de Grot, T.R., Kekäläinen, T., Jänis, J., Schweitzer, H., **Bernstein, H.C.**, Ferré, B., Gründger, F., Niemann, H. (In-review). Elevated methane alters dissolved organic matter composition in the Arctic Ocean cold seeps. *Frontiers in Marine Science*. <https://osf.io/5e36j/>
2. Dautel, S., Khan, N., Brandvold, K.R., Brislawn, C.J., Hutchison, J., Weitz, K.W., Heyman, H.M., Song, H-S., Ihan, Z.E., Hill, E.A., Hansen, J.R., Zheng, X., Baker, E.S., Cort, J.R., Kim, Y-M., Isern, N.G., DiBaise, J.K., Krajmalnik-Brown, R., Jansson, J.K., Wright, A.T., Metz, T.O., **Bernstein, H.C.*** (2019). *Lactobacillus acidophilus* disrupts collaborative multispecies bile acid metabolism. Pre-print: <https://www.biorxiv.org/content/early/2018/04/11/296020.2>

REGISTERED PATENT

1. Beliaev, A.S., McClure, R.S., **Bernstein, H.C.**, Lindemann, S.R., Jansson, G.C. (2016). Microbial consortia for programmable output via photoautotroph-heterotroph interactions. *US Patent App. 14/991,263*, 2016. <https://www.google.com/patents/US20160201026>

SELECTED OPEN-SCIENCE REPOSITORIES (data and code)

1. Chan, D., **Bernstein, H.C.** (2023). Open Science Framework (OSF). Chan.Interspecies.Inverter.Circuit. <https://osf.io/jnkrx/>
2. **Bernstein, H.C.**, Sert, M.F. (2023). Open Science Framework (OSF). Elevated methane alters dissolved organic matter composition in the Arctic Ocean cold seeps. <https://osf.io/5e36j/>

3. Deppe, L., **Bernstein, H.C.** (2023). Open Science Framework (OSF). Broad-Host-Range Genetic tools for Observing Microbial Consortia. DOI 10.17605/OSF.IO/H7NDK. <https://osf.io/h7ndk/>
4. Verusevski, V., **Bernstein, H.C.** (2022). Open Science Framework (OSF). Modelling the “microbial chassis effect” on the performance of a genetic switch. <https://osf.io/39j5f/>
5. **Bernstein, H.C.**, Aalto, N.J., (2022). Open Science Framework (OSF). Diversity and selection of surface marine microbiomes in the Atlantic-influenced Arctic. DOI 10.17605/OSF.IO/G8WXC. <https://osf.io/g8wxc/>
6. Aalto, N.J., **Bernstein, H.C.** (2022). Open Science Framework (OSF). Ecology of the Norwegian harmful algae bloom of 2019. DOI 10.17605/OSF.IO/4WJHP. <https://osf.io/4wjhp/>
7. **Bernstein, H.C.**, Aalto, N.J., (2021). Open Science Framework (OSF). Northern Norwegian Fjord CO2 Flux. DOI: 10.17605/OSF.IO/TBZSE. <https://osf.io/tbzse/>
8. **Bernstein, H.C.**, (2019). Open Science Framework (OSF). Introduction to Qbio concepts using R. <https://osf.io/48yuh/>
9. Brislawn, C.J., **Bernstein, H.C.**, (2019). Open Science Framework (OSF). Zegeye – NAG consortia. DOI: 10.17605/OSF.IO/6D5KZ. <https://osf.io/6d5kz/>
10. **Bernstein, H.C.** (2018). Open Science Framework (OSF). A broad-host-range event detector: data and models. DOI: 10.17605/OSF.IO/J295C. <https://osf.io/j295c/>
11. Mitchell, H., **Bernstein, H.C.**, Brislawn, J.B., (2018). Open Science Framework (OSF). Bernstein_Rhizosphere_transcriptomes. <https://osf.io/b4qcj/>
12. Brislawn, J.B., Mitchell, H., **Bernstein, H.C.**, (2018). Open Science Framework (OSF). bernstein_root_transcriptomes. <https://osf.io/kcvrn/>
13. Brislawn, J.B., Mitchell, H., **Bernstein, H.C.**, (2018). Open Science Framework (OSF). Bernstein Brachy umbrella project. <https://osf.io/hfc5a/>
14. Brislawn, J.B., **Bernstein, H.C.**, (2018). Open Science Framework (OSF). Brachy_hans_colin. <https://osf.io/hn3ck/>
15. Brislawn, J.B., **Bernstein, H.C.**, (2018). Open Science Framework (OSF). diatom_hans_colin. <https://osf.io/tju2v/>
16. Brislawn, C., **Bernstein H.C.**, (2017). Github. Heterotrophic and primary productivity influences on multi-kingdom diversity in a hypersaline mat microbiome. <https://github.com/pnnl/bernstein-2017-productivity-and-diversity-2/>
17. Brislawn, C., **Bernstein, H.C.**, (2016). Github. Trade-offs between microbiome diversity and productivity in a stratified microbial mat. <https://github.com/pnnl/bernstein-2016-productivity-and-diversity>

SELECTED TEACHING

- | | |
|--------------|---|
| 2023 | Co-instructor: EUGLOH - Carbon Capture Sequestration and Utilization. (June 2023). Universit  Paris-Saclay. <i>Provided an introductory understanding of the carbon cycle and its importance in mitigating climate change aimed at physics undergraduates.</i> https://www.eugloh.eu/events/carbon-cycle-carbon-capture |
| 2023 | Lecturer: Arctic Microbiology (AB327/827) – Marine Microbiology Section. UNIS – The University Centre in Svalbard. https://www.unis.no/courses/ab-327-arctic-microbiology/ |
| 2022 | Co-instructor: BuildMoNa (2022-T5) – Manipulation, understanding and application of microbial consortia. Universit t Leipzig. <i>Provided an overview of biochemistry, biophysics and molecular biology to understand and manipulate microbial cells within communities.</i> https://www.buildmona.de/training/modules/2022-T5/ |
| 2019 | Certified for Basic Pedagogic Competence and Supervisions. This is in accordance with the Norwegian national standard for professional quality teaching at the university level. |
| 2019-current | Instructor and course designer: <i>Quantitative Microbial Biotechnology (Bio-3615/8606)</i> ; Fall term, College of Fisheries Sciences, Faculty of Biosciences, Fisheries |

- and Economics, UiT, Tromsø, Norway. *This course has been designed to teach graduate-level students quantitative principles of microbial cultivation, systems biology, bioprocess engineering and contemporary synthetic biology.*
- 2018 **Co-Instructor:** *Basic and Applied Microalgae (Bio-3614/8606);* Fall term, College of Fisheries Sciences, Faculty of Biosciences, Fisheries and Economics, UiT, Tromsø, Norway. *This course was designed to teach graduate-level students pursuing degrees in Marine Biotechnology basic taxonomy, physiology, ecology and bioprocess-engineering applications associated with microalgae.*
- 2018 **Instructor and course designer:** *Metabolic Engineering;* fall semester BIO ENG 455/CHE 474 at The Voiland School of Chemical and Biological Engineering, Washington State University, Pullman, WA, USA. *This course was designed to teach senior-level undergraduate students the basic mathematical principals of systems biology and modern practices/applications in metabolic engineering.*
- 2011-2012 **Teaching assistant:** *Bioprocess Engineering;* under Professor Ross Carlson for multiple semesters of EBIO 438 at The Department of Chemical and Biological Engineering, Montana State University, Bozeman, MT, USA. *This course was designed to teach junior-level undergraduate students how to apply basic mass and energy balances to design and evaluate unit operations common to bioprocess including bioreactors, fermentation, and separations.*

AWARDS & HONORS

- 2013-2016 **Linus Pauling Distinguished Postdoctoral Fellowship Award**, Pacific Northwest National Laboratory operated by Battelle, Richland, WA, USA.
<http://www.pnl.gov/pauling/>
- 2010-2013 **National Science Foundation Integrated Graduate Education and Research Traineeship (NSF-IGERT PhD Fellowship)** in Geobiological Systems, Montana State University, Bozeman, MT, USA. <http://www.igertmsu.montana.edu/>
- 2012 **International Society for Microbial Ecology Student Poster Award**, Copenhagen, Denmark, 14th ISME Symposium
- 2007 **Undergraduate Research Scholarship**, Center for Biofilm Engineering, Montana State University, Bozeman, MT, USA

RESEARCH HIGHLIGHTS & NEWS

- **Innovating new biotechnologies for carbon capture: Follow-up on the first UArctic Seminar.** UArctic News. September 14th, 2023. <https://www.uarctic.org/news/2023/9/innovating-new-biotechnologies-for-carbon-capture/>
- **UiT is helping to push the exciting field of systems biology.** Faculty of Biosciences, Fisheries and Economics News. December 3, 2019. https://uit.no/om/enhet/aktuelt/nyhet?p_document_id=657396&p_dimension_id=88163
- **Chitin- and N-Acetylglucosamine-Derived Soil Consortia. VIDEO.** American Society for Microbiology. August 13, 2019. Presented by former PhD student mentee. <https://www.youtube.com/watch?v=L-j5bOCScSU&feature=youtu.be>
- **Scientists take on greenhouse gas challenge.** Climate News Network, May 2017, <http://climatenewsnetwork.net/scientists-greenhouse-gas-challenge/>
- **Mind Blow #112. VIDEO.** Vsauce2, April 2017, <https://www.youtube.com/watch?v=PXdsZb5oqA&feature=youtu.be&t=4m11s>
- **Living Green: PNNL converting methane into a usable source of fuel. VIDEO.** NBC Right Now, KNDU-Washington, April 2017, <http://www.nbcrightnow.com/story/35247740/living-green-pnnl-converting-methane-into-a-usable-source-of-fuel>

- ***From Moo to Goo: Methane to Alternative Fuel Source at PNNL.*** Cleantech Concepts, April 2017, <http://www.cleantechconcepts.com/2017/04/from-moo-to-goo-methane-to-alternative-fuel-source-at-pnnl/>
- ***Methane to Biomass – or Moo to Goo. VIDEO.*** PNNL.gov/YouTube., April 2017, <https://www.youtube.com/watch?v=KAMaQkrPD64&feature=youtu.be>
- ***The Cows of America Have a Renewable Energy Message for You.*** Clean Technica, April 2017, <https://cleantechnica.com/2017/04/12/cows-america-renewable-energy-message/>
- ***Getting from Greenhouse Gas to Microbial Biomass.*** NanoWerk (Nanotechnology Press), February 2017, <http://www.nanowerk.com/news2/green/newsid=45762.php>
- ***Bernstein Named to Microbiology Editorial Board at Scientific Reports.*** PNNL News, October 2016, <http://www.pnnl.gov/science/highlights/highlight.asp?id=4453>
- ***Fast-growth cyanobacteria gets thumbs up from scientists for biofuels production.*** Biofuels International, July 2016. http://biofuels-news.com/display_news/10828/fastgrowth_cyanobacteria_gets_thumbs_up_from_scientists_for_biofuels_production/
- ***Fast-growth cyanobacteria have allure for biofuel, chemical production.*** Science Daily, July 2016. <https://www.sciencedaily.com/releases/2016/07/160728110437.htm>
- ***Speeding cyanobacteria growth “brightens” biofuel’s future.*** R&D Magazine, January 2015. <http://www.rdmag.com/news/2015/01/speeding-cyanobacteria-growth-brightens-biofuels-future>
- ***Microbes map path toward renewable energy future.*** Science Daily, November 2015. <https://www.sciencedaily.com/releases/2015/11/151111114827.htm>
- ***When the going gets tough, the tough get growing.*** PNNL News, July 2016. <http://www.pnnl.gov/news/release.aspx?id=4298>
- ***Microbes map path toward renewable energy future.*** Global News Connect, November 2015, <http://globalnewsconnect.com/microbes-map-path-toward-renewable-energy-future/>
- ***Microbes map path toward renewable energy future.*** PNNL News, November 2015, http://www.pnnl.gov/news/release.aspx?id=4234&utm_source=Google%2B&utm_medium=Social&utm_campaign=RelCyanothece
- ***Bernstein co-authors book chapter that Aims to guide microbial community engineering.*** PNNL News, September 2015, <http://www.pnnl.gov/science/highlights/highlight.asp?id=4097>
- ***Synthetic microbial consortia can be engineered for enhanced biomass productivity.*** National Science Foundation’s Integrative Graduate and Research Traineeship (IGERT) Highlights, December 2013, <http://www.igert.org/highlights/785>
- ***Yellowstone National Park’s extremely hot springs and pools provide niches for specialized microbial communities. VIDEO.*** Center for Biofilm Engineering’s science video, 2012, <https://www.youtube.com/watch?v=UdSrYHWLHZE>

SELECTION OF INVITED SEMINARS & CONFERENCE PROCEEDINGS

1. **Bernstein, H.C.** “Principles of microbial community design: at the intersection of ecology. And engineering.” (November 29th, 2023). Invited talk, Planet Erde 3.0 Seminar series at the University of Greifswald, Germany. <https://www.wiko-greifswald.de/programm/vortraege/aktuelle-schwerpunkte/planet-erde-30/>
2. **Bernstein, H.C.** “Hot Lake: A story of salty biofilms, microbial activity gradients, and succession dynamics.” (June 1st, 2021). Invited Talk, EMBL’s Planetary Biology Seminar Series. **YouTube link:** <https://www.youtube.com/watch?v=hEJO3F2DcAk>
3. **Bernstein, H.C.,** **Lead Session Organizer,** Carbon Capture and Utilization Workshop (March 23rd, 2021). The Peter F. Hjort Seminar; Circular Economy and Sustainability (in Norwegian). https://uit.no/tavla/artikkel/718309/peter_f_hjort-seminaret_i_mo_i_rana_sirkulaer_ok

4. **Bernstein, H.C., Lead Session Organizer**, “Algae in the Arctic: Nature’s Gift for Combating Greenhouse Gasses.” (May 15th, 2021). UArctic Congress 2021(digital sessions)
5. **Bernstein, H.C.** “Hot Lake: A story of salty biofilms, chemical gradients, and succession dynamics.” (March 25th, 2021). Invited Talk, The Center for Biofilm Engineering’s Virtual Seminar Series. <https://biofilm.montana.edu/cbe-seminar-series.html>
6. **Bernstein, H.C., Lead Session Organizer**, Carbon Capture and Utilization Workshop (March 23rd, 2021). The Peter F. Hjort Seminar; Circular Economy and Sustainability (in Norwegian). https://uit.no/tavla/artikkel/718309/peter_f_hjort-seminaret_i_mo_i_rana_sirkulaer_ok
7. **Bernstein, H.C.** “Leveraging Microbial Ecosystems for Innovating CCUS Technologies” (November 3rd, 2020). Invited Talk, Carbon Capture Utilization and Sequestration Session, Norway – Singapore Science Week 2020. Digital - **YouTube link:** <https://www.youtube.com/watch?v=JszJF027LG8&t=8520s>
8. **EcoTech4CCU: Ecosystem Inspired Biotechnology for Carbon Capture, Sequestration and Utilization.** (Workshop Organizer) A workshop sponsored by University of the Arctic and hosted by UiT. To be held October 16-18th (Tromsø, Norway).
9. **Bernstein, H.C. Organizing Committee member and Session Chair** “Principles and Engineering for Molecular Systems Biology” (September 25th 2018). International Study Group for Systems Biology (ISGSB) Conference 2018 – Tromsø, Norway
10. **Bernstein, H.C.** “Model Gut Consortia Elucidate Collaborative Multispecies Bile Acid Metabolism” (August 13th 2018). Contributed Talk, Human Microbiomes Session, The 17th Symposium for The International Society of Microbial Ecology (ISME17) – Leipzig, Germany
11. **Bernstein, H.C.** “Living Chemical Event Detectors Engineered from Self-regulating Gene Circuits in No-traditional Microbial Hosts” (November 29th 2017). **Invited Talk**, Chemical and Biological Defense Science & Technology Conference – Long Beach, CA, USA
12. **Bernstein, H.C.** “Deciphering Carbon and Energy Flows through Photosynthetically-Driven Microbial Communities: integrated kinetic and genomic approaches.” (August 10th 2017). **Invited research seminar** for the Department of Arctic and Marine Biology, The Arctic University of Norway – UiT, Tromsø, Norway
13. **Bernstein, H.C.** “Biotechnological potentials of diatoms.” (August 9th 2017). **Invited research seminar** for The Arctic Centre for Sustainable Energy, The Arctic University of Norway – UiT, Tromsø, Norway
14. **Bernstein, H.C.** “Deciphering Carbon and Energy Flows through Photosynthetically-Driven Microbial Communities: integrated kinetic and genomic approaches.” (December 1st 2016). **Invited seminar** for the Department of Biosystems Engineering, WSU, Pullman, USA
15. **Bernstein, H.C., McClure, R.S., Song, H-S., Bryant, D.A., Fredrickson, J.K., Beliaev, A.S., Jansson, J.K.** (2016). Emergent responses of microbial partnership; acclimation and coordination in a model phototrophic-heterotrophic consortium. *16th Symposium for the International Society for Microbial Ecology ISME16. Montreal, Canada*
16. **Bernstein, H.C., Hill, E.A., Beliaev, A.S.** (2015). Phototrophic polycultures enable robust biomass and bioproduct synthesis from natural gas feedstock. Poster presentation. *Algae Biomass Summit conference, Washington, DC, USA*
17. **Bernstein, H.C., Carlson, R.P., Beliaev, A.S., Fredrickson, J.K.** (2015). Engineering emergent properties in synthetic microbial communities. Poster presentation. *Synthetic Biology: Engineering, Evolution and Design. Boston, MA, USA*
18. **Bernstein, H.C., McClure, R.S., Song, H-S., Lindemann, S.R., Jansson, G.C., Beliaev, A.S.** (2015). Using photoautotroph-heterotroph interactions as framework for building a self-sustained microbial consortium. Poster presentation. *Keystone Symposium-Precision Genome Engineering. Bigsky, MT, USA*
19. **Bernstein, H.C., Hill, E.A., Markillie, L.M., Fredrickson, J.K., Konopka, A., Beliaev, A.S.** (2014). Understanding multispecies interactions between cyanobacteria and heterotrophs: from

- growth kinetics to global transcription. Poster presentation. *15th Symposium for the International Society for Microbial Ecology ISME15. Seoul, S. Korea*
20. **Bernstein, H.C.**, Gardner, R., Miller, C., Sims, R., (2014). Spatially evaluating oxygenic photosynthesis and respiration inside wastewater remediating and biofuel producing algal biofilms. Oral presentation. *15th Symposium for the International Society for Microbial Ecology ISME15. Seoul, S. Korea*
 21. **Bernstein, H.C.**, Bleem, A., Carlson, R.C., (2012). Microelectrode analysis of an artificial phototrophic biofilm consortium reveals a positive feedback basis of syntrophic interactions. Oral presentation. *AICHE Annual Meeting, Pittsburgh, PA*
 22. **Bernstein, H.C.**, Paulson, S.R., Carlson, R.C., (2012). Synthetic Escherichia coli consortia engineered for syntrophy demonstrate enhanced biomass productivity. Poster presentation. *14th Symposium for the International Society for Microbial Ecology ISME14. Copenhagen, Denmark. Poster presentation, BEST POSTER AWARD*
 23. **Bernstein, H.C.**, Carlson, R.C., (2011). A synthetic microbial community design based on syntrophic metabolite exchange. Oral presentation. *AICHE Annual Meeting, Minneapolis, MN*

SYNERGYSTIC ACTIVITIES AND COMMISIONS OF TRUST

- Steering committee board member for Photosynthech, a national graduate school from the Norwegian Research Council. (2023 – current). <https://photosyntech.no/>
- Editorial board member for The ISME Journal, an International Society for Microbial Ecology journal from Nature Publishing Group (2020 – Current); <https://www.nature.com/ismej/editors/editorial-board>
- Editorial board member for mSystems, an open access journal from the American Society for Microbiology (2019 – Current); <https://msystems.asm.org/content/board-editors>
- Editorial board member for Scientific Reports, an open access journal (2015 – 2020)
- Co-Editor for Special Issue of Cellular and Molecular Life Sciences (Springer Publishing). Systems Biology Mini-Reviews (2019).
- Board member for the International Study Group for Systems Biology (ISGSB). <https://site.uit.no/isgsb/>
- Review Editor for Frontiers in Microbiotechnology. Ecotoxicology and Bioremediation; <http://journal.frontiersin.org/journal/all/section/microbiotechnology-ecotoxicology-and-bioremediation>
- SANOCEAN International Review Committee Member. Research Council of Norway (Forskningsrådet) and National Research Foundation of South Africa. 13-14.10.2018. Pretoria, South Africa. https://www.forskningsradet.no/prognett-southafrica/Home_page/1226994002766
- Energy-i-Corps training from the U.S. Department of Energy (Formerly DOE Lab Corps); Entrepreneurial Lead of Team *Co-culture Green* (1st cohort Oct. 11–Nov. 19, 2015, Golden, CO, USA) <http://energy.gov/eere/technology-to-market/lab-corps>
- EcoFAB summit: Model Ecosystems Linking Genome Biology to Ecosystem Processes (April 27, 2017, Washington DC, USA); https://uho.wpengine.com/ecofab2/wp-content/uploads/sites/12/2017/09/2017_EcoFAB_Summit_Report.pdf
- Panelist for the 2017 Chemical Engineering Graduate Student Symposium at the University of Washington, Seattle, WA., USA (Sept. 25, 2017). <https://depts.washington.edu/acesche/2017-graduate-student-symposium>
- Staff and Engineer Training and Development Program (SEDP); <https://acs.confex.com/acs/norm07/techprogram/P45348.HTM>
- Thesis Committee member for graduate students studying in the Voiland School of Chemical and Biological Engineering, Washington State University
- *Ad hoc* reviewer for:
 - U.S. Department of Energy Bioenergy Technology Office, SBIR programmatic funding

- U.S. National Science Foundation, programmatic funding
- The Carbon Research Technology Foundation, programmatic funding
- Nature Reviews Microbiology
- Trends in Microbiology
- Nucleic Acid Research
- ACS Synthetic Biology
- Science of the Total Environment
- Biotechnology for Biofuels
- Environmental Microbiology
- MSpectrum
- Frontiers in Microbiology
- Wound Repair and Regeneration
- Astrobiology
- Selected list of service as evaluator on faculty hiring committees at UiT
 - 2023: Associate/Full-Professor in Synthetic Biology at Nord University, Bodø, NO
 - 2019: Tenure-Track Faculty member with Centre for new Antibacterial Strategies (CANS)
 - 2019: Associate/Full-Professor with The Arctic Centre for Sustainable Energy (ARC)
- National Science Foundation-IGERT Fellow (MSU)
- Active member of the American Institute of Chemical Engineering (AIChE) and the International Society for Microbial Ecology (ISME)
- Youth Football/Soccer Trainer, Kvaløya Sports Klub (KSK, Tromsø, Norway), 2019-current.
- Youth Fly Fishing Instructor, Big Sky Youth Empowerment, Bozeman, MT, USA (summer 2011)

STUDENTS & SUPERVISION

2023- pres.	Lena Liesa Katharina Winter, MSc Student, Norwegian College of Fisheries Sciences, UiT- The Arctic University of Norway, Tromsø, NO
2022- pres.	Johan Bjerg, Laboratory Engineer in Synthetic Biology, Norwegian College of Fisheries Sciences, UiT- The Arctic University of Norway, Tromsø, NO
2022- pres.	Michael Dills, PhD Student, Norwegian College of Fisheries Sciences, UiT- The Arctic University of Norway, Tromsø, NO
2021- 2022	Luisa Deppe, MSc Student, Norwegian College of Fisheries Sciences, UiT- The Arctic University of Norway, Tromsø, NO
2021- pres.	Sebastian Petters, Senior Laboratory Engineer in Bioinformatics, Norwegian College of Fisheries Sciences, UiT- The Arctic University of Norway, Tromsø, NO
2020- 2022	Vanja Verusevski, MSc Student, Norwegian College of Fisheries Sciences, UiT- The Arctic University of Norway, Tromsø, NO
2019- pres.	Dennis Chan, PhD Student, Norwegian College of Fisheries Sciences, UiT- The Arctic University of Norway, Tromsø, NO
2019- 2023	Hannah Schweitzer, Postdoctoral Researcher, Norwegian College of Fisheries Sciences, UiT- The Arctic University of Norway, Tromsø, NO
2019- pres.	Stina Krsmanovic, Head Laboratory Engineer, Norwegian College of Fisheries Sciences, UiT- The Arctic University of Norway, Tromsø, NO
2018- 2022	Nerea Johanna Aalto, PhD Student, Norwegian College of Fisheries Sciences, UiT- The Arctic University of Norway, Tromsø, NO (<u>Continued Postdoc mentorship from 2022 – current</u>)
2018 - 2020.	Erlend Grann-Meyer, MSc Student, Norwegian College of Fisheries Sciences, UiT- The Arctic University of Norway, Tromsø, NO

2018- 2019	Richard Andre Ingebrigtsen, Postdoctoral Researcher and Instructor, Norwegian College of Fisheries Sciences, UiT- The Arctic University of Norway, Tromsø, NO
2017-2019	Elias Zegeye, PhD Student and Research Assistant, Washington State University, Pullman, WA, USA; and Biological Sciences Division, Pacific Northwest National Laboratory, Richland, WA, USA
2016-2018	Bryan Killinger, PhD Student and Research Assistant, Washington State University, Pullman, WA, USA; and Biological Sciences Division, Pacific Northwest National Laboratory, Richland, WA, USA
2017-2018	Nymul Khan, Post-Doctoral Research Scientist, Biological Sciences Division, Pacific Northwest National Laboratory, Richland, WA, USA
2016-2018	Colin Brislawn, Staff Technician, Biological Sciences Division, Pacific Northwest National Laboratory, Richland, WA, USA
2017-2018	Yuliya Farris, Post-Bachelor's Research Scientist, Biological Sciences Division, Pacific Northwest National Laboratory, Richland, WA, USA
2015-2018	Tobias Flores-Wentz, Student Research Apprenticeship Program (SRAP), Biological Sciences Division, Pacific Northwest National Laboratory, Richland, WA, USA
2015	Safwan Elkhatab, Department of Energy Science Undergraduate Laboratory Intern (SULI), Biological Sciences Division, Pacific Northwest National Laboratory, Richland, WA, USA
2011-2013	Alissa Bleem, Undergraduate Researcher, Chemical and Biological Engineering, Montana State University, Bozeman MT, USA
2010-2012	Steven Paulson, Undergraduate Researcher, Chemical and Biological Engineering, Montana State University, Bozeman MT, USA