

## Curriculum Vitae

### RACHAEL M. MORGAN-KISS, Ph.D.

O'Toole Family Professor and Chair,  
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### Education and Training

University of Victoria	Biology 1 <sup>st</sup> class	B.S.	1995
University of Western Ontario	Plant Sciences (physiology)	Ph.D.	2000
University of Illinois U-C	Lipid Biochemistry	Postdoc/Lab Chief	2001-2005
University of Delaware	Environmental Microbiology	Research Scientist	2005-2007

### Research and Professional Appointments

Miami University, Chair of Microbiology, 2024-present  
Miami University, O'Toole Family Professor, 2021-present  
Miami University, Director of Graduate Studies, Microbiology, 2021-2024  
Miami University, Professor, Microbiology, 2020-present  
Miami University, Associate Professor, Microbiology, 2013-2020  
Miami University, Affiliate Professor, Biology, 2012 - present  
Miami University, Assistant Professor, Microbiology, 2007-2013

### Other Professional Experience

2011, 2012, 2014, 2017, 2018, 2020, 2022 – Field Team Lead, McMurdo Dry Valleys, Antarctica  
2017 – Lead Instructor, SSV Corwith Cramer, SEA Miami/SEA Semester  
2015 – Crew Member, SSV Corwith Cramer, SEA Semester  
2014 – Field Team Member, Tibetan Plateau, Kashi, China  
2005, 2009 – Field Team Member, McMurdo Dry Valleys, Antarctica

### Teaching Experience

MBI 123 – 1 credit, Experimenting with Microbes  
MBI 223 – 1 credit, Phage Biology  
MBI 201/ 201H – 4 credits, General Microbiology  
MBI 475 /575 – 4 credits, Microbial Ecology  
MBI 350/ 399 – 6 credits, SEA Miami I & II, Ocean Sciences & Nautical Training (study abroad)  
MBI 450.P /750.P – 3 credits, Special Topics in Photosynthesis  
MBI 425/ 525 – 4 credits, Microbial Physiology  
BIO /MBI 333 – 3 credits, Field Ecology  
MBI 490 – 1 credit, Senior Capstone  
MBI 750F – 1 credit, Ecology Journal Club  
MBI 690 – 1 credit, Graduate Seminar

### Publications

Authorship notations: \*, MU undergraduate student; \*\*, MU graduate student; \*\*\*, MU postdoctoral fellow; ¥, corresponding author. [ ], 2022 journal impact factor

### Published, peer-reviewed journals

1. **Morgan-Kiss R.M.** ¥, Popson D.\*\*, Pereira R.\*\*, Dolhi-Binder J.\*\*, Teufel A.\*\*, Li W.\*\*, Kalra I.\*\*, Sherwell S.\*\*, Reynebeau E., and Takacs-Vesbach C. Sentinel protist taxa of the McMurdo Dry Valley lakes, Antarctica. *Frontiers in Ecology and Evolution. Special Issue: Surviving the Anthropocene: The Three E's Under Pressing Planetary Issues. In Press.*

2. Stone M.S., Devlin S. P., Hawes I., Welch K., Gooseff M. Takacs-Vesbach C., **Morgan Kiss R.M.**, Adams B., Barrett J., Priscu J.C. and Doran P. McMurdo Dry Valley lake edge "moats": the ecological intersection between terrestrial and aquatic polar desert habitats. *Antarctic Science. In Press.*
3. **Morgan-Kiss, R.** Long days and long nights: an integrative study reveals survival strategies of an Antarctic diatom during the cold and dark polar winter. *New Phytologist. In Press.*
4. Kalra I.\*\*\*, Wang X., Zhang R. and **Morgan-Kiss R.M.** (2023) High salt-induced PSI-supercomplex is associated with high CEF and attenuation of state transitions. *Photosynthesis Research*, 157: 65-84. <https://doi.org/10.1007/s11120-023-01032-y> [3.429]
5. Poirier M., Osmer P., Wilkins K. and **Morgan-Kiss R.M.** and Cvetkovska, M. (2023) Aberrant light sensing and motility in the green alga *Chlamydomonas priscuii* from the ice-covered Antarctic Lake Bonney. *Plant Signaling & Behavior*, 18; 2184588. <https://doi.org/10.1080/15592324.2023.2184588> [2.734]
6. Tallada S., Hall G., Barich D. and **Morgan-Kiss R.M.** and Slonczewski, J.L. (2022) Antibiotic resistance genes and taxa analysis from mat and planktonic microbiomes of Antarctic perennial ice-covered Lake Fryxell and Lake Bonney. *Antarctic Science* 34: 408-422. <https://doi:10.1017/S0954102022000360> [2.104]
7. Smith D.R., Leung A., Zhang X., Cvetkovska M., **Morgan-Kiss, R.M.** and Hüner, N.P. (2022) An Antarctic alga that can survive the extreme cold. *Frontiers for Young Minds (Education Journal)* 10. <https://doi.org/10.3389/frym.2022.740838> [0.500]
8. Sherwell S.\*\*\*, Kalra I.\*\*\*, Li W.\*\*\*, McKnight D.M., Priscu J.C. and **Morgan-Kiss R.M.** (2022) Antarctic lake phytoplankton and bacteria from near-surface waters exhibit high sensitivity to climate-driven disturbance. *Environmental Microbiology* 24: 6017-6032. <https://doi.org/10.1111/1462-2920.16113> [5.476]
9. Stahl-Rommel S.\*\*\*, Kalra I.\*\*\*, D'Silva S.\*, Hahn M.M.\*, Popson D.\*\*\*, Cvetkovska M. and **Morgan-Kiss R.M.** (2021) Cyclic electron flow (CEF) and ascorbate pathway activity provide constitutive photoprotection for the photopsychrophile, *Chlamydomonas* sp. UWO241 (renamed *Chlamydomonas priscuii*). *Photosynthesis Research* 151: 235-250. <https://doi.org/10.1007/s11120-021-00877-5> [3.421]
10. Patriarche J.D., Priscu J.C., Takacs-Vesbach C., Winslow L., Myers K.F., Buelow H., **Morgan-Kiss R.M.** and Doran, P.T. (2021) Year-round and long-term phytoplankton dynamics in Lake Bonney, a permanently ice-covered Antarctic lake. *Journal of Geophysical Research: Biogeosciences*. p.e2020JG005925. <https://doi.org/10.1029/2020JG005925> [4.421]
11. Zhang X., Cvetkovska M., **Morgan-Kiss R.M.**, Hüner N.P.A., and Smith D.R. (2021) Draft genome sequence of the Antarctic green alga *Chlamydomonas* sp. UWO241. *iScience* 102084-102084. <https://doi.org/10.1016/j.isci.2021.102084> [5.75]
12. Shinde S., Zhang X., Singapur S.P., Kalra I.\*\*\*, Liu X., **Morgan-Kiss R.M.** and Wang X. (2020) Glycogen metabolism supports photosynthesis start through the oxidative pentose phosphate pathway in cyanobacteria. *Plant Physiology* 182: 507-517. <https://doi.org/10.1104/pp.19.01184> [8.005]
13. Kalra I.\*\*\*, Wang X., Cvetkovska M., Jeong J., McHargue W., Zhang R., Hüner N.P.A., Cvetkovska M. **Morgan-Kiss, R.M.** (2020) *Chlamydomonas* sp. UWO 241 exhibits high cyclic electron flow and rewired metabolism under high salinity. *Plant Physiology* 183: 588-601. <https://doi.org/10.1104/pp.19.01280> [8.005]
14. Raymond J.A., **Morgan-Kiss R.M.**, and Stahl-Rommel S.\*\*\* (2020) Glycerol is an osmoprotectant in two Antarctic *Chlamydomonas* species from an ice-covered saline lake and is synthesized by an unusual bidomain enzyme. *Frontiers in Plant Science* 11: 1259-1259. <https://doi.org/10.3389/fpls.2020.01259> [6.627]
15. Schutte, C.A., Samarkin, V.A., Peters, B., Madigan, M.T., Bowles, M., **Morgan-Kiss, R.M.**, Casciotti, K. and Joye, S. (2020) Vertical stratification and stability of biogeochemical processes in the deep saline waters of Lake Vanda, Antarctica. *Limnology and Oceanography*, 65: 569-581. <https://doi.org/10.1002/lno.11327> [5.019]
16. Li W.\*\*\*, Dore J.E., Steigmeyer A.J., Cho Y.J., Kim O.S., Liu Y., **Morgan-Kiss R.M.**, Skidmore, M.L. and Priscu, J.C. (2020) Methane production in the oxygenated water column of a perennially ice-covered Antarctic lake. *Limnology and Oceanography*, 65: 143-156. <https://doi.org/10.1002/lno.11257> [5.019]
17. Yue L., Kong W.\*\*\*, Ji M., Liu J. and **Morgan-Kiss R.M.** (2019) Community response of microbial primary producers to salinity is primarily driven by nutrients in lakes. *Science of the Total Environment*. 696, 134001. <https://doi.org/10.1016/j.scitotenv.2019.134001> [10.754]

18. Smith, D.R., Cvetkovska M., Hüner N.P.A. and **Morgan-Kiss R.M.** (2019) Presence and absence of light-independent chlorophyll biosynthesis among *Chlamydomonas* green algae in an ice-covered Antarctic lake. *Communicative and Integrative Biology*. 12: 148-150. <https://doi.org/10.1080/19420889.2019.1676611> [0.515]
19. Kong W.\*\*\*, Liu J., Ji M., Yue L., Kang S., **Morgan-Kiss R.M.** (2019) Autotrophic succession from glacier terminus to downstream waters on the Tibetan Plateau. *FEMS Microbiology Ecology*. 95 fiz074 <https://doi.org/10.1093/femsec/fiz074> [4.519]
20. Li W.\*\* and **Morgan-Kiss R.M.** (2019) Influence of environmental drivers and potential interactions on the distribution of microbial communities from three permanently stratified Antarctic lakes. *Frontiers in Microbiology Special Issue: Digitizing the Cryosphere*. 10, article 1067. <https://doi.org/10.3389/fmicb.2019.01067> [6.064]
21. Cook G.P.\*\*\*, Teufel A.G.\*\*\*, Kalra I.\*\*\*, Li W.\*\*\*, Priscu J.P., Wang X. and **Morgan-Kiss R.M.** (2019) The Antarctic psychrophiles *Chlamydomonas* spp. UWO241 and ICE-MDV exhibit differential restructuring of Photosystem I in response to iron. *Photosynthesis Research*. 141:209-228. <https://doi.org/10.1007/s1112> [3.429]
22. Thompson L.R., Sanders J.G., McDonald D., Amir A., Ladau J., Locey K.J., Prill R.J., Tripathi A., Gibbons S.M., Ackermann G., Navas-Molina J.A. and **The Earth Microbiome Consortium** (Morgan-Kiss, R., consortium authorship). (2017) A communal catalogue reveals Earth's multiscale microbial diversity *Nature*. 551: 457-463 <https://doi.org/10.1038/nature24621> [64.8]
23. Li W.\*\*\*, Dolhi J.M.\*\*\*, Cariani Z.\*\*\*, and **Morgan-Kiss R.M.** (2019) Drivers of protistan community autotrophy and heterotrophy in chemically stratified Antarctic lakes. *Aquatic Microbial Ecology*. 82:225-239. <https://doi.org/10.3354/ame01891>. [1.4]
24. Raymond J.A. and **Morgan-Kiss R.M.** (2017) Multiple ice-binding proteins of probably prokaryotic origin in an Antarctic lake alga, *Chlamydomonas* sp. ICE-MDV (Chlorophyceae). *Journal of Phycology* 53: 848-854. <https://doi.org/10.1111/jpy.12550> [3.173]
25. Li W.\*\*\*, Podar, M. and **Morgan-Kiss R.M.** (2016) Ultrastructural and single-cell-level characterization reveals metabolic versatility in a microbial eukaryote community from an ice-covered Antarctic lake. *Applied Environmental Microbiology (Cover Article)* 82: 3659-3670. <https://doi.org/10.1128/AEM.00479-16> [5.005]
26. Liu J., Kong W., Ahang G., Guoxia G. and **Morgan-Kiss R.M.** (2016) Diversity and succession of autotrophic microbial community in high-elevation soils along deglaciation chronosequence. *FEMS Microbiology Ecology* 92: fiw160. <https://doi.org/10.193/femsec/fiw160> [4.519]
27. **Morgan-Kiss R.M.**, Lizotte M.P., Kong W.\*\*\* and Priscu J.C. (2016) Photoadaptation to the polar night by phytoplankton in a permanently ice-covered Antarctic lake. *Limnology & Oceanography*. 61:3-13. <https://doi.org/10.1002/lno.10107> [5.019]
28. Bowman J.S., Vick-Majors T.J., **Morgan-Kiss R.M.**, Takacs-Vesbach C., Ducklow H.W. and Priscu J.C. (2016) Microbial community dynamics in two polar extremes: the lakes of the McMurdo Dry Valleys and the West Antarctic Peninsula marine ecosystems. *Bioscience (Invited series of papers for special issue)*. 66: 829-847 <https://doi.org/10.1093/biosci/biw103> [11.566]
29. Obryk M.K., Doran P.T., Friedlaender A.S., Gooseff M.N., Li W.\*\*\*, **Morgan-Kiss R.M.**, Priscu J.C., Schofield O., Stammerjohn S.E., Steinberg D.K. and Ducklow H.W. (2016) Responses of Antarctic marine and freshwater ecosystems to changing ice conditions. *Bioscience (Invited series of papers for special issue)* 66: 864-879. <https://doi.org/10.1093/biosci/biw109> [11.566]
30. Teufel A.G.\*\*\*, Li W.\*\*\*, Kiss A.J. and **Morgan-Kiss R.M.** (2016) Impact of nitrogen and phosphorus on phytoplankton production and bacterial community structure in two stratified Antarctic lakes: a bioassay approach. *Polar Biology* 40: 1007-1022 <https://doi.org/10.1007/s00300-016-2025-8> [1.76]
31. Ivanov A.G., **Morgan-Kiss R.M.**, Krol M., Allakhverdiev S.I., Zanev Y., Sane P.V. and Hüner N.P.A. (2015) Photoinhibition of photosystem I in a pea mutant with altered LHClI organization. *Journal of Photochemistry and Photobiology B: Biology* 152: 335-346. <https://doi.org/10.1016/j.jphotobiol.2015.08.018> [6.814]
32. Dolhi J. M.\*\*\*, Teufel A. G.\*\*\*, Kong W.\*\*\* and **Morgan-Kiss, R. M.** (2015) Diversity and spatial distribution of autotrophic communities within and between ice-covered Antarctic lakes (McMurdo Dry Valleys). *Limnology & Oceanography* 60: 977-991. <https://doi.org/10.1002/lno.10071> [5.019]

33. Xu Y., Vick-Majors T., **Morgan-Kiss R.**, Priscu J.C. and Amaral-Zettler L. (2014) Ciliate biodiversity and novel taxa in lakes of the McMurdo Dry Valleys, Antarctica. *Biological Bulletin* 227:175-190. <https://doi:10.1086/BBLv227n2p175> [1.932]
34. Kong W.\*\*\*, Li W.\*\*, Romancova I., Prasil O. and **Morgan-Kiss R.M.** (2014) An integrated study of photochemical function and expression of a key photochemical gene (*psbA*) in photosynthetic communities of Lake Bonney (McMurdo Dry Valleys, Antarctica). *FEMS Microbiology Ecology Special Issue: Polar and Alpine Microbiology* 82:293-802 <https://doi:10.1111/1574-6941.12296> [4.519]
35. Raymond J.A. and **Morgan-Kiss R.M.** (2013) Separate origins of ice-binding proteins in Antarctic *Chlamydomonas* species. *PLoS One* 8:e59186 <https://doi:10.1371/journal.pone.0059186> [3.7]
36. Kong W.\*\*\*, Dolhi J.M.\*\*, Chiuchiolo A., Priscu J.C. and **Morgan-Kiss R.M.** (2012) Evidence of form II RubisCO (*cbbM*) in a perennially ice-covered Antarctic lake. *FEMS Microbiology Ecology Special Issue: Polar and Alpine Microbiology*.82:491-500 <https://doi:10.1111/j.1574-6941.2012.01431.x> [4.519]
37. Dolhi J.\*\*, Ketchum N.\* and **Morgan-Kiss R.M.** (2012) Use of carbon fixation potential as a measure of metabolic versatility between phototrophic and mixotrophic enrichment cultures isolated from a chemically stratified Antarctic lake. *Journal of Visual Experiments* 62:e3992. <https://doi:10.3791/3992> [1.23]
38. Bielewicz S.\*, Kong W.\*\*\*, Bell E., Priscu J.C. and **Morgan-Kiss R.M.** (2011) Protist diversity in a permanently ice-covered Antarctic lake during the polar night transition. *ISME Journal* 5: 1559-1564 <https://doi:10.1038/ismej.2011.23> [11.0]
39. Hanson T.E., **Morgan-Kiss R.M.**, Chan L.K. and Hiras J. (2010) Beyond the genome: functional studies of phototrophic sulfur oxidation. *Advances Experimental Medical Biology*. 675: 109-121. [https://doi:10.1007/978-1-4419-1528-3\\_7](https://doi:10.1007/978-1-4419-1528-3_7) [3.65]
40. Jiang Y., **Morgan-Kiss R.M.**, Campbell J., Chan C.H. and Cronan J.E. (2010) Expression of *Vibrio harveyi* Acyl-ACP synthetase allows entry of exogenous fatty acids into the *Escherichia coli* fatty acid and lipid A synthetic pathways. *Biochemistry* 49:718-726. <https://doi:10.1021/bi901890a> [3.321]
41. Kiss A.J., Devries A.L. and **Morgan-Kiss R.M.** (2010) Comparative analysis of crystallins and lipids from the lens of Antarctic toothfish and cow. *Journal of Comparative Physiology B*. 180:1019-1032. <https://doi:10.1007/s00360-010-0475-9> [2.23]
42. Jaraula C.M.B., Brassell S.C., **Morgan-Kiss R.M.**, Doran P.T. and Kenig F. (2010) Tentative identification of pentaunsaturated alkenones from Lake Fryxell, East Antarctica. *Organic Geochemistry*. 41:386-397. <https://doi.org/10.1016/j.orggeochem.2009.12.004> [3.37]
43. Chan L.K., **Morgan-Kiss R.M.** and Hanson T.E. (2009). Functional analysis of three sulfide:quinone oxidoreductase homologs in *Chlorobaculum tepidum*. *Journal of Bacteriology*. 191:1026-1034. <https://doi:10.1128/JB.01154-08> [3.2]
44. **Morgan-Kiss R.M.**, Chan L.K., Weber T.S., Modla S. Czymmek K. and Hanson T.E. (2009) *Chlorobaculum tepidum* regulates chlorosome structure and function in response to temperature and electron donor availability. *Photosynthesis Research* 99:11-21. <https://DOI:10.1007/s11120-008-9361-7> [3.429].
45. **Morgan-Kiss R.M.**, Cronan J.E. (2008) The *Lactococcus lactis* FabF fatty acid synthetic enzyme can functionally replace both the FabB and FabF proteins of *Escherichia coli* and the FabH protein of *Lactococcus lactis*. *Archives of Microbiology*. 190:427-437. <https://DOI:10.1007/s00203-008-0390-6> [2.8].
46. Chan L.K., Weber T.S., **Morgan-Kiss R.M.** and Hanson T.E. (2008) A genomic region required for phototrophic thiosulfate oxidation in the green sulfur bacterium *Chlorobium tepidum* (syn. *Chlorobaculum tepidum*). *Microbiol-Sgm*. 154:818-829. [2.957].
47. **Morgan-Kiss R.M.**, Ivanov A.G., Modla S., Czymmek K., Hüner N.P.A., Priscu J.C., Lisle J.T. and Hanson T.E. (2008) Identity and physiology of a new psychrophilic eukaryotic green alga, *Chlorella* sp., strain BI, isolated from a transitory pond near Bratina Island, Antarctica. *Extremophiles*. 12:701-711. [2.16].
48. Gudynaite-Savich L., Gretes M., **Morgan-Kiss R.M.**, Savich L.V., Simmonds J., Kohalmi S.E. and Hüner N.P.A. (2006) Cytochrome f from the Antarctic psychrophile, *Chlamydomonas raudensis* UWO241: structure, sequence, and complementation in the mesophile, *Chlamydomonas reinhardtii*. *Molecular Genetics Genomics*. 275: 387-398. [2.453].

49. **Morgan-Kiss R.M.**, Ivanov A.G., Pocock T., Gudynaite-Savitch L. and Hüner N.P. (2005) The Antarctic psychrophile, *Chlamydomonas raudensis* Ettl (UWO241) (Chlorophyceae, Chlorophyta) exhibits a limited capacity to photoacclimate to red light. *Journal of Phycology*. 41: 791-800. [1.972].
50. Ivanov A.G., Krol M., Apostolova E.L., **Morgan-Kiss R.M.**, Naydenova N., Hüner N.P.A., Sane P.V. (2005) Oligomerization state of LHCII modulates the redox properties of the acceptor side of Photosystem II in *Costata-2/133* mutant of pea. *Physiology Molecular Biology Plants*. 11:199-207. [1.409].
51. **Morgan-Kiss R.M.** and Cronan Jr. J.E. (2004) The *Escherichia coli fadK* (*ydiD*) gene encodes an aerobically-regulated short-chain acyl-CoA synthetase. *Journal of Biological Chemistry*. 279:37324-37333. [5.328].
52. Campbell J.W., **Morgan-Kiss R.M.** and Cronan Jr. J.E. (2003) A new *Escherichia coli* metabolic competency: growth on fatty acids by a novel anaerobic  $\beta$ -oxidation pathway. *Molecular Microbiology*. 47:793-805. [5.631].
53. **Morgan-Kiss R.M.**, Wadler C. and Cronan Jr., J.E. (2002) Long-term and homogeneous regulation of the *Escherichia coli araBAD* promoter by use of a lactose transporter of relaxed specificity. *Proceedings National Academy Science USA*. 99:7373-7377. [9.771].
54. **Morgan-Kiss R.M.**, Ivanov A.G., Williams J., Khan M. and Hüner N.P.A. (2002) Differential thermal effects on the energy distribution between photosystem II and photosystem I in thylakoid membranes of a psychrophilic and a mesophilic alga. *Biochimica Biophysica Acta*. 1561:251-265. [2.590].
55. **Morgan-Kiss R.M.**, Ivanov A.G. and Hüner N.P.A. (2002) The Antarctic psychrophile, *Chlamydomonas subcaudata*, is deficient in state I-state II transitions. *Planta*. 214:435-445. [3.098].
56. Dobrikova A.G., Ivanov A.G., **Morgan-Kiss R.M.**, Petkanchin I.B. and Taneva S.G. (2000) Contribution of LHCII complex to the electric properties of thylakoid membranes: an electric light scattering study of Chl b-less barley mutant. *Journal of Photochemistry Photobiology B: Biology*. 57:33-40. [2.679].
57. Dobrikova A., **Morgan R.M.**, Ivanov A.G., Apostolova E., Petkanchin I., Hüner N.P.A. and Taneva S.G. (2000) Electric properties of thylakoid membranes from pea mutants with modified carotenoid and chlorophyll-protein complexes composition. *Photosynthesis Research*. 65:165-174. [3.429].
58. Ivanov A.G., **Morgan R.M.**, Gray G.R., Velitchkova M.Y. and Hüner N.P.A. (1998) Temperature/light dependent development of selective resistance to photoinhibition of photosystem I. *FEBS Letters*. 430:288-292. [3.399].
59. **Morgan R.M.**, Ivanov A.G., Maxwell D., Priscu J.C. and Hüner N.P.A. (1998) Structure and composition of the photochemical apparatus of the Antarctic green alga, *Chlamydomonas subcaudata*. *Photosynthesis Research*. 56:303-314. [3.429].

## Reviews, chapters

1. Hüner, N.P., Smith, D.R., Cvetkovska, M., Zhang, X., Ivanov, A.G., Szyszka-Mroz, B., Kalra, I.\*\* and **Morgan-Kiss, R. M.** (2022) Photosynthetic adaptation to polar life: Energy balance, photoprotection and genetic redundancy. *Journal of Plant Physiology (Invited Review)*, 268: 153557. [3.686]
2. Teufel A.G.\*\* and **Morgan-Kiss R.M.**‡ (2018) Physiological and biochemical adaptations in psychrophiles. Eds: Durvasula R.V., Rao D.V. In: *Extremophiles-from Biology to Biotechnology (Invited Chapter)*. pp. 185-208.
3. Dolhi J.M.\*\*, Maxwell D.P. and **Morgan-Kiss R.M.**‡ (2013) Review: The Antarctic *Chlamydomonas raudensis*: an emerging model for cold adaptation of photosynthesis. *Extremophiles* 17:711-722
4. Dolhi J.M.\*\* and **Morgan-Kiss R.M.**‡ (2012) Microorganisms and plants: a photosynthetic perspective. Eds. Storey K.B., Tanino K.K. In: *Temperature Adaptations in a Changing Climate-Nature at Risk (Invited Chapter)* Vol. 3 24 pp.
5. Hanson T.E., **Morgan-Kiss R.M.**, Chan L.K. and Hiras J. (2010) Beyond the Genome: Functional Studies of Phototrophic Sulfur Oxidation. In: *Recent Advances in Phototrophic Prokaryotes* pp. 109-121. Springer, New York, NY.
6. **Morgan-Kiss R.M.**, Priscu J.C., Pocock T., Gudynaite-Savich L. and Hüner N.P.A. (2006) Adaptation and acclimation of photosynthetic microorganisms to permanently cold environments. *Microbiology & Molecular Biology Review (Invited Review)* 70:222-252. [12.22]

### Submitted or In review

Huner N.P.A., **Morgan-Kiss R.M.**, Smith D., Ivanov A., Szyska-Mroz B. The enigma of photopsychrophily and adaptation to polar habitats. In: Handbook of Polar Microbes: Biodiversity, Adaptations and Climate Change. Taylor and Francis, CRC Press. *In Review*.

### Presentations at meetings of learned societies (>2012 only)

1. *Popson D.\*\** and **Morgan-Kiss R.M.** (2023) Long-term acclimation and adaptation shape the short-term high light stress response in the Antarctic alga, *Chlamydomonas priscuii*. Invited talk presented at the 49<sup>th</sup> Midwest Photosynthesis Meeting, Turkey Run State Park, IN.
2. *Marichal D.\*\** and **Morgan-Kiss R.M.** (2023) Impact of heterotrophic bacteria on stress response in Antarctic algae. Poster presented at the 49<sup>th</sup> Midwest Photosynthesis Meeting, Turkey Run State Park, IN.
3. *Wheless K.\*\** and **Morgan-Kiss R.M.** (2023) The impact of organic carbon on stress acclimation in *Chlamydomonas reinhardtii*. Poster presented at the 49<sup>th</sup> Midwest Photosynthesis Meeting, Turkey Run State Park, IN.
4. *Pereira R.\*\** and **Morgan-Kiss R.M.** (2023) Impact of salinity stress on isolated phytoplankton: Isochrysis sp. MDV and *Chlamydomonas* sp. ICE-MDV from Antarctic Lake Bonney. Poster presented at the 49<sup>th</sup> Midwest Photosynthesis Meeting, Turkey Run State Park, IN.
5. **Morgan-Kiss R.M.** (2023) 30 years of research on *Chlamydomonas priscuii*. Talk presented at the Priscuii Workshop, Miami University, OH.
6. *Muller J.\**, *Perminter, A.\**, *Fritch M.\**, *Horn M.\**, *Nagle B.\**, *Patel J.\**, *Hoover E.\**, *Moore A.\**, *Karsten E.\**, *Tonucci G.\**, *Wilkes J.\**, *Vargas E.\**, *Coon H.\*\**, *Owens C.\*\**, *Wheless K.\*\**, *Marichal D.\*\**, *Sharma C.\*\**, *Gaillot C.\*\**, *Krzysiak B.\*\**, *Periera R.\*\** and **Morgan-Kiss R.M.** (2023) MBI475 & MBI575: 9 research posters presented at Undergraduate Research Forum, Miami University, OH.
7. *Wasmond C.\**, *Popson D.\*\** and **Morgan-Kiss R.M.** (2023) Impact of elevated on palmelloid formation and disruption in *Chlamydomonas* species. Poster presented at Undergraduate Research Forum, Miami University, OH.
8. *Morgan J.\** and **Morgan-Kiss R.M.** (2023) Actinobacteria and their link to unique ecosystems in the Taylor Valley, Antarctica. Poster presented at Undergraduate Research Forum, Miami University, OH.
9. *Higginbotham H.\**, *Periera R.\*\**, *Krzysiak B.\*\** and **Morgan-Kiss R.M.** (2023) The impact of salinization on phytoplankton growth and microbial community structure in Lake Acton, Ohio. Poster presented at American Society of Microbiologists, Ohio Branch, Miami University, OH
10. *Popson D.\*\** and **Morgan-Kiss R.M.** (2023) Impact of long-term stress acclimation on response to short-term photoinhibition in the Antarctic alga, *Chlamydomonas priscuii*. Poster presented at American Society of Microbiologists, Ohio Branch, Miami University, OH
11. *Periera R.\*\** and **Morgan-Kiss R.M.** (2023) Towards identification and investigations of sentinel taxa in Antarctic Lake Fryxell. Poster presented at American Society of Microbiologists, Ohio Branch, Miami University, OH
12. *Krzysiak B.\*\** and **Morgan-Kiss R.M.** (2023) Friend or foe: investigating interactions within the Antarctic algal phycosphere. Poster presented at American Society of Microbiologists, Ohio Branch, Miami University, OH
13. **Morgan-Kiss R.M.**, *Sherwell S.\*\**, *Kalra I.\*\**, *Adams B.*, *Hawes I.*, *Priscu J.*, *Gooseff M.* (2022) McMurdo Dry Valleys LTER: Disturbance patterns in Lakes Bonney and Fryxell. Poster presented at the LTER All Science Meeting, Asilomar, CA
14. *Popson, D.\*\** and **Morgan-Kiss R.M.** (2022) MCMLTER: Ecophysiology of sentinel Chlorophyte taxa in Lake Bonney Antarctica. Poster presented at the LTER All Science Meeting, Asilomar, CA
15. *Krzysiak B.\*\** and **Morgan-Kiss R.M.** (2022) MCMLTER: The role of cell aggregation in phytoplankton-bacteria interactions. Poster presented at the LTER All Science Meeting, Asilomar, CA
16. *Stahl-Rommel S.\*\**, *Kalra I.\*\**, *D’Silva S.\**, *Hahn M.\**, *Popson D.\*\**, *Cvetkovska M.* and **Morgan-Kiss R.M.** (2021) Cyclic electron flow and ascorbate pathway activity provide constitutive photoprotection for the photopsychrophile, *Chlamydomonas* sp. UWO241 (renamed *Chlamydomonas priscuii*) Poster presented at DOE PI Meeting, Washington, D.C.

17. *D'Silva S.\** and **Morgan-Kiss R.M.** (2021) High light response and recovery in the extremophile, *Chlamydomonas* sp. UWO241. Poster presented at American Society of Microbiologists, Ohio Branch
18. *Ortiz-Celemin G.\*, Kirby H.\*, D'Silva\* S., Qiu Y.\*, Kurtzer L.\*, Loncar, H.\*, Brown A.\*, Spencer M.\*, Thompson V.\*, Smelcer L.\*, Lewis P.\*\*\*, Powell, T.\*\*\*, Pereira R.\*\*\*, Sheldon P.\*\** and **Morgan-Kiss R.M.** (2021) MBI475 & MBI475: 12 virtual research posters presented at Undergraduate Research Forum, Miami University, OH.
19. *D'Silva S.\**, *Kalra I.\*\**, *Mills A.\*\** and **Morgan-Kiss R.M.** (2020) Acclimation of an Antarctic alga to environmental stress. Virtual poster presented at Midwest Photosynthesis Meeting.
20. **Morgan-Kiss R.M.** (2012) Cyclic electron flow and ascorbate pathway play a role in survival of *Chlamydomonas* sp. UWO241 to long-term photooxidative stress. Virtual poster presented at Midwest Photosynthesis Meeting.
21. **Morgan-Kiss R.M.**, *Cortada X.*, *Aste I.\**, *Carafiello L.\**, *Chalke A.\**, *Humphrey O.\**, *Jeffers E.\**, *Mignery J.\**, *Papamarcos M.\**, *Prochazka C.\*\**, *Sheldon P.\*\**, *Stafford S.\**, *Wagner M.\**, *Sherwell S.\*\** and *Ghmire S.\*\** (2019) MBI475 & MBI575: Art Informing Science: Science Informing Art. Class poster presented at Undergraduate Research Forum, Miami University, OH.
22. *Mignery M.\**, *Wagner J.\**, *Stafford S.\**, *Aste I.\**, *Chalke A.\**, *Jeffers E.\**, *Papamarcos C.\**, *Humphrey O.\**, *Carafiello L.\**, *Sheldon P.\*\**, *Prochazka C.\*\**, *Sherwell S.\*\**, *Ghmire S.\*\** and **Morgan-Kiss R.M.** (2019) MBI475 & MBI 575: 4 research posters presented at the Undergraduate Research Forum, Miami University, OH.
23. *Cariani Z.\*\** and **Morgan-Kiss R.M.** (2018) Antarctic Photoautotrophs and Mixotrophs Exhibit Differential Strategies for Surviving Mimicked Polar Night. Poster presented at American Society for Limnology and Oceanography, University of Victoria, Canada.
24. *Sherwell S.\*\**, *Cariani Z.\*\** and **Morgan-Kiss R.M.** (2018) Phytoplankton Response to Disturbance in Ice-Covered Lakes in the McMurdo Dry Valleys. Poster presented at LTER All Science Meeting, Asilomar Conference Center, CA.
25. *Kalra I.\*\**, *Wang X.* and **Morgan-Kiss R.M.** (2018) Formation of PSI Supercomplexes Promote Sustained CEF during Long-Term Stress Acclimation. Poster presented at American Society of Plant Biology, Montreal, Canada.
26. *Kalra I.\*\**, *Cariani Z.\*\**, *Wang X.* and **Morgan-Kiss R.M.** (2018) Specialization vs. physiological plasticity in the McMurdo Dry Valley Lakes. Poster presented at LTER All Science Meeting, Asilomar Conference Center, CA.
27. **Morgan-Kiss R.M.**, *Kalra I.\*\**, *Wang X.*, *Kiss A.* (2018) Photopsychrophiles: Untapped Resources for Improved Photosynthesis and Bioenergy Applications. Poster presented at International Society for Photosynthesis Research, Montreal, Canada.
28. *Lawson C.\**, *Simon J.\**, *Creber J.\**, *Everson K.\**, *Rub J.\**, *Brown K.\**, *Wilson S.\**, *Pham N.\**, *Jones D.\**, *Smith Z.\**, *Graham S.\**, *Carter M.\**, *Hiner S.\**, *Keller B.\**, *Carter M.\**, *Wilkins K.\**, *Hiner S.\**, *Woodruff A.\**, *Bolen Z.\**, *Horan C.\**, *Ising N.\**, *Li W.\*\**, *Teufel A.\*\**, **Morgan-Kiss R.M.** (2017) MBI 475 & MBI 350: 9 research posters presented at the Undergraduate Research Forum, Miami University, OH.
29. *Keller B.\** and **Morgan-Kiss R.M.** (2017) SEA Miami: Determining Factors for Copepod Pigmentation in the Waters Surrounding Puerto Rico - Ultra-Violet Radiation versus Predation. Poster presented at Ohio Branch American Society of Microbiologists, Oberlin College, OH.
30. *Trimboli J.\**, *Frankhouser R.\** and **Morgan-Kiss R.M.** (2017) SEA Miami: Impact of Light Availability on Depth of Maximum Chlorophyll a. Poster presented at Ohio Branch American Society of Microbiologists, Oberlin College, OH.
31. *Wilkins K.\** and **Morgan-Kiss R.M.** (2017) SEA Miami: Factors Affecting Zooplankton Bio-Density. Poster presented at Ohio Branch American Society of Microbiologists, Oberlin College, OH.
32. *Lanoue A.\**, *Papamarcos M.\** and **Morgan-Kiss R.M.** (2017) SEA Miami: Trends in Chlorophyll-a and Dissolved Oxygen Saturation in the Water Column. Poster presented at Ohio Branch American Society of Microbiologists, Oberlin College, OH.
33. *Kalra I.\*\** and **Morgan-Kiss R.M.** (2017) Effect of long-term salinity stress on *Chlamydomonas* species. Poster presented at Gordon Conference: Photosynthesis, Sunday River, ME.

34. Cook G.\*\* and **Morgan-Kiss R.M.** (2017) Antarctic *Chlamydomonas* strains C. sp. UWO241 and ICE-MDV Exhibit Differential Restructuring of the Photosynthetic Apparatus in Response to Iron. Poster presented at Gordon Conference: Photosynthesis, Sunday River, ME.
35. Cariani Z.\*\* and **Morgan-Kiss R.M.** (2017) Adaptation of Antarctic *Chlamydomonas* to the Polar Night Involves Adjustments to the Photochemical Apparatus and Stored Carbon Reserves. Poster presented at Gordon Conference: Photosynthesis, Sunday River, ME.
36. Cook C.P.\*\* and **Morgan-Kiss R.M.** (2016). Antarctic *Chlamydomonas* spp. Exhibit Differential Restructuring of the Photosynthetic Apparatus in Response to Iron. Poster presented at Midwest Photosynthesis Meeting, Turkey Run State Park, IN.
37. Kalra I.\*\* and **Morgan-Kiss R.M.** (2016) Long-term acclimation to salinity stress leads to attenuated state transition response in *Chlamydomonas* sp. UWO241. Poster presented at Midwest Photosynthesis Meeting, Turkey Run State Park, IN.
38. Li W.\*\*, Podar M. and **Morgan-Kiss R.M.** (2015) Diversity, metabolic versatility and potential interactions of microbial eukaryotes (protists) residing in ice-covered Antarctic lakes. Talk presented at ASLO Aquatic Science Meeting, Granada, Spain.
39. Teufel A.G.\*\*, Li W.\*\* and **Morgan-Kiss R.M.** (2015) Impact of mimicked summer flood events (nutrient amendment) on microbial communities residing in two chemically stratified Antarctic lakes. Poster presented at ASLO Aquatic Science Meeting, Granada, Spain. *Travel & best poster awards.*
40. **Morgan-Kiss R.M.**, Stahl S.\*\* and Kiss A.J. (2015) Photooxidative Stress Response in Mesophilic and Psychrophilic Algal Strains of *Chlamydomonas Raudensis*: Linking Transcriptomics with Comparative Physiology. Invited talk presented at ASLO Aquatic Science Meeting, Granada, Spain.
41. Hahn M.\*, Teufel A.\*\* and **Morgan-Kiss R.M.** (2015) Climate Change and the Effect Of Nutrient Amendment on Two Antarctic Algal Species: *Isochrysis* sp. and *Chlamydomonas* ICE-MDV. Poster presented at Ohio Branch of American Society of Microbiologists Branch Meeting.
42. Cook G.\*\*, Kalra I.\*\*, Stahl S.\*\*, Kiss A.J. and **Morgan-Kiss R.M.** (2015) Adaptation to Permanent Environmental Stress in the Antarctic Alga *Chlamydomonas Raudensis*: a Study of a Non-Model Photosynthetic Organisms. Poster presented at the Meeting of the American Society of Plant Biologists, Danforth Plant Science Center.
43. **Morgan-Kiss R.M.** (2014) The Antarctic *Chlamydomonas raudensis*: a case for advances in understanding photosynthetic stress adaptation in non-model organisms. Plenary talk and Session Chair at 16<sup>th</sup> International Conference on the Cell and Molecular Biology of *Chlamydomonas*, Pacific Grove, CA.
44. Ketchum N.\*\*, Bollmann A. and **Morgan-Kiss R.M.** (2013) Influence of photosynthetic protists on the community composition of enrichment cultures from an Antarctic Lake. Poster at International Conference on Polar & Alpine Microbiology, Big Sky, MT.
45. Stahl S.\*\*, Kiss A. and **Morgan-Kiss R.M.** (2013) Photooxidative stress response in mesophilic versus psychrophilic *Chlamydomonas* spp. Poster at International Conference on Polar & Alpine Microbiology, Big Sky, MT.
46. Dolhi J.M.\*\* and **Morgan-Kiss R.M.** (2013) Carbon fixation in cold environments: RubisCO enzyme activity of microbial communities in McMurdo Dry Valley Lakes, Antarctica. Poster at International Conference on Polar & Alpine Microbiology, Big Sky, MT (*NASA student travel award*).
47. Li W.\*\*, Edelman R. and **Morgan-Kiss R.M.** (2013) Molecular and morphological characterization of microbial eukaryotes (protists) residing in ice-covered Antarctic Lakes. Poster at International Conference on Polar & Alpine Microbiology, Big Sky, MT.
48. Siebenaler A.G.\*\*, Obryk M., Doran P. and **Morgan-Kiss R.M.** (2013) Characterization of Antarctic algae and their response to a diel (day/night) light cycle. Poster at International Conference on Polar & Alpine Microbiology, Big Sky, MT.
49. **Morgan-Kiss R.M.**, Dolhi J.M.\*\*, Stahl S.\*\*, Raymond J.A. and Kiss A. (2013) The Antarctic *Chlamydomonas raudensis*: an emerging model for cold adaptation of photosynthesis. Invited talk presented at 5<sup>th</sup> International Conference on Polar & Alpine Microbiology, Big Sky, MT.
50. **Morgan-Kiss R.M.**, Bollmann A., Owens S. and Gilbert J. (2013) Wharton Tribute: Differential enrichment of algae-bacteria consortia from chemically stratified Antarctic Lakes. Oral presentation at ASLO Aquatic



Sciences Meeting, New Orleans, LA.

### Invited seminars (>2012 only)

51. **Morgan-Kiss R.M.**, Popson D.\*\*, Wang X., Fromme P., Chiu W. and Zhang R. (2023) Dynamics and consequences of PSI supercomplexes. Talk, DOE Photosynthetic Systems Meeting, Rockville, MD
52. **Morgan-Kiss R.M.** (2022) Tiny plants and animals of the McMurdo Dry Valleys Lakes. Sunday Science Lecture, McMurdo Station, Antarctica
53. **Morgan-Kiss R.M.** (2022) Antarctic phytoplankton and bacteria from near surface waters exhibit high sensitivity to climate-driven disturbance. SIL100: 36<sup>th</sup> Congress of the International Society of Limnology, Berlin, Germany
54. **Morgan-Kiss R.M.** (2022) Survival and distribution of tiny plants and animals in Antarctic lakes: a mash-up of lab- and field-based science. Invited talk, Montana State University, MT
55. **Morgan-Kiss R.M.** (2021) The phytoplankton of Antarctic McMurdo Dry Valley lakes: diversity, genomics and photobiology. British Phycological Society
56. **Morgan-Kiss R.M.** (2019) Regulation of sustained cyclic electron flow in the photopsychrophile *Chlamydomonas* sp. UWO241. DOE Photosynthetic Systems PI Meeting, Gaithersburg, MD
57. **Morgan-Kiss R.M.** (2017) The Antarctic lake alga, *Chlamydomonas* sp. UWO241, possesses a reorganized photosynthetic apparatus to support rewired metabolism. Korean Polar Research Institute, South Korea
58. **Morgan-Kiss R.M.** (2016) Diversity, distribution and metabolic agility of microbial eukaryotes residing in the McMurdo Dry Valleys, Antarctica. Invited Talk, McMurdo LTER Principle Investigator Meeting, Baton Rouge
59. **Morgan-Kiss R.M.** (2016) The Biology of the McMurdo Dry Valleys: role of eukaryotes. Invited Talk, LTER Science Council Meeting, Santa Barbara
60. **Morgan-Kiss R.M.** (2016) Diverse roles of Microbial Eukaryotes (Protists) in Chemically stratified, ice-covered Antarctic lakes (McMurdo Dry Valleys). University of Tennessee, Knoxville
61. **Morgan-Kiss R.M.** (2014) Diversity and trophic versatility of microbial eukaryotes residing in chemically stratified Antarctic Lakes. EGGs Lecture Series, Department of Geosciences, Princeton University.
62. **Morgan-Kiss R.M.** (2014) Antarctic Microbial Eukaryotes – Diversity and Function. Invited Talk, Tibetan Plateau Institute, Beijing, China.
63. **Morgan-Kiss R.M.** (2014) Microbial Adventures in Antarctica. Biology Seminar Series. Kenyon College & East Fort Knox High School.

### Workshops, Conference Organizer

2023, Chair & Organizer, The Priscui Workshop, Miami University, Ohio, USA

2022, Session Chair, Society for Limnology 100<sup>th</sup> Anniversary, Berlin, Germany

2022, Workshop Organizer, The SenTAX Workshop: Surveillance of Sentinel Taxa Across LTER Sites. LTER All Science Meeting, Asilomar, California, USA

2016, Rapporteur, Environmental Assessment of the McMurdo Dry Valleys: Witness to the Past and Guide to the Future

2014, Advisory Committee & Session Chair: 16<sup>th</sup> International Conference on the Cell and Molecular Biology of *Chlamydomonas*

2014, Advisory Committee & Session Chair: 6<sup>th</sup> International Conference on Polar Biology

2013, Advisory Committee & Session Chair: 5<sup>th</sup> International Conference on Polar Biology.

### External Research Grants

1. 2023-2029 National Science Foundation Long Term Ecological Research: LTER- Ecosystem response to amplified landscape connectivity in the McMurdo Dry Valleys, Antarctica (*Renewal Award*). PI: Michael Gooseff [U Colorado Boulder] Total: \$7.8M. **\$541K to RMK (Co-PI)**.
2. 2022-2025 Department of Energy Photosynthetic Systems Collaborative Research: Collaborative Research – Dynamics and Consequences of Photosystem I Supercomplexes (*Renewal Award*). Total: \$960K. **\$289 to RMK (PI)**.

3. 2023-2025 Chilean Antarctic Institute (INACH): Unveiling the biotechnological potential and phylogenomics of two new psychrophilic *Chlamydomonas*. PI: Catherine Ribeiro [Universidad Mayor, Chile].
4. 2022 Proctor & Gamble: Exploratory study on microalgae as a source of antimicrobials. Total: \$10K
5. 2020-2023 National Science Foundation Office of Polar Programs: ANT LIA: Collaborative Research: Genetic underpinnings of microbial interactions in chemically stratified Antarctic lakes. PI: Brandon Briggs [U Alaska Anchorage]. Total: \$1.0M. **\$307K to RMK (Co-PI)**.
6. 2018-2021 Department of Energy Photosynthetic Systems: Collaborative Research- Regulation of sustained Cyclic Electron Flow (CEF) in the photopsychrophile *Chlamydomonas* sp. UWO241. Total: \$750K. **\$320K to RMK (PI)**.
7. 2017-2023 National Science Foundation Long Term Ecological Research: LTER- Ecosystem response to amplified landscape connectivity in the McMurdo Dry Valleys, Antarctica.; PI: Michael Gooseff [U Colorado Boulder], Total: \$6.8M. **\$305K to RMK (Co-PI)**.
8. 2015 Joint Genome Institute Community Sequencing Program. Cyanobacterial communities of Antarctic Lake Fryxell liffert mats and glacier meltwater ~\$25K in kind.
9. 2011-2016 National Science Foundation Office of Polar Programs: CAREER: Protist Nutritional Strategies in Permanently Stratified Antarctic Lakes. Total: **\$659K to RMK (PI)**.
10. 2007-2010 National Science Foundation Office of Polar Programs: Collaborative Research: IPY-Plankton dynamics in the McMurdo Dry Valley lakes during the transition to Polar Night. Total: \$400K; PI: John Prisco [Montana State U]. **\$71K to RMK (Co-PI)**.

#### Internal Research Grants

1. 2023 Strategic Investment Fund: Graduate research assistantship and equipment funding (BBE AlgaeLabAnalyser) \$50K
2. 2023 Research Instrumentation Opportunity: Purchase of three Photobioreactors (Photon System International FMT 150/400RB) to expand capability of the Algae Farm. \$32K
3. 2023 Strategic Investment Fund: Equipment funding (JTS-150 Photocatalysis Spectrometer) \$40K
4. 2015 Student Tech Fee Competition: Acquisition of Multi-Cultivator bioreactors to support cross-disciplinary training and education in bioenergy and biofuels. \$23K
5. 2014 Committee on Faculty Research Program: Physiological and Molecular Characterization of High Oil Body Phenotype in the Model Antarctic Alga, *Chlamydomonas raudensis* UW0241.
6. 2008 Committee on Faculty Research Program: Resistance to Oxidative Stress in Cold-Adapted Green Algae

#### Synergistic Activities

Long Term & Renewable Research Projects: [1] I have been a Co-PI on the McMurdo Long Term Ecological Research Program (MCM LTER, [www.mcmlter.org](http://www.mcmlter.org)) since 2017. The MCM LTER has been continuously funded by NSF since 1993 and through 2029. I serve as the lead PI on the project for Lake Science (co-led with C. Takacs-Vesbach), Community Sequencing, and Outreach & Education. [2] I am the lead PI on a renewable project funded by DOE Photosynthetic Systems involving 5 institutions (Miami U, Plant Danforth Science Center, Arizona State U Biodesign Institute, Stanford U SLAC National Accelerator Laboratory) which has been funded since 2017 and through 2025.

Graduate Studies: I have served as the Graduate Director for the Department of Microbiology since 2021. During my tenure, I accomplished the following major tasks: [1] significant updates to the Graduate Handbook and Graduate Survival Guide, [2] updates to student learning outcomes and conversion of all evaluation/assessment forms to digital formats, and [3] development of a handbook and course plan for the combined BS/MS degree.

Student Mentoring and Training: I have mentored 18 graduate students and > 40 undergraduates on independent research projects in my research lab since 2007. In addition, five undergraduate/graduate classes (MBI475/575 2017, 2019, 2021, 2023; MBI350 2017) involving ~70 students have participated in independent research projects and presented research posters at scientific meetings. I have served as a faculty mentor for four undergraduate training programs which target underrepresented groups and/or 1<sup>st</sup> generation college students (First Year

Research Experience, FYRE; Undergraduate Research Mentoring, URM; Research Experiences for Undergraduates, REU; Louis Stokes Alliances for Minority Participation, LSAMPS).

*Grant Reviewing, Panelist, Editorship:* I am a regular ad hoc peer reviewer on many journals in my field. I am on the editorial board of *Frontiers in Microbiology* and *Journal of Phycology*. I have served as an ad hoc grant reviewer for NSF, NASA, National Geographic Society Research, and NZARI. I have served as a review panelist and/or site reviewer for DOE, NSF and NASA.

*K-12 Outreach and Classroom Content:* I mentored a middle school science teacher during the 2022 Antarctic field team. We produced a blog and other science classroom content (<https://www.polartrec.com/expeditions/microbial-interactions-in-antarctic-lakes>). I developed an education module in Polar Data Literacy for middle school teachers (<https://sites.google.com/colorado.edu/polarxp-september21/home?authuser=1>)

### **Graduate and Postdoctoral Advisors and Advisees**

**Thesis/Dissertation Advisor:** Eckhardt Karsten (BS/MS in progress), Benjamin Nagle (BS/MS in progress), Joseph Morgan (BS/MS in progress), Conall McGinness (BS/MS in progress), Kaylie Wheelless (PhD in progress), Dom Marichal (MS in progress), Rochelle Pereira (PhD in progress), Brad Krzysiak (PhD in progress), Devon Popson (PhD in progress), Parnell Sheldon (MS 2021, Instructor W Virginia Northern Community College); Isha Kalra (PhD 2021, Postdoctoral Fellow USC); Shasten Sherwell (MS 2019, Aquatic Biologist, Office of Watershed Management, Quabbin/Ware Region); Zev Cariani (MS 2018; Research Technician); Gregory Cook (MS 2017; Research Technician); Wei Li (PhD 2016; Senior Scientist Lawrence Livermore Lab); Sarah Stahl-Rommel (MS 2014; Space Flight Microbiologist, JES Tech); Amber Teufel (PhD 2016; Microbiologist Proctor & Gamble); Jenna Dolhi-Binder (PhD 2014 Clinical Research Project Manager U Pittsburgh); Sarah Jaffri-Haider (MS 2009; Microbiologist, City of Chicago). **Postgraduate Scholar Sponsor:** Shuxia Yi (2020 – 2022; retired), Weidong Kong (2008-2010, 2013; Professor Institute of Tibetan Plateau Research).