

Maxim Y. Gorbunov
Research Professor
 Institute of Marine and Coastal Sciences
 Rutgers, the State University of New Jersey
 71 Dudley Road, New Brunswick,
 NJ 08901 USA

Phone: 1 (732) 763 8327 Fax: (732) 932 8578
 E-mail: gorbunov@marine.rutgers.edu

EDUCATIONAL HISTORY:

- 1992** **Ph.D.** in Physics and Mathematics, Moscow State University, Moscow, Russia. Ph.D. Thesis: *Diagnostics of Phytoplankton by Pulsed Laser Fluorometry*, Prof. V.V. Fadeev, Advisor.
- 1989** **M.S.** with Honors in Physics and Mathematics, GPE: 4.0 out of 4.0. Moscow State University, Moscow, Russia.

PROFESSIONAL EXPERIENCE:

2013 – present	Research Professor	Rutgers, the State University of New Jersey
2003 - 2013	Associate Research Professor	Rutgers, the State University of New Jersey
2/2004 – 12/04	Senior Scientist	Satlantic Inc., Halifax, Nova Scotia
1998 - 2003	Assistant Research Professor	Rutgers, the State University of New Jersey
1997 - 1998	Assistant Scientist	Brookhaven National Laboratory, New York, USA
1995 - 1997	Research Associate	Brookhaven National Laboratory, New York, USA
1995 - 1995	Post-Doctoral Visitor	Laboratory for Utilization of Synchrotron Radiation, University of Paris, Orsay, France
1994 - 1997	Research Scientist (with tenure)	Moscow State University, Russia
1992 - 1994	Research Associate	Moscow State University, Russia

ACADEMIC AWARDS/HONORS:

Rem Khohlov Award at Moscow State University Competition of Student Theses (1989), International Science Foundation Award for Excellence in Science (1992), International Science Foundation Conference Travel Grants (1993,1994), EARSeL Conference Travel Grant (1993), International Who's Who of Professionals (2002), America's Registry of Outstanding Professionals (2002)

RESEARCH INTERESTS:

biophysics and physiology of photosynthesis, symbiosis, photoreceptors, benthic ecosystems, ocean optics, relationship between physical and biological processes in the ocean, global biogeochemical cycles, remote sensing, instrument development

RESEARCH AND TECHNICAL EXPERTISE: biological oceanography, remote sensing, LIDAR technology, scientific instrumentation, mathematical modeling, laser physics, optics, pico- and femtosecond laser spectroscopy, electronics, quantum electronics, software development.

GRANT SUPPORT:

- 1997 – 2002 Coastal Benthic Optical Properties (CoBOP): “Processes Affecting the Variability of Fluorescence Signals from Benthic Targets in Shallow Waters”, ONR, Co-Investigator.
- 2001 – 2004 “Collaborative Research: Southern Ocean Iron Experiments (SOFeX): Real-time Biophysical Assessment of Iron Limitation of Phytoplankton Photosynthesis in the Open Waters of the Antarctic Ocean”. NSF, Co-Investigator.
- 2003 – 2006 “Analysis of Biophysical, Optical and Genetic Diversity of DoD Coral Reef Communities using Advanced Fluorescence and Molecular Biology Techniques”. DoD/DoE/EPA Strategic Environmental Research and Development Program, Principal Investigator.
- 2003 – 2006 “Impacts of Eddies and Mixing on Plankton Community Structure and Biogeochemical Cycling in the Sargasso Sea”. NSF, Co-Investigator.
- 2003 – 2007 “Time Resolved Photosynthesis Energy Budget Combining Photoacoustics, Fluorescence and Oxygen”. US-Israel BSF, Co-Investigator.
- 2005 – 2008 “Development of fluorescent induction and relaxation systems for the measurement of biomass and primary productivity on Webb Slocum gliders”. Collaborative project (Rutgers, Satlantic, and Webb Research). NOPP, Co-Investigator.
- 2007 – 2012 “The application of lifetime analyses in the upper ocean to the interpretation of satellite-based, solar induced chlorophyll fluorescence signals”. NASA, Principal Investigator.
- 2008 – 2011 “Analysis of Biophysical, Optical and Genetic Diversity of DoD Coral Reef Communities using Advanced Fluorescence and Molecular Biology Techniques – Phase II”. DoD/DoE/EPA Strategic Environmental Research and Development Program, Principal Investigator.
- 2009 – 2011 “Studies of Impact of Climate Change on the Physiological State of Aquatic Photosynthetic Organisms using Advanced Bio-optical Technologies” - U.S. Civilian Research & Development Foundation, Rutgers/Moscow State University collaborative project, Principal Investigator.
- 2010 – 2014 "Bottom-up Reconstruction of Molecular Components of Natural Photosynthesis in a Photoelectrochemical System for Hydrogen Generation", US Air Force - CUNY-Research Foundation, co-PI.
- 2012 – 2015 "Assessing and Monitoring of DoD Coral Reef Communities Using Advanced Fluorescence Techniques". Environmental Security Technology Certification Program (ESTCP), Principal Investigator.
- 2015 “Construction of Advanced Fluorescence Systems for Automatic Measurements of Photoplankton Biomass, Physiology, and Photosynthetic Rates aboard R/V Araon”, Korea Polar Research Institute, Principal Investigator.
- 2016 - “Measuring Chlorophyll Fluorescence Lifetimes in the Global Ocean to Interpret Satellite-Based Solar Induced Fluorescence Yields”, NASA Ocean Biology and Biogeochemistry Program, Principal Investigator.

Post-doctoral fellows: Dr. Fedor Kuzminov, Dr. Hanzhi Lin, Dr. Yael Helman, Dr. Dan Tchernov.

Students: Yonatahn Sherman (Ph.D. student, 2016-); Michael Haas (B.Sc., 2016-, Aresty Honors student); Eunho Ko (Ph.D., 2015-, Korea Polar Research Institute); Elena Nikonova (Ph.D. student, 2016 - , Moscow State University); Filipa Carvalho (Ph.D., 2017); Sophia Johnson (Ph.D., Rutgers, 2013), Paul Bergin (B.Sc., Rutgers, 2015), Fedor Kuzminov (Ph.D., Moscow State University, Visiting Ph.D. student at Rutgers, 2010-2012), Timofey Gostev (Ph.D., Moscow State University, 2012), Chengyi Yan (M.Sc., Rutgers, 2008), Andrea Drzewianowski (M.Sc., U. Maine, 2008), Frank Natale (B.S., Rutgers, 2006), Lisa Warden (B.Sc., G.H. Cook Honors Thesis, 2004), Jennifer Salerno (B.Sc., G.H. Cook Honors Thesis, 2001)

MEMBERSHIP AND SERVICES:

Member, American Society of Limnology and Oceanography; member, American Geophysical Union; member, Optical Society of America;

Member of Editorial Board, Journal of Plankton Research;

Reviewer for NSF and NASA Panels; Reviewer for NSF, NASA, BSF;

Reviewer for "Limnology and Oceanography", "Marine Biology", "Oecology", "Limnology and Oceanography: Methods", "Proceedings of the Royal Society: Biological Sciences", "European Journal of Phycology", "Journal of Plankton Research", "Scientific Reports", "E. J. Biotechnology", "Phycologia", "Functional Plant Biology", "Frontiers in Marine Sciences", "Applied Optics", "Science", "Current Biology", "Coral Reefs", "Optics Express", "Marine Ecology Progress Series", "Proceedings of the National Academy of Sciences", "Biofouling", "Deep Sea Research", PLOS One.

CRUISE/EXPEDITION EXPERIENCE:

-	Kamchatka river	August 1989
R/V Vityaz	North-western Atlantic	March-July 1990
R/V Moscow University	Mediterranean Sea	April-May 1991
R/V Yuzhmorgeologia	Black Sea	August 1991
R/V Endeavor	Middle Atlantic Bight	March 1996
R/V Seward Johnson	Middle Atlantic Bight	July-August 1996
CoBOP Field Experiments	Lee Stocking Island, Bahamas	1998-2001 (3 months overall)
R/V Polarstern	EisenEx cruise, Southern Ocean	Oct.-Dec. 2000
R/V Melville	SOFEX cruise, Southern Ocean	January-February 2002
EarthWatch expedition	Lizard Island Research Station, Australia	May-June 2002
SERDP Field Experiment	Hawaii Institute of Marine Biology	November 2003
R/V Oceanus	EDDIES experiment, Bermuda	July 2004
R/V Atalante	BIOCOPE cruise	Oct-Dec 2004
R/V Oceanus	Trans-Atlantic cruise	August-September 2008
SERDP Field Experiment	Mott Research Lab, Florida Keys	June 2010
SERDP Field Experiment	Hawaii Institute of Marine Biology	July 2010
R/V Akademik Ioffe	North Atlantic	September 2010
SERDP/ESTCP Field Experiment	Hawaii Institute of Marine Biology	July 2013, July 2014
R/V Araon	North-Western Pacific	July 2017

SELECTED PUBLICATIONS

1. **Gorbunov M.Y.**, Fadeev V.V., and Chekalyuk A.M. (1991) Method of remote laser monitoring of photosynthesis efficiency in phytoplankton. - *Moscow University Physics Bulletin*. **46**(6): 59-65.
2. **Gorbunov M.Y.**, Fadeev V.V., and Chekalyuk A.M. (1992) The use of laser saturation fluorometry for the study of mechanisms of chlorophyll a fluorescence build-up in phytoplankton under condition of mineral nutrition shortage - *Moscow University Physics Bulletin* **47**(4): 47-53.
3. **Gorbunov M.Y.**, and Chekalyuk A.M. (1992) Mechanisms of light control of the quantum yield of *in situ* phytoplankton fluorescence as studied by pulsed laser fluorometry. - *Moscow University Physics Bulletin*, **47**(6): 46-52.
4. Bunin D.K., **Gorbunov M.Y.**, Fadeev V.V., and Chekalyuk A.M. (1992) Emission of fluorescence from chlorophyll-a *in vivo* due to nanosecond pulsed laser excitation. - *Sov. J. Quantum Electron.*, **22**(5): 381-383.
5. Bunin D.K., **Gorbunov M.Y.**, Klimov D.V., Chekalyuk A.M., Chechendaev A.V. and Uvenkov Ya.V. (1993) Remote laser monitoring of phytoplankton and organic admixtures in the Black Sea coastal zone - *Izvestia Akademii Nauk, Fizika atmosfery i okeana*, **29**(1): 131-139.
6. Chekalyuk A.M., and **Gorbunov M.Y.** (1995) Development of the LIDAR pump-and-probe technique for remote measuring the efficiency of primary photochemical reactions in leaves of green plants. - *EARSeL Advances in Remote Sensing*, **3**(3), 42-56.
7. Chekalyuk A.M., Demidov A.A., Fadeev V.V. and **Gorbunov M.Y.** (1995) LIDAR monitoring of phytoplankton and organic matter in the inner seas of Europe. - *EARSeL Advances in Remote Sensing*, **3**(3), 131-139.
8. Cerovic Z.G., Goulas Y., **Gorbunov M.**, Briantais J-M., Camenen L., and Moya I. (1996) Fluorosensing of water-stress in plants: Diurnal changes of the mean lifetime and yield of chlorophyll fluorescence, measured simultaneously and at distance with a τ -LIDAR and a modified PAM-fluorometer, in Maize, Sugar Beet and Kalanchoe. - *Remote Sensing of Environment*, **58**(3): 311-321.
9. **Gorbunov M.Y.**, Kolber Z., and Falkowski P.G. (1999) Measuring photosynthetic parameters in individual algal cells by Fast Repetition Rate fluorometry. - *Photosynthesis Research*, **62**(2-3): 141-153.
10. **Gorbunov M.Y.**, Falkowski P.G. and Kolber Z. (2000) Measurement of photosynthetic parameters in benthic organisms *in situ* using a SCUBA-based fast repetition rate fluorometer. - *Limnol. Oceanogr.*, **45**(1):242-245.
11. Lombardi, M.R., M.P. Lesser and **M.Y. Gorbunov** (2000) Fast repetition rate (FRR) fluorometry: variability of chlorophyll-a fluorescence yields in colonies of the corals, *Montastraea faveolata* (w.) and *Diploria labyrinthiformes* (h.) recovering from bleaching - *J. Exp. Mar. Biol. Ecol.*, **252**:75-84.
12. **Gorbunov M.Y.**, Z. Kolber, M.P. Lesser, and P.G. Falkowski P.G. (2001) Photosynthesis and photoprotection in symbiotic corals. - *Limnol. Oceanogr.*, **46**(1):75-85.
13. Lesser M.P. and **M.Y. Gorbunov** (2001) Diurnal and bathymetric changes in chlorophyll fluorescence yields of reef corals measured in situ with a fast repetition rate fluorometer – *Mar. Ecol. Prog. Ser.*, **212**:69-77.
14. **Gorbunov M.Y.**, Falkowski P.G. and Kolber Z. S. (2001) Primary productivity and photosynthetic response of phytoplankton to iron enrichment in the Southern Ocean – *The Reports on Polar and Marine Research*, **400**: 199-209.

15. **Gorbunov M.Y.** and Falkowski P.G. (2002) Photoreceptors in the cnidarian hosts allow symbiotic corals to sense blue moonlight. – *Limnol. Oceanogr.*, **47**: 309-315.
16. Gervais, F., Riebesell U., and **Gorbunov M.Y.** (2002) Changes in primary productivity and chlorophyll a in response to iron fertilization in the Southern Polar Frontal Zone. - *Limnol. Oceanogr.*, **47**: 1324-1335.
17. Mazel C.H., Lesser M.P., **Gorbunov M.Y.**, Barry T.M., Farrell J.H., Wyman K.D., and Falkowski P.G. (2003). Green-fluorescent protein in Caribbean corals. – *Limnol. Oceanogr.*, **48**: 402-411.
18. Levy O., Dubinsky Z., Schneider K., Achituv Y., Zakai D., and **Gorbunov M.Y.** (2004) Diurnal hysteresis in coral photosynthesis - *Mar. Ecol. Prog. Ser.*, 268: 105-117.
19. K.H. Coale, K.S. Johnson, F.P. Chavez, K.O. Buesseler, R.T. Barber, M.A. Brzezinski, W.P. Cochlan, F.J. Millero, P.G. Falkowski, J.E. Bauer, R.H. Wanninkhof, R.M. Kudela, M.A. Altabet, B.E. Hales, T. Takahashi, M.R. Landry, R.R. Bidigare, X.Wang, Z.Chase., P.G. Strutton, G.E. Friederich, M.Y. Gorbunov, V.P. Lance, A.K. Hilting, M.R. Hiscock, M.Demerest, W.T. Hiscock, K.A. Sullivan, S.J. Tanner, R. M. Gordon, C.L. Hunter, V.A. Elrod, S.E. Fitzwater, S. Tozzi, M. Koblizek, A.E. Roberts, J. Herndon, J. Brewster, N. Ladizinsky, G. Smith, D. Cooper, D. Timothy, S.L. Brown, K.E. Selph, C.C. Sheridan, B.S. Twining, and Z.I. Johnson (2004) - Southern ocean iron enrichment experiment: Carbon cycling in high- and low-Si waters. – *Science*, **304** (5669): 408-414.
20. Tchernov D., **Gorbunov M.Y.**, de Vargas C., Vardi A., Hagglom M., and Falkowski P.G. (2004) Membrane lipids of symbiotic algae are diagnostic of sensitivity to thermal bleaching in corals. – *Proc Nat Acad Sci USA*, 10.1073/pnas.0402907101, Aug 30, 2004.
21. Lesser M.P., Mazel C.H., **Gorbunov M.Y.**, and Falkowski P.G. (2004). Discovery of Symbiotic Nitrogen-Fixing Cyanobacteria in Corals – *Science*, 305: 997-1000.
22. Falkowski PG, Koblizek M., **Gorbunov M**, and Kolber Z., 2004. Development and Application of Variable Chlorophyll Fluorescence Techniques in Marine Ecosystems. In: “Chlorophyll a Fluorescence: A signature of Photosynthesis” (Eds. C.Papageorgiou and Govindjee), Springer, pp. 757-778.
23. van Oijen T, Veldhuis MJW, **Gorbunov MY**, Nishioka J, van Leeuwe MA, de Baar HJW (2005) Enhanced carbohydrate production by Southern Ocean phytoplankton in response to in situ iron fertilization. – *Marine Chemistry*, **93**(1): 33-52.
24. H. de Baar, PW Boyd, KH Coale, MR Landry, A Tsuda, P Assmy, DCE Bakker, Y Bozec, RT Barber, MA Brzezinski, KO Buesseler, M Boyé, PL Croot, F Gervais, MY Gorbunov, PJ Harrison, WT Hiscock, P Laan, C Lancelot, C Law, M Levasseur, A Marchetti, FJ Millero, J Nishioka, Y Nojiri, T van Oijen, U Riebesell, MJA Rijkenberg, H Saito, S Takeda, KR Timmermans, MJW Veldhuis (2005) Synthesis of 8 Iron Fertilization Experiments: from the Iron Age in the Age of Enlightenment – *J Geophys. Res.-Oceans*, 110 (C9): Art. No. C09S16 SEP 28 2005
25. S. Bonnet, C. Guieu, F. Bruyant, O. Prasil, F Van Wambeke, P Raimbault, T Moutin, C. Grob, **MY Gorbunov**, JP Zehr, SM Masquelier, L Garczarek, and H Claustre (2008) Nutrient limitation of primary productivity in the Southeast Pacific - *Biogeosciences*, 5, 215–225
26. TS Bibby, **MY Gorbunov**, KW Wyman, PG Falkowski (2008) - Photosynthetic community responses to upwelling in mesoscale eddies in the subtropical North Atlantic and Pacific Oceans. – *Deep Sea Res. II*, 55:10-13, pp. 1310-1320.
27. Helman, Y., F. Natale, R.M. Sherrell, M. LaVigne, V. Starovoytov, **M.Y. Gorbunov**, P.G. Falkowski (2008) - Extracellular matrix production and calcium carbonate precipitation by coral cells in vitro. - *Proc. Natl. Acad. Sci USA*, 105: 54-58.

28. M Vittadello, **MY Gorbunov**, DT Mastrogiovanni, LS Wielunski, EL Garfunkel, M Sugiura, A Safari, P. Falkowski (2010). Photoelectron Generation by Photosystem II Core Complexes Tethered to Gold Surfaces. – *ChemSusChem*, 3(4): 471 - 475.
29. Johnson-Worrell S. and M Gorbunov (2011). Effects of Sn on the Primary and Secondary Photosynthetic Reactions. - *Int. J. of Sustainable Water and Environmental Systems*, 2(No. 2): 97-102.
30. T.Gostev, F.Kuzminov, V.Fadeev, **M.Gorbunov** (2011) Aqueous Photosynthesizing Organisms Biophotonics: Fluorescent Diagnostic Methods. – *Photonics*, 2: 72-81.
31. Tchernov D., H Kvitt, L Haramaty, TS Bibby, **MY Gorbunov**, H Rosenfeld, and PG Falkowski (2011). Apoptosis and the selective survival of host animals following thermal bleaching in zooxanthellate corals - *Proc. Natl. Acad. Sci USA*, June 14, 2011, vol. 108(24), pp. 9905-9909.
32. Yan C, O Schofield, Z Dubinsky, D Mauzerall, P Falkowski, and **M Gorbunov** (2011) Photosynthetic energy storage efficiency in *Chlamydomonas reinhardtii*, based on microsecond photoacoustics – *Photosynthesis Research*, 108(2-3), pp. 215-224.
33. **Gorbunov M.Y.**, Kuzminov F.I., Fadeev V.V., Dongun Kim J., Falkowski P.G. (2011). A Kinetic Model of Non-Photochemical Quenching in Cyanobacteria – *Biochim. Biophys. Acta: Bioenergetics*, vol. 1807, pp. 1591–1599.
34. Fadeev V. V., **Gorbunov M. Y.**, Gostev T. S. (2012) Studying photoprotective processes in the green alga *Chlorella pyrenoidosa* using nonlinear laser fluorimetry - *Journal of Biophotonics*, 5(7): 502-507.
35. Kuzminov F.I., Karapetyan N.V., Rakhimberdieva M.G., Elanskaya I.V., **Gorbunov M.Y.**, and V.V. Fadeev (2012) Investigation of OCP-Triggered Dissipation of Excitation Energy in PSI/PSII-less *Synechocystis* sp. PCC 6803 Mutant Using Non-Linear Fluorimetry. – *Biochim. Biophys. Acta: Bioenergetics*, v. 1817 (7): 1012–1021.
36. Park J., Park T., Yang E.J., Kim D., **Gorbunov M.Y.**, Kim H-C., Kang S.H., Shin H.C., Lee S.H., and Yoo S. (2013) Early summer iron limitation of phytoplankton photosynthesis in the Scotia Sea as inferred from fast repetition rate fluorometry – *Journal of Geophysical Research: Oceans*, 118: (8): 3795–3806, doi:10.1002/jgrc.20281, 2013.
37. Kuzminov F.I., Brown C.M., Fadeev V.V., and **M.Y. Gorbunov** (2013) Effects of metal toxicity on photosynthetic processes in coral symbionts, *Symbiodinium* spp. – *Journal of Experimental Marine Biology and Ecology*, 446 (2013): 216–227.
38. Thamatrakoln K., Bailleul B., Brown C.M., **Gorbunov M.Y.**, Kustka A.B., Frada M., Joliot P.A., Falkowski P.G., Bidle K.D. (2014) Death-specific protein in a marine diatom regulates photosynthetic responses to iron and light availability - *Proc. Natl. Acad. Sci USA*, vol. 110, no. 50: 20123-20128. doi:10.1073/pnas.1304727110.
39. Bolychevtseva Y.V., F. I. Kuzminov, I. V. Elanskaya, **M. Y. Gorbunov**, N. V. Karapetyan, (2015) Photosystem activity and state transitions of the photosynthetic apparatus in the cyanobacterium *Synechocystis* PCC 6803 mutants with different redox state of the plastoquinone pool. - *Biochemistry*, Vol. 80, No. 1, pp. 50-60.
40. Kuzminov F.I., E.A. Shirshin, **M.Y. Gorbunov**, V.V. Fadeev. (2015) New optical approaches for studying photophysiological parameters of cyanobacteria in situ. - *Fundamental and Applied Hydrophysics*, 8 (1), 41-47.

41. Levitan O., Dinamarca J., Zelzion E., **Gorbunov M.Y.**, and Falkowski P.G. (2015) An RNAi knock-down of nitrate reductase enhances lipid biosynthesis production in the diatom *Phaeodactylum tricornutum* – *Plant J.* 2015 Oct 16. doi: 10.1111/tpj.13052..
42. Kuzminov F.I. and **Gorbunov M.Y.** (2016) Energy dissipation pathways in Photosystem 2 of the diatom, *Phaeodactylum tricornutum*, under high light conditions – *Photosynthesis Res*, 127(2): 219-35.
43. Lin H., Kuzminov F.I., Park J., Lee S.H., Falkowski P.G., and **Gorbunov M.Y.** (2016) The fate of photons absorbed by phytoplankton in the global ocean – *Science*, 351(6270), pp. 264-267.
44. Voloshina O.V., Bolychevtseva Y.V., Kuzminov F.I., **Gorbunov M.Y.**, Elanskaya I.V., and Fadeev V.V. (2016) Photosystem II activity of wild type *Synechocystis* PCC 6803 and its mutants with different plastoquinone pool redox states. – *Biochemistry*, 81 (8), 858-870.
45. Falkowski P.G., Lin H., and **Gorbunov M.Y.** (2017) What limits photosynthetic energy conversion efficiency in nature? Lessons from the oceans – *Phil. Trans. Royal Soc. B*, 372: 20160376. <http://dx.doi.org/10.1098/rstb.2016.0376>
46. Shirshin E.A., Nikonova E.E., Kuzminov F.I., Sluchanko N.N. Elanskaya I.V., **Gorbunov M.Y.**, Fadeev V.V., Friedrich T., and Maksimov E.G. (2017) Biophysical modelling of in vitro and in vivo processes underlying regulated photoprotective mechanism in cyanobacteria – *Photosynthesis Research*, 2017 Sep; 133(1-3): 261-271. DOI: 10.1007/s11120-017-0377-8.
47. Park J., Bailleul B., Lin H., Kuzminov F.I., Yang E.J., Falkowski P.G., Lee S.H., and **Gorbunov M.Y.** (2017) Light availability rather than Fe controls the magnitude of massive phytoplankton bloom in the Amundsen Sea polynyas, Antarctica – *Limnology and Oceanography*, DOI: 10.1002/lno.10565.
48. Carvalho F., **Gorbunov M.Y.**, Oliver M.J., Haskins C., Aragon D., Kohut J., and Schofield O. (2017) Mapping in situ chlorophyll variable fluorescence using autonomous underwater gliders – *Limnol. Oceanogr.: Methods*, in review.
49. Ko E., Park J., Gorbunov M.Y., Yoo S. (2019) Uncertainties in variable fluorescence and ¹⁴C methods to estimate primary productivity: a case study in the coastal waters off the Korean peninsula – *Marine Ecology Progress Series*, 627, 13-31.
50. Levitan O, Chen M., Kuang X., Cheong KY, Jiang J., Banal M., Nambiar N., Gorbunov M.Y. Ludtke S.J., Falkowski P.G., and Dai W. (2019) Structural and Functional Analyses of Photosystem II in the Marine Diatom *Phaeodactylum tricornutum* - *Proc. Natl. Acad. Sci USA*, 116 (35): 17316-17322. <https://doi.org/10.1073/pnas.1906726116>
51. Carvalho F., Fitzsimmons J.N., Couto N., Waite N., Gorbunov M.Y., Kohut J., Oliver M.J., Sherrell R. M., Schofield O. (2019) Testing the Canyon Hypothesis: Evaluating light and nutrient controls of phytoplankton growth in penguin foraging hotspots along the West Antarctic Peninsula - *Limnology and Oceanography*, doi:10.1002/lno.11313
52. JM Buck, J Sherman, CR Bártulos, M Serif, M Halder, J Henkel, A Falciatore, J Lavaud, MY Gorbunov, PG Kroth, PG Falkowski, B Lepetit (2019) Lhcx proteins provide photoprotection via thermal dissipation of absorbed light in the diatom *Phaeodactylum tricornutum* - *Nature Communications* 10 (1), 1-12.