

Maxim Y. Gorbunov, Ph.D.
Associate Research Professor

Institute of Marine and Coastal Sciences, Rutgers, the State University of New Jersey
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EDUCATIONAL HISTORY:

1989 - 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.

1983 – 1989 M.S. with Honors in Physics and Mathematics, GPE: 4.0 out of 4.0. Moscow State University, Moscow, Russia.

PROFESSIONAL EXPERIENCE:

2003 - present	Associate Research Professor	Rutgers University, New Jersey
2004	Senior Scientist	Satlantic Inc., Halifax, NS, Canada
1998 - 2003	Assistant Research Professor	Rutgers University, New Jersey
1997 - 1998	Assistant Scientist	Brookhaven National Laboratory, New York
1995 - 1997	Research Associate	Brookhaven National Laboratory, New York
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 and HONORS:

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

RESEARCH INTERESTS and EXPERTISE:

biophysics and physiology of photosynthesis, photoreceptors, ocean optics, biological oceanography, remote sensing, LIDAR technology, scientific instrumentation, mathematical modeling, laser physics, pico- and femtosecond laser spectroscopy

Five Relevant Publications:

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.

- 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.
- Gorbunov MY**, and Falkowski PG. 2005. Fluorescence Induction and Relaxation (FIRE) Technique and Instrumentation for Monitoring Photosynthetic Processes and Primary Production in Aquatic Ecosystems. In: "Photosynthesis: Fundamental Aspects to Global Perspectives" - Proc. 13th International Congress of Photosynthesis, Montreal, Aug.29 – Sept. 3, 2004. (Eds: A. van der Est and D. Bruce), Allen Press, 2005, V.2, pp. 1029-1031.
- Tchernov D, **Gorbunov MY**, de Vargas C, Yadav SN, Milligan AJ, Haggblom M, Falkowski PG. (2004) Membrane lipids of symbiotic algae are diagnostic of sensitivity to thermal bleaching in corals. – *Proc. Nat. Acad. Sci., U.S.A.*, **101** (37): 13531-13535.
- Coale K.H., 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.

Five Additional Publications

- 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.
- 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.
- Lesser MP, Mazel CH, **Gorbunov MY**, Falkowski PG. (2004) Discovery of symbiotic nitrogen-fixing cyanobacteria in corals. – *Science*, **305** (5686): 997-1000.
- 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.
- 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.