

Name: Mark A. Brzezinski
Academic Title: Professor

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PART I. RESEARCH

Cumulative List of Publications (or Creative Activities)

<u>#</u>	<u>YEAR</u>	<u>TITLE and AUTHORS</u>	<u>PUBLISHER</u>	<u>CATEGORY</u>
1.	1983	A Report on the Macroinvertebrates of the Columbia River Estuary Found in Deposits of Volcanic Ash from the May 18, 1980 Eruption of Mount St. Helens (M.A. Brzezinski, R.L. Holton)	<u>Estuaries</u> 6, pp. 172-175	Article
2.	1985	The Si:C:N Ratio of Marine Diatoms: Interspecific Variability and the Effect of Some Environmental Variables	<u>Journal of Phycol.</u> 21, pp. 347-357	Article
3.	1985	Distribution and Composition of Biogenic Particulate Matter in a Gulf Stream Warm-Core Ring (D.M. Nelson, H.W. Ducklow, G.L. Hitchcock, M.A. Brzezinski, T.J. Cowles, C. Garside, R.W. Gould Jr., T.M. Joyce, C. Langdon, J.J. McCarthy, and C.S. Yentsch)	<u>Deep-Sea Res.</u> 32, pp. 1347-1369	Article
4.	1986	Recovery of Ammonium Nitrogen by Solvent Extraction for the Determination of Relative ¹⁵ N Abundance in Regeneration Experiments (N. Dudek, M.A. Brzezinski, P.A. Wheeler)	<u>Mar. Chem.</u> 18, pp. 59-69	Article
5.	1986	A Solvent Extraction Method for the Colorimetric Determination of Nanomolar Concentrations of Silicic Acid in Seawater (M.A. Brzezinski, D.M. Nelson)	<u>Mar. Chem.</u> 19, pp. 139-151	Article
6.	1987	Colorimetric Determination of Nanomolar Concentrations of Ammonium in Seawater Using Solvent Extraction	<u>Mar. Chem.</u> 20, pp. 277-288	Article
7.	1988	Differential Cell Sinking as a Factor Influencing Diatom Species Competition for Limiting Nutrients (M.A. Brzezinski, D.M. Nelson)	<u>J. Exp. Mar. Biol. Ecol.</u> 119, pp. 179-200	Article
8.	1988	Interactions Between Pulsed Nutrient Supplies and a Photocycle Affect Phytoplankton Competition for Limiting	<u>J. Phycol.</u> 24, pp. 346-356	Article

Nutrients in Long-Term Culture
(M.A. Brzezinski, D.M. Nelson)

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| 9. | 1988 | Vertical Distribution of Ammonium in Stratified Oligotrophic Waters | <u>Limnol. Oceanogr.</u> 33, pp. 1176-1182 | Article |
| 10. | 1989 | Seasonal Changes in the Silicon Cycle Within a Gulf Stream Warm-Core Ring (M.A. Brzezinski, D.M. Nelson) | <u>Deep-Sea Research</u> 36, No. 7, pp. 1009-1030 | Article |
| 11. | 1990 | Kinetics of Silicic Acid Uptake by Natural Diatom Assemblages in Two Gulf Stream Warm-Core Rings (D.M. Nelson, M.A. Brzezinski) | <u>Mar. Ecol. Prog. Ser.</u> 62, pp. 283-292 | Article |

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| 12. | 1990 | Silicon Availability and Cell-Cycle Progression in Marine Diatoms (M.A. Brzezinski, R.J. Olson, S.W. Chisholm) | <u>Mar. Ecol. Prog. Ser.</u> 67, pp. 83-96 | Article |
| 13. | 1992 | Cell-Cycle Effects on the Kinetics of Silicic Acid Uptake and Resource Competition Among Diatoms | <u>J. Plankton Research</u> 14, pp. 1511-1539 | Article |

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| 14. | 1993 | Neutral Lipids as Major Storage Products in Zoospores of the Giant Kelp <i>Macrocystis pyrifera</i> (Phaeophyceae) (M.A. Brzezinski, D.C. Reed, C.D. Amsler) | <u>J. Phycol.</u> 29, pp. 16-23 | Article |
| 15. | 1994 | Silicon Deposition During the Cell Cycle of <i>Thalassiosira weissflogii</i> (Bacillariophyceae) Determined Using Dual Rhodamine 123 and Propidium Iodide Staining (M.A. Brzezinski, D.J. Conley) | <u>J. Phycol.</u> 30, pp. 45-55 | Article |
| 16. | 1994 | Production of High Specific Activity Silicon-32 (D.R. Phillips, M.A. Brzezinski) | U.S. Patent Office, Patent #5,346,678 issued 9/13/94 | Patent |

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| 17. | 1995 | Application of Sephadex to Radiochemical Separations (D.R. Phillips, V.T. Hamilton, D.J. Jamriska, M.A. Brzezinski) | <u>Journal of Radioanalytical and Nuclear Chemistry</u> 195, pp. 251-261 | Article |
| 18. | 1995 | The Annual Silica Cycle in the Sargasso Sea Near Bermuda (M.A. Brzezinski, D.M. Nelson) | <u>Deep-Sea Research I</u> 42, pp. 1215-1237 | Article |

19. 1995 Production and Dissolution of Biogenic Silica in the Ocean: Revised Global Estimates, Comparison with Regional Data and Relationship to Biogenic Sedimentation (D.M. Nelson, P. Tréguer, M.A. Brzezinski, A. Leynaert, B. Queguiner) Global Biogeochemical Cycle 9, pp. 359-372 Article
20. 1995 Analysis of Viability and Cell Types of Macroalgal Protoplasts Using Flow Cytometry (D.A. Coury, M.A. Brzezinski, M. Polne-Fuller, A. Gibor) Journal of Applied Phycology 7, pp. 413-420 Article
21. 1996 Chronic Substrate Limitation of Silicic Acid Uptake Rates in the Western Sargasso Sea (M.A. Brzezinski, D.M. Nelson) Deep-Sea Research 43, pp. 437-453 Article
22. 1996 High Specific Activity Silicon-32 (D.R. Phillips and M. A. Brzezinski) #5,525,318 11 June 1996 Patent
23. 1996 Purification, Recovery and Laser-Driven Fluorination of Silicon from Dissolved and Particulate Silica for the Measurement of Natural Stable Isotope Abundances (C. DeLaRocha, M.A. Brzezinski, M. DeNiro) Analytical Chem. 68, pp. 3746-3750 Article
- 9/96
24. 1996 Silica Production in the Sargasso Sea During Spring 1989 (M.A. Brzezinski, C.A. Kosman) Mar. Ecol. Prog. Ser. 142, pp. 39-45 Article
25. 1997 Diatom Growth and Productivity in an Oligotrophic Midocean Gyre: a 3-yr Record from the Sargasso Sea near Bermuda (D.M. Nelson, M.A. Brzezinski) Limnol. Oceanogr. 42, pp. 473-486 Article
26. 1997 Evaluation of ³²Si as a Tracer for Measuring Silica Production Rates in Marine Waters (M.A. Brzezinski, D.R. Phillips) Limnol Oceanogr. 42, pp. 856-865 Article
27. 1997 Fractionation of Silicon Isotopes by Marine Diatoms During Biogenic Silica Formation (C.L. De La Rocha, M.A. Brzezinski, M.J. DeNiro) Geochimica et Cosmochimica Acta 61, pp. 5051-5056 Article
28. 1997 Silica Production in the Monterey, California, Upwelling System (M.A. Brzezinski, D.R. Phillips, F.P. Chavez, G.E. Friederich, R.C. Dugdale) Limnol Oceanogr. 42, pp. 1694-1705 Article
29. 1997 Silica Cycling Within Marine Snow (M.A. Brzezinski, A.L. Alldredge, L.M. O'Bryan) Limnol Oceanogr. 42, pp. 1706-1713 Article

30. 1998 Silica Production and the Contribution of Diatoms to New and Primary Production in the Central North Pacific (M.A. Brzezinski, T.A. Villareal, F. Lipschultz) Mar. Ecol. Prog. Ser. 167, pp. 89-104 Article
31. 1998 Silicon-isotope composition of diatoms as an indicator of past oceanic change (C.L. De La Rocha, M.A. Brzezinski, M.J. DeNiro, A. Shemesh) Nature 395, pp. 680-683 Article
- 9/98**
32. 1999 Upward transport of oceanic nitrate by migrating diatom mats (T.A. Villareal, C. Pilskalns, M.A. Brzezinski, F. Lipschultz, M. Dennett, G.B. Gardner) Nature 397, pp. 423-425 Article
33. 1999 Neutral lipids in macroalgal spores and their role in swimming (D.C. Reed, M.A. Brzezinski, D.A. Cury, W.M. Graham, R.L. Petty) Marine Biology 133, pp. 737-744 Article
34. 1999 Biological and chemical characteristics of the giant diatom *Ethmodiscus* (Bacillariophyceae) in the central North Pacific gyre (T.A. Villareal, L. Joseph, M.A. Brzezinski, R.F. Shipe, F. Lipschultz, M.A. Altabet) Journal of Phycology 35, pp. 896-902 Article
35. 1999 Inducing phytoplankton iron limitation in iron-replete coastal waters with a strong chelating ligand (D.A. Hutchins, V.M. Franck, M.A. Brzezinski, K.W. Bruland) Limnology and Oceanography 44, pp. 1009-1018 Article
36. 1999 *Rhizosolenia* Mats: An overlooked source of silica production in the open sea (R.F. Shipe, M.A. Brzezinski, C. Pilskalns, T.A. Villareal) Limnology and Oceanography 44, pp. 1282-1292 Article
37. 1999 A study of Si deposition synchrony in *Rhizosolenia* (Bacillariophyceae) mats using a novel Si-32 autoradiographic method (R.F. Shipe, M.A. Brzezinski) Journal of Phycology 35, pp. 995-1004 Article
38. 1999 The chemical form of dissolved Si taken up by marine diatoms (Y. Del Amo, M.A. Brzezinski) Journal of Phycology 35, pp. 1162-1170 Article
39. 1999 New chemical, bio-optical and physical observations of upper ocean response to the passage of a mesoscale eddy off Bermuda (J.D. McNiel, H.W. Jannasch, T. Dickey, D. McGillicuddy, M. Brzezinski, C.M. Sakamoto) Journal of Geophysical Research 104, pp. 15537-15548 Article

40. 2000 Evaluation of sequence variation and selection in the *bindin* locus of the red sea urchin, *Strongylocentrotus franciscanus* (P. Debenham, M.A. Brzezinski, K.R. Foltz) Journal of Molecular Evolution 51, pp. 481-490 Article
41. 2000 A review of the Si cycle in the modern ocean: recent progress and missing gaps in the application of biogenic opal as a paleoproductivity proxy (O. Ragueneau, P. Treguer, A. Leynaert, R.F. Anderson, M.A. Brzezinski, D.J. DeMaster, R.C. Dugdale, J. Dymond, G. Fisher, R. Francois, C. Heinze, E. Maier-Reimer, V. Martin-Jezequel, D.M. Nelson, B. Queguiner) Global and Planetary Change 26, pp. 317-365 Article
42. 2000 Effects of iron and zinc deficiency on elemental composition and silica production by diatoms (C.L. De La Rocha, D.A. Hutchins, M.A. Brzezinski, Y.H. Zhang) Marine Ecology Progress Series 195, pp. 71-79 Article
43. 2000 Genetic structure of populations of the red sea urchin, *Strongylocentrotus franciscanus* (P. Debenham, M.A. Brzezinski, K.R. Foltz, S. Gaines) Journal of Experimental Marine Biology and Ecology 253, pp. 49-62 Article
44. 2000 Micromechanical and structural properties of a pennate diatom investigated by atomic force microscopy (N. Almquist, Y. Del Amo, B.L. Smith, N.H. Thomson, A. Bartholdson, R. Lal, M.A. Brzezinski, P.K. Hansma) Journal of Microscopy 202, pp. 518-532 Article
45. 2000 A first look at the distribution of the stable isotopes of silicon in natural waters (C.L. De la Rocha, M.A. Brzezinski, M.J. DeNiro) Geochimica et Cosmochimica Acta 64, pp. 2467-2477 Article
46. 2000 Silicon metabolism in diatoms: Implications for growth (V. Martin-Jezequel, M. Hildebrand, M.A. Brzezinski) Journal of Phycology 36, pp. 821-840 Article
47. 2000 Iron and silicic acid concentrations regulate Si uptake north and south of the Polar Frontal Zone in the Pacific Sector of the Southern Ocean (V.M. Franck, M.A. Brzezinski, K.H. Coale, D.M. Nelson) Deep-Sea Research Part II-Tropical Studies in Oceanography 47, pp. 3315-3338 Article
48. 2001 The origin of transparent exopolymer particles (TEP) and their role in the sedimentation of particulate matter (U. Passow, R.F. Shipe, A. Murray, D.K. Pak, M.A. Brzezinski, A.L. Alldredge) Continental Shelf Research 21, pp. 327-346 Article

49. 2001 A time-series study of silica production and flux in an eastern boundary region: Santa Barbara Basin, California (R.F. Shipe, M.A. Brzezinski) Global Biogeochemical Cycles 15, pp. 517-531 Article
- 9/2001
- *50. 2001 Silicon dynamics within an intense open-ocean diatom bloom in the Pacific sector of the Southern Ocean (M.A. Brzezinski, D.M. Nelson, V.M. Franck, D.E. Sigmon) Deep-Sea Research II 48, pp. 3997-4018 Article
- *51. 2001 Upper ocean export of particulate organic carbon and biogenic silica in the Southern Ocean along 170°W (K.O. Buesseler, L. Ball, J. Andrews, J.K. Cochran, D.J. Hirschberg, M.P. Bacon, A. Fler, M.A. Brzezinski) Deep-Sea Research II 48, pp. 4275-4297 Article
- *52. 2001 A seasonal progression of Si limitation in the Pacific sector of the Southern Ocean (D.M. Nelson, M.A. Brzezinski, D.E. Sigmon, V.M. Franck) Deep-Sea Research II 48, pp. 3973-3995 Article
- *53. 2001 A novel fluorescent silica tracer for biological silicification studies (K. Shimizu, Y. Del Amo, M.A. Brzezinski, G.D. Stuckey, D.E. Morse) Chemistry and Biology 8, pp. 1051-1060 Article
- *54. 2002 Biogenic silica production rates and particulate organic matter distribution in the Atlantic sector of the Southern Ocean during austral spring 1992 (B. Queguiner, M.A. Brzezinski) Deep-Sea Research II 49, pp. 1765-1786 Article
- *55. 2002 The Si cycle in the Pacific sector of the Southern Ocean: Seasonal diatom production in the surface layer and export to the deep sea (D.E. Sigmon, D.M. Nelson, M.A. Brzezinski) Deep-Sea Research II 49, pp. 1747-1763 Article
- *56. 2002 Vertical budgets for organic carbon and biogenic silica in the Pacific Sector of the Southern Ocean, 1996-1998 (D.M. Nelson, R.F. Anderson, R.T. Barber, M.A. Brzezinski, K.O. Buesseler, Z. Chase, R.W. Collier, M.-L. Dickson, R. Francois, M. Hiscock, S. Honjo, J. Marra, W.R. Martin, R.N. Sambrotto, F.L. Sayles, D.E. Sigmon) Deep-Sea Research II 49, pp. 1645-1674 Article

* Previously Listed as Work in Press

**57.	2002	A switch from Si(OH) ₄ to NO ₃ ⁻ depletion in the glacial Southern Ocean (M.A. Brzezinski, C.J. Pride, V.M. Franck, D.M. Sigman, J.L. Sarmiento, K. Matsumoto, N. Gruber, G.H. Rau, K.H. Coale)	<u>Geophysical Research Letters</u> 29, 10.1029/2001GL014349	Article
**58.	2002	Silicic acid leakage from the Southern Ocean: a possible explanation for glacial atmospheric pCO ₂ (K. Matsumoto, J.L. Sarmiento, M.A. Brzezinski)	<u>Global Biogeochemical Cycles</u> 16, 10.1029/2001GB001442	Article
*59.	2002	Effects of the 1997-1998 El Nino on seasonal variations in suspended and sinking particles in the Santa Barbara Basin (R.F. Shipe, U. Passow, M.A. Brzezinski, W.M. Graham, D.K. Pak, D.A. Siegel, A.L. Alldredge)	<u>Prog. Oceanogr.</u> 54, 105-127	Article
60.	2003	Diminished efficiency in the oceanic silica pump caused by bacteria-mediated silica dissolution (K.D. Bidle, M.A. Brzezinski, R.A. Long, J.L. Jones, F. Azam)	<u>Limnology and Oceanography</u> 48, 1855-1868	Article
**61.	2003	Ratios of Si, C and N Uptake by Microplankton in the Southern Ocean (M.A. Brzezinski, M-L. Dickson, D.M. Nelson, R. Sambrotto)	<u>Deep Sea Research II</u> 50, pp. 619-633	Article
62.	2003	The Balance Between Silica Production and Silica Dissolution in the Sea: Insights from Monterey Bay, California, Applied to the Global Data Set (M.A. Brzezinski, J.L. Jones, K. Bidle, F. Azam)	<u>Limnology and Oceanography</u> 48, pp. 1846-1854	Article
63.	2003	Iron and zinc effects on silicic acid and nitrate uptake kinetics in three high-nutrient, low chlorophyll (HNLC) regions (V.M. Franck, K.W. Bruland, D.A. Hutchins, M.A. Brzezinski)	Marine Ecology Progress Series 252, pp. 15-33	Article
*64.	2003	Atomic force microscopy study of living diatoms in ambient conditions (I.C. Gebeshuber, J.H. Kindt, J.B. Thompson, Y. Del Amo, H. Stachelberger, M.A. Brzezinski, G.D. Stucky, D.E. Morse, P.K. Hansma)	<u>Journal of Microscopy</u> 212, pp. 292-299	Article

** Previously Listed as Work Submitted

** Previously Listed as Work Submitted

Title of citation #58 was previously listed as "Silicic acid 'leakage' from the Southern Ocean as a possible mechanism for explaining glacial atmospheric pCO₂"

* Previously Listed as Work In Press

Title of citation #64 was previously listed as "In vivo nanoscale atomic force microscopy investigation of diatom adhesion properties"

65.	2003	Simulation of upper-ocean biogeochemistry with a flexible-composition phytoplankton model: C, N and Si cycling in the western Sargasso Sea (M. Mongin, D.M. Nelson, P. Pondaven, M.A. Brzezinski, P. Tréguer)	<u>Deep Sea Research I</u> 50, pp. 1445-1480	Article
66.	2003	Theoretical constraints on the uptake of silicic acid species by marine diatoms (A.G. Wischmeyer, Y. Del Amo, M.A. Brzezinski, D.A. Wolf-Gldrow)	<u>Marine Chemistry</u> 82, pp.13-29	Article
67.	2004	Southern Ocean Iron Enrichment Experiment (SOFEX): Carbon Cycling in High- and Low-Si Waters (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. Stratton, 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.J. Smith, D. Cooper, D. Timothy, S.L. Brown, K.E. Selph, C.C. Sheridan, B.S. Twining, Z.I. Johnson)	<u>Science</u> 304, pp. 408-414	Article
68.	2004	Dynamics of silicon metabolism and silicon isotopic discrimination in a marine diatom as a function of pCO ₂ (A.J. Milligan, D.E. Varela, M.A. Brzezinski, F.M.M. Morel)	<u>Limnology and Oceanography</u> 49, pp. 322-329	Article
69.	2004	High-latitude controls of thermocline nutrients and low latitude biological productivity (J.L. Sarmiento, N. Gruber, M.A. Brzezinski, J.P. Dunne)	<u>Nature</u> 427, pp. 56-60	Article
70.	2004	Biological fractionation of silicon isotopes in Southern Ocean surface waters (D.E. Varela, C.J. Pride, M.A. Brzezinski)	<u>Global Biogeochemical Cycles</u> 18:GB1047, doi:10.1029/2003GB002140	Article

LIST OF SELECTED ABSTRACTS AND PRESENTATIONS

<u>#</u>	<u>YEAR</u>	<u>TITLE and AUTHORS</u>	<u>PUBLISHER</u>	<u>CATEGORY</u>
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1. 1982 Distribution and *in situ* Production of Biogenic Silica in a Gulf Stream Warm-Core Ring (D.M. Nelson, M.A. Brzezinski, V.L. Fagerness) EOS 63, p. 52 Abstract
2. 1984 Silicon Limitation and Silicon Cycling in Two Gulf Stream Warm-Core Rings (D.M. Nelson, M.A. Brzezinski) EOS 65, p. 911 Abstract

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3. 1991 Analysis of Macroalgal Protoplasts Using Flow Cytometry (D.A. Coury, M.A. Brzezinski, T. Fujimura, Y.-K. Hong, M. Polne-Fuller, A. Gibor) J. Phycol. 27, p. 17 Abstract
4. 1992 Implications of Cell-Cycle-Stage-Specific Si Uptake for the Kinetics of Si Use by Diatoms ASLO Conference Aquatic Sciences, Santa Fe, New Mexico, February 1992 Abstract
5. 1994 On the Status of Silicon as a Limiting Nutrient to Diatoms in Open-Ocean and Coastal Waters: Evidence From the Sargasso Sea Near Bermuda and the Northern Gulf of Mexico (D.M. Nelson, M.A. Brzezinski, Q. Dortch) EOS 75, pp. 58 Abstract
6. 1994 Quantitative Recovery of Dissolved and Biogenic Silica as SiO₂ (C.L. De La Rocha, M.A. Brzezinski, M.J. DeNiro) EOS 75, pp. 58 Abstract
7. 1994 Silicic Acid as a Limiting Nutrient in the Sargasso Sea Near Bermuda (M.A. Brzezinski, D.M. Nelson) EOS 75, pp. 58 Abstract
8. 1994 Feeding by *Euphausia pacifica* on Marine Snow (L. Dilling, M.A. Brzezinski) EOS 75, pp. 36 Abstract

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9. 1997 Lower Silicic Acid Utilization in the Glacial Southern Ocean Revealed by Silicon Isotope Natural Abundances EOS 78, p. 46 Abstract
10. 1997 Silicon Isotope Ratios in Biogenic Opal as a Paleoproductivity Proxy; The First Results EOS 78, p. 17 Abstract
11. 1998 Plumes and Blooms - An Ocean Color Time-Series Program in the Santa Barbara Channel EOS 79, P. 146 Abstract
12. 1998 Silica Production of Rhizosolenia mats in the Central North Pacific Gyre EOS 79, p. 141 Abstract
13. 1998 Silica Production and the Contribution of Diatoms to New and Primary Production in the Central North Pacific EOS 79, p. 82 Abstract

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14.	1999	Biogenic silica production along the eastern margin of the North Pacific Gyre	American Society of Limnology and Oceanography, Santa Fe, NM	Abstract
15.	1999	Determination of the chemical form of dissolved Si taken up by diatoms	American Society of Limnology and Oceanography, Santa Fe, NM	Abstract
16.	1999	Silicon limitation in the Polar Frontal Zone of the Southern Ocean during Austral Spring and Summer, 1997-1998	American Society of Limnology and Oceanography, Santa Fe, NM	Abstract
17.	1999	New estimates of nitrate fluxes by migrating diatom mats (<i>Rhizosolenia</i> mats)	American Society of Limnology and Oceanography, Santa Fe, NM	Abstract
18.	1999	Rates of Biogenic Silica Production Within an Intense Diatom Bloom at the Antarctic Polar Front at 170°W	American Society of Limnology and Oceanography, Santa Fe, NM	Abstract
19.	1999	The surface-layer silica cycle in the Southern Ocean near 170°W during Austral Spring and Summer 1997-1998	American Society of Limnology and Oceanography, Santa Fe, NM	Abstract
20.	1999	New and Regenerated Nitrogen Production by Phytoplankton Assemblages from a Coastal Upwelling Regime in the Northeastern Pacific: Comparison to Biogenic Silica Production	American Society of Limnology and Oceanography, Santa Fe, NM	Abstract
21.	1999	Rates of Biogenic Silica Production Within an Intense Diatom Bloom at the Antarctic Polar Front at 170°W	Gordon Research Conference on Polar Marine Science	Abstract
22.	1999	The Influence of Iron, Zinc and Dissolved Silicon Availability on Diatom Productivity and Si Uptake along 170°W in the Polar Frontal Zone, Antarctica	Gordon Research Conference on Polar Marine Science	Abstract
23.	1999	Adhesives Made by Benthic Diatoms Studied by in vivo Atomic Force Microscopy	15 th North American Diatom Symposium	Abstract
24.	2000	Vertical Budgets for Organic Carbon and Biogenic Opal in the Pacific Sector of the Southern Ocean, 1996-1998	Brest Symposium on Southern Ocean Dynamics, Brest France	Abstract
25.	2000	Biogenic Silica Production Rates and Particulate Matter Distribution in the Polar Frontal Zone of the Southern Ocean (Atlantic Sector) During Austral Spring 1992	Symposium on Southern Ocean Dynamics, Brest France	Abstract
26.	2000	Biological Control of the Silicon Cycle in the Southern Ocean	Symposium on Southern Ocean Dynamics, Brest France	Abstract
27.	2000	Silicon and Iron Regulation of Silica Production in the Antarctic Polar Frontal Zone along 170°W	American Geophysical Union Ocean Sciences Meeting, San Antonio, TX EOS 80:67	Abstract

28.	2000	Elemental Stoichiometry of Particle Production and Particle Export in the Antarctic Polar Front Region along 170°W Inferred from Nutrient Uptake Rates in Surface Waters	American Geophysical Union Ocean Sciences Meeting, San Antonio, TX EOS 80:200	Abstract
29.	2000	Silicon Isotope Fractionation during Weathering and Soil Formation: Experimental Results	Goldschmidt Conference	Abstract
30.	2000	Effects of the 1997-98 El Niño on suspended and sedimenting particles in Santa Barbara Basin, California	American Geophysical Union Ocean Sciences Meeting, San Antonio, TX EOS 80:132	Abstract
31.	2000	Glacial-Interglacial Variability in the Stable Isotopic Composition of Diatomaceous Silica in the Southern Ocean (Antarctic Zone):2 to 300 kyr BP	American Geophysical Union, San Francisco	Abstract
32.	2001	Effect of iron on Si and N uptake kinetics in shipboard bottle enrichment experiments	American Society of Limnology and Oceanography	Abstract
<u>9/2001</u>				
33.	2002	Natural variations in silicon isotope abundances as indicators of silica production in the Southern Ocean (D.E. Varela, C.J. Pride, M.A. Brzezinski, M.J. DeNiro)	Ocean Sciences Meeting, Honolulu, HI. Meeting of the American Society of Limnology and Oceanography/The Oceanography Society in Honolulu, HI	Abstract
34.	2002	M.A. Brzezinski. Response of diatom biomass and silica production to iron fertilization during SOFeX. Talk.	Fall meeting of the American Geophysical Union, 6-10 December 2002 in San Francisco.	Abstract
35.	2003	Population dynamics of microbes in a discrete world: Direct numerical simulations of phytoplankton competition (with D.A. Siegel, B.E. Langston)	American Society for Limnology and Oceanography Meeting in Salt Lake City, Utah, Feb 8-14, 2003	Abstract
36.	2003	Assessment of phytoplankton community structure in the Santa Barbara Channel (with C.R. Anderson, D.A. Siegel)	American Society for Limnology and Oceanography Meeting in Salt Lake City, Utah, Feb 8-14, 2003	Abstract
37.	2003	The balance between silica production and silica dissolution in the sea: insights from Monterey Bay and the global data set (with J.L. Jones, K. Bidel, F. Aam)	American Society for Limnology and Oceanography Meeting in Salt Lake City, Utah, Feb 8-14, 2003	Abstract
38.	2003	Species-specific silica production estimates from diatom assemblages in the eastern tropical Pacific (with V.M. Franck)	American Society for Limnology and Oceanography Meeting in Salt Lake City, Utah, Feb 8-14, 2003	Abstract
39.	2003	Dynamics of silicon metabolism and ³⁰ Si discrimination in a marine diatom as a function of pCO ₂ (with A.J. Milligan, D.E. Varela, F.M.M. Morel)	American Society for Limnology and Oceanography Meeting in Salt Lake City, Utah, Feb 8-14, 2003	Abstract

40.	2003	What did we learn about limitation of the first trophic level during JGOFS: New concepts of phytoplankton limitation and their relation to particulate matter properties (with 13 other authors)	Final Open Conference: A Sea of Change: Accomplishments and the Future of Ocean Biogeochemistry: 5-8 May 2003	Abstract
41.	2003	The influence of Fe limitation on silicon cycling and diatom productivity in marine systems (with V. Franck)	American Geophysical Union's Chapman Conference on: The Role of Diatom Production and Si Flux and Burial in the Regulation of Global Cycles, Paros, Greece, 22-26 Sept 2003	Abstract
42.	2003	Export of silicic acid from the Southern Ocean to low latitudes during glacial times (M. Brzezinski)	American Geophysical Union's Chapman Conference on: The Role of Diatom Production and Si Flux and Burial in the Regulation of Global Cycles, Paros, Greece, 22-26 Sept 2003	Abstract
43.	2003	Biological fractionation of silicon by an oceanic diatom bloom in Southern Ocean surface waters (with D.E. Varela, C.J. Pride)	American Geophysical Union's Chapman Conference on : The Role of Diatom Production and Si Flux and Burial in the Regulation of Global Cycles, Paros, Greece, 22-26 Sept 2003	Abstract
44.	2004	Are harmful algal blooms responsible for the variation in phytoplankton species composition during spring blooms in the Santa Barbara Channel (with C.R. Anderson, D.A. Siegel, L. Washburn, N. Guillocheau)	Meeting of the American Society of Limnology and Oceanography/The Oceanography Society in Honolulu, HI, Feb 15-20, 2004	Abstract
45.	2004	A shift from Non-Redfield to Redfield nutrient uptake ratios induced by a Southern Ocean iron fertilization experiment (with W.P. Cochlan, R.R. Kudela, R.T. Barber)	Meeting of the American Society of Limnology and Oceanography/The Oceanography Society in Honolulu, HI, Feb 15-20, 2004	Abstract

Work In Press (available for review)

#	Year, Title and Authors	Publisher	Category
B-1	Warrick J.A., Washburn L., Brzezinski M.A., Siegel D.A. (2004) Nutrient contributions to the Santa Barbara Channel, California, from the ephemeral Santa Clara River.	<u>Estuaries</u>	Article
B-2	Dilling L., Brzezinski M.A. (2004) Quantifying marine snow as a prey choice for zooplankton using stable silicon isotope tracers.	<u>Journal of Plankton Research</u>	Article
B-3	Franck V.M., Smith G.J., Bruland K.W., Brzezinski M.A. (2004) Comparison of size-dependent carbon, nitrate and silicic acid uptake rates in high- and low-iron waters.	<u>Limnology and Oceanography</u>	Article
B-4	Buesseler, K.O., Andrews, J.E., Pike, S., Charette, M.A., Goldson, L.E., Brzezinski, M.A. (2004) Particle export during the Southern Ocean Iron Experiment	<u>Limnology and Oceanography</u>	Article

	(SOFeX)		
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Work Submitted (available for review)

#	Title and Authors	Publisher	Category
C-1	Armbrust EV, Berges JA, Bowler C, Communale I, Green BR, Martinez D, Putman NH, Zhou S, Allen AE, Apt KE, Bechner M, Brzezinski MA, Chaal BK, Chiovitti A, Davis AK, Demarest MS, Detter JC, Glavina T, Goodstein D, Hadi. MZ, Helsten U, Hildebrand M, Jenkins BD, Jurka J, Kapitnov VV, Kröger N, Lau WWY, Lane TW, Larimer FW, Lippmeier JC, Medina M, Montsant A, Comunale V, Obornik M, Schnitzler Parker M, Palenik B, Pazour GJ, Richardson PM, Ryneerson TA, Saito MA, Schwartz DC, Thamatrakoln K, Valentin K, Wilkerson FP, Rokhsar DS (2004) The genome of the diatom <i>Thalassiosira pseudonana</i> : ecology, evolution, and metabolism.	<u>Science</u>	Article
C-2	Ziegler K, Chadwick OA, Brzezinski MA, Kelly EF (2004) Weathering status of soil measured by silicon stable isotopes.	<u>Nature</u>	Article
C-3	E.E. McPhee-Shaw, D.A. Siegel, L. Washburn, M.A. Brzezinski, J.A. Jones Mechanisms for Nutrient Delivery to the Inner Shelf: Observations from the Santa Barbara Channel.	<u>Limnology and Oceanography</u>	Article
C-4	M.A. Brzezinski, J.L. Jones, M.S. Demarest (2004). Control of silica production by iron and silicic acid during the Southern Ocean Iron Experiment (SOFeX).	<u>Limnology and Oceanography</u>	Article

Work In Progress (optional)

#	Title and Authors	Potential Publisher	Category
D-1	Ziegler K, Chadwick OA, White AF, Brzezinski MA (2004) ³⁰ Si systematics in a granitic saprolite weathering profile, Rio Icacos, Luquillo Mountains/ Puerto Rico.	<u>Geology</u>	Article

PART II. TEACHING

Catalog Courses

Qtr	Course	Title	Class					Evals
			Type	Units	Hrs	Enroll		
F01	EEMB 184	Internship*	FLD	2	1	1	No	
	EEMB 243	Biological Oceanography w/Alldredge	LEC	3	3	10	No	
	EEMB 596	Directed Reading & Research*	TUT	3	1	1	No	
	MARSC 599	PhD Dissertation Prep*	TUT	10	1	1	No	
W02	EEMB 596	Directed Reading & Research*	TUT	4	1	1	No	
	MARSC 596	Directed Reading & Research*	TUT	10	1	1	No	
	MARSC 599	PhD Dissertation Prep*	TUT	12	1	1	No	
S02	EEMB 145B	Processes in Oceans w/Alldredge	LEC	4	3	62	Yes	
	EEMB 145BL	Methods Aquatic Biology w/Alldredge	LAB	3	6	20	No	
	EEMB 199	Independent Studies*	TUT	3	1	1	No	
	EEMB 596	Directed Reading & Research*	TUT	3	1	1	No	

*Individual consultation

	MARSC 596	Directed Reading & Research*	TUT	8	1	1	No
	MARSC 595	Marine Science	SEM	2	2	24	No
	MARSC 599	PhD Dissertation Prep*	TUT	12	1	1	No
F02	EEMB 4FS	Freshman Seminar	SEM	1	1	21	No
	EEMB 243	Biological Oceanography w/Carlson	LEC	3	3	13	No
	EEMB 199	Independent Studies*	TUT	3	1	1	No
	MARSC 596	Directed Reading & Research*	TUT	10	2	2	No
W03	EEMB 199	Independent Studies*	TUT	3	1	1	No
	EEMB 596	Directed Reading & Research*	TUT	10	1	1	No
	MARSC 596	Directed Reading & Research*	TUT	10	1	1	No
S03	EEMB 142C	Processes in Oceans w/Stone	LEC	4	4	45	Yes
	EEMB 142CL	Methods of Aquatic Biology w/Johnson	LAB	3	3	9	No
	EEMB 199	Independent Studies*	TUT	4	1	1	No
	EEMB 501	Teaching Practice	FLD	3	2	2	No
	MARSC 596	Directed Reading & Research*	TUT	9	2	2	No
	MARSC 595	Sem Marine Science	SEM	2	2	30	No
F03	EEMB 243	Biological Oceanography w/Alldredge	LEC	3	3	15	Yes
	EEMB 596	Directed Reading & Research*	TUT	12	1	1	No
	MARSC 596	Directed Reading & Research*	TUT	9	2	2	No
W04		<i>Administrative Release</i>					
	MARSC 596	Directed Reading & Research*	TUT	26	3	3	No
S04	EEMB 142C	Processes in Oceans & Lakes w/Alldredge	LEC	4	4	58	Yes
	EEMB 142CL	Methods of Aquatic Biology w/Alldredge	LAB	3	3	13	No
	MARSC 595	Sem in Marine Science	SEM	2	2	40	No
	MARSC 596	Directed Reading & Research*	TUT	17	3	3	No

*Individual consultation

The teaching load policy for the Department of Ecology, Evolution and Marine Biology states that full-time members of the 'ladder' faculty teach no fewer than three courses an academic year of which, as a rule, at least two are regular courses while one may be a seminar course.

The teaching load during the period under review meets the norm for the department.

Undergraduate Projects Directed

Student	Project	Chair/Member	Yr Deg. Compl.
Kristen Green	Giant Kelp Response to Changing Nitrate Supplies	Chair	2003

Graduate Degree Committees

MA Committees

Student	Yr Deg. Compl.	Chair/Member	Optional Info (e.g., Current Employment)

Ph.D. Committees

Student	Yr Deg. Compl.	Chair/ Member	Optional Info (e.g., Current Employment)
Clarissa Anderson	In progress	Chair	
Elizabeth Bayer	In progress	Chair	
Gabrielle Johnson	In progress	Member	
Claudia Mengelt	In progress	Member	
Stephanie Oakes	In progress	Member	
Toby Westberry	In progress	Member	
Mark Demarest	in progress	Chair	Biological Sciences, UCSB
Laura Mydlarz	2004	Member	
Joseph Gorga	2003	Member	Biological Sciences, UCSB
Valerie Frank	2002	Chair	Biological Sciences, UCSB

Postdoctoral Scholars Supervised

Diana Varela, Ph.D. University of British Columbia

Charlotte Beucher, Ph.D. University Bretagne, France

Other Teaching Contributions (course improvements, new courses, honors, seminars, etc.)

See teaching self evaluation statement

PART III. PROFESSIONAL ACTIVITIES

Lectures Presented

Month/Yr	Title	Meeting/Place
Feb. 2002	Varela, D.E., C.J. Pride, M.A. Brzezinski and M.J. DeNiro. Natural variations in silicon isotope abundances as indicators of silica production in the Southern Ocean. Ocean Sciences Meeting, Honolulu, HI. Talk.	Meeting of the American Society of Limnology and Oceanography/ The Oceanography Society in Honolulu, HI.
Dec. 2002	M.A. Brzezinski. Response of diatom biomass and silica production to iron fertilization during SOFeX. Talk.	Fall meeting of the American Geophysical Union, 6-10 December 2002 in San Francisco.
Feb. 2003	With Siegel, D.A., Langston, B.E. Population dynamics of microbes in a discrete world: Direct numerical simulations of phytoplankton competition.	Feb 8-14, 2003 Meeting of the American Society for Limnology and Oceanography in Salt Lake City, Utah.
Feb. 2003	With Anderson, C.R., Siegel, D.A. Assessment of phytoplankton community structure in the Santa Barbara Channel.	Feb 8-14, 2003 Meeting of the American Society for Limnology and Oceanography in Salt Lake City, Utah.
Feb. 2003	With Jones, J.L., Bidel, K. and Aam, F. The balance between silica production and silica dissolution in the sea: insights from Monterey Bay and the global data set.	Feb 8-14, 2003 Meeting of the American Society for Limnology and Oceanography in Salt Lake City, Utah.
Feb. 2003	With Franck, V.M. Species-specific silica production estimates from diatom assemblages in the eastern tropical Pacific.	Feb 8-14, 2003 Meeting of the American Society for Limnology and Oceanography in Salt Lake City, Utah.
Feb. 2003	With Milligan, A.J., D.E. Varela and F.M.M. Morel.	Feb 8-14, 2003 Meeting of the American

	Dynamics of silicon metabolism and ³⁰ Si discrimination in a marine diatom as a function of pCO ₂ .	Society for Limnology and Oceanography in Salt Lake City, Utah.
May 2003	What did we learn about limitation of the first trophic level during JGOFS: New concepts of phytoplankton limitation and their relation to particulate matter properties with 13 other authors.	Poster presented at the Final Open Conference: A Sea of Change: Accomplishments and the Future of Ocean Biogeochemistry: 5-8 May 2003.
Sept. 2003	With V. Franck. The influence of Fe limitation on silicon cycling and diatom productivity in marine systems. Invited talk.	American Geophysical Union's Chapman Conference on: The Role of Diatom Production and Si Flux and Burial in the Regulation of Global Cycles, Paros, Greece, 22-26 Sept 2003.
Sept. 2003	Keynote by M. Brzezinski: Export of silicic acid from the Southern Ocean to low latitudes during glacial times. Invited talk.	American Geophysical Union's Chapman Conference on: The Role of Diatom Production and Si Flux and Burial in the Regulation of Global Cycles, Paros, Greece, 22-26 Sept 2003.
Sept. 2003	With Varela, D.E., C.J. Pride. Biological fractionation of silicon by an oceanic diatom bloom in Southern Ocean surface waters. Poster. Invited talk.	American Geophysical Union's Chapman Conference on : The Role of Diatom Production and Si Flux and Burial in the Regulation of Global Cycles, Paros, Greece, 22-26 Sept 2003.
Feb. 2004	With Anderson, C.R., Siegel, D.A., Washburn, L. and Guillocheau, N. Are harmful algal blooms responsible for the variation in phytoplankton species composition during spring blooms in the Santa Barbara Channel. Talk.	Feb 15-20, 2004 meeting of the American Society of Limnology and Oceanography/ The Oceanography Society in Honolulu, HI.
Feb. 2004	With Cochlan, W.P., Kudela, R.R. and Barber R.T. A shift from Non-Redfield to Redfield nutrient uptake ratios induced by a Southern Ocean iron fertilization experiment. Talk.	Feb 15-20, 2004 meeting of the American Society of Limnology and Oceanography/ The Oceanography Society in Honolulu, HI.

Grants and Contracts

Years	Source	Title	Amount	Prin. Invest.
Dec. 1996 - Dec. 2001	US Department of the Army	New Hybrid Route to Biomimetic Synthesis (with Morse, Hansma, Chmelka, Demming)	\$5,000,000	
April 1998- March 2002	National Science Foundation	Natural Variations in Silicon Isotopes in Seawater Silicic Acid and Marine Diatoms: A New Tool for Studying the Marine Silica Cycle (with DeNiro)	\$380,564	
Mar. 1999- Mar. 2002	National Science Foundation	Bacterial Control of Silicon Regeneration in the Ocean (with Azam)	\$137,610 UCSB component	
Feb. 2000- Feb. 2003	National Science Foundation	Iron Limitation of Silica Production in the Southern Ocean: A Companion Proposal to the SO FeX Experiment	\$344,803	
Mar. 2000- Mar. 2006	National Science Foundation	LTER: Land/Ocean Interactions and the Dynamics of Kelp Forrest Ecosystems	\$4,200,000	

Awards and Honors

Reviewing and Refereeing Activity

Date	Activity and for Whom
2002	Served on proposal review panel for NSF Chemical Oceanography
2001-2004	Proposal reviews for NOAA, NSF, DOE, Sea Grant
2001-2004	Manuscript reviews for many journals including Nature, Science, Limnology and Oceanography, Deep Sea Research, Geophysical Research Letters, Marine and Environmental Research, Journal of Geophysical Research, Marine Chemistry

Special Appointments (e.g., Editorships, Officer of Prof. Organization)

Years	Position	Type of Service

Other Professional Contributions (e.g., Consulting or other application of your professional expertise)

PART IV. SERVICE

University Service (Including administrative posts held)

Departmental

Years	Position	Type of Service
2001-2004	EEMB Rep.	Graduate Advisor Interdepartmental Program
2001-2002	Chair	EEMB Computer Affairs Committee
2001-2002	Chair	EEMB Core Computer Committee
2002-2003	Member	EEMB Chair's Advisory Council
2002-2003	Chair	EEMB Curriculum Committee
2002-2003	Representative	Biological Sciences Core Computer Committee
2002-2003	Member	EEMB Grad Student Advisory Committee
2002-2003	Vice Chair EEMB	Oversight of undergraduate programs, Policy and Oversight Committee
2002-2003	Member	EEMB Planning and Oversight Committee
2002-2003	Dept Representative	Department representative to ad hoc review committee
2003-2004	Dept Representative	Department representative to ad hoc review committee
2003-2004	Chair	EEMB Computer Affairs Committee
2003-2004	Member	Development Committee

Campus

Years	Position	Type of Service
2002-2003	Reviewer for Committee on Research	Reviewed annual proposals from faculty for research funds
2001-2004	Deputy Director MSI	Oversight of day to day operations, restructuring of merit review process, outreach and development activities, MSB construction oversight.
2003-2004	Member	MLPS IT committee

Public Service (including service to K-12 Education)

Years	Position	Type of Service
2002	Guest expert	Science Night Kellogg Elementary School