

Curriculum vitae
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Sasha Tozzi

Virginia Institute of Marine Science
College of William and Mary
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Personal information

Date of Birth: 23 July 1971
Place of Birth: Naples, Italy
Citizenship: Italian

Education

June 2008 Expected Ph.D. in Marine Science, College of William & Mary, Virginia Institute of Marine Science, School of Marine Science. Thesis: *Photobiological studies of Ross Sea phytoplankton*.

2001 M.S. in Oceanography, Rutgers, The State University of New Jersey, New Brunswick, NJ. Thesis: *Competition and succession of key marine phytoplankton functional groups in a variable environment*.

1997 B.S. in Biological Sciences, University of Naples "Federico II". Thesis: *Photosynthetic Parameters of Phytoplankton in Coastal Area (The Gulf of Naples): Implication for Remote Sensing*.

Advisors

Ph.D. Walker O. Smith, Jr, College of William & Mary
M.S. Paul G. Falkowski, Rutgers, The State University

Employment

2003 to present Graduate Research and Teaching Assistant at VIMS, College of William and Mary.
1999 - 2003 Graduate Research and Teaching Assistant at IMCS - Rutgers, The State University of New Jersey.
1998 Contract with the University of Rome "Tor Vergata" and C.N.R., to review all available visible remote sensing data for the Southern Ocean.

Research Experience and Projects

June 2005 to present

- CORSACS: Controls on Ross Sea Algal Community Structure (Prof. Jack DiTullio and Prof. Walker O. Smith)
- IVARS: Interannual Variations in the Ross Sea (Prof. Walker O. Smith).
- Summer 2005 MBARI internship. Trace metal clean techniques for Fe sampling and FIA determination (Dr. Kenneth Johnson). Variable fluorescence in Monterey Bay and California Current (Drs. Francisco P. Chavez and Zbigniew Kolber).

January 2003 to 2005

- IVARS: Interannual Variations in the Ross Sea (Prof. Walker O. Smith)
- Phytoplankton Bloom Characterization in the York River, VA (Prof. Larry W. Haas)
- Phosphorus limitation in the Mississippi river plume effect on phytoplankton physiology and productivity (Drs. Jim Ammerman, Tom R. Fisher, Antonietta Quigg).

September 2001 to January 2003

- Diatom vs coccolithophorids competition in a variable nutrient environment with a droop model (Prof. Paul Falkowski).
- Iron limitation in the Southern Ocean (SOFEX) effects on phytoplankton physiology and productivity (Dr. Zbigniew Kolber and Prof. Paul Falkowski).
- Phosphorus limitation in the Mississippi river plume effect on phytoplankton physiology and productivity (Dr. Jim Ammerman).

January 1999 – September 2001

- M.S. thesis on diatom vs coccolithophorids competition in a variable nutrient environment with (Prof. Paul Falkowski)
- Biooptics at LEO-15 (NJ coast) in relation to phytoplankton dynamics and remote sensing (Prof. Oscar Schofield)

November 1997 - September 1998

- Contract with the University of Rome "Tor Vergata" and C.N.R. to review the available literature on the calibration of visible remote sensing data in the Southern Oceans.

March 1997 - March 1998

- Post degree practical training in the Biological Oceanography Laboratory at the Stazione Zoologica "A. Dohrn" Naples, Italy, working on collection and processing of pigment, light and remote sensing data (Dr. Maurizio Ribera d'Alcalà)
- SYMPLEX: SYnoptic Mesoscale PLankton Experiment (Dr. Maurizio Ribera d'Alcalà).

June 1995 - March 1997

- B.S. Thesis in the Biological Oceanography Laboratory at the Stazione Zoologica "A. Dohrn" Naples, Italy, working on the Marechiarra time series data-set (Dr. Maurizio Ribera d'Alcalà and Prof. Gian Carlo Carrada).
- SYMPLEX: SYnoptic Mesoscale PLankton Experiment (Dr. Maurizio Ribera d'Alcalà)
- Attended the IFA – C.N.R. (Institute of Atmosphere Physics), to learn techniques on utilization of visible and thermal remote sensing data (CZCS, SeaWiFS and AVHRR) (Dr. Rosalia Santoleri)

Teaching and Mentoring Experiences

- Spring 2008 Teaching Assistant MSCI 642 Practical Environmental Statistics, VIMS
- March 2006 Invited lecture at Hampton University as part of DREAMS Research Seminars Series
- Summer 2004 Mentor for Ed Gorecki (Texas A&M-Corpus Christi) Research Experience for Undergraduates (REU)
- Spring 2002 Teaching Assistant of Oceanographic Methods and Data Analysis 11:628:364, Rutgers University
- Summer 2001 Mentor for Jessie Sebbo (Rutgers University) Undergraduate Summer Internship
- Spring 2001 Teaching Assistant of Oceanographic Methods and Data Analysis 11:628:364, Rutgers University
- June 1998 Invited lecture at the summer school of Remote Sensing and Marine Ecology, organized by the National Antarctic Program, CNR and ESRIN (European Space Agency) in Frascati, Italy

Awards and prizes

- 2006 \$ 1,190 Student Travel Awards (VIMS and W&M)
- 2006 NSF U.S. Antarctic Service Medal
- 2004 \$ 800 Student Travel Awards (VIMS and W&M)
- 2003 \$ 1000 VIMS - Student Research Grant Proposal
- 2000 Outstanding poster presentation at Oceans from Space, Venice, Italy
- 1996 One of the 5 prizes for best young scientists at the Italian Association of Oceanography and Limnology (AIOL), XII National Congress, Vulcano, Italy

Cruises and Field Experience

Date	Days	Vessel/Field	Project	Location	Chief scientist
November, 2006	45	R.V.I.B. Palmer	CORSACS	Ross Sea	Jack DiTullio
December, 2005	48	R.V.I.B. Palmer	IVARS & CORSACS	Ross Sea	Walker O. Smith/Jack DiTullio
August 10, 2005	1	R/V Point Lobos	Monterey Bay Time series	Monterey Bay, CA	Timothy Pennington
July, 2005	7	R/V Western Flyer	SECRET	California Current	Francisco P. Chavez
July 20, 2005	1	R/V Point Lobos	Monterey Bay Time series	Monterey Bay, CA	Timothy Pennington
June 28, 2005	1	R/V Point Lobos	Monterey Bay Time series	Monterey Bay, CA	Timothy Pennington
January, 2005	20	R.V.I.B. Palmer	IVARS	Ross Sea	Walker O. Smith
January, 2005	28	Crary Lab	Antarctica phytoplankton study	McMurdo Sound, Antarctica	
December, 2004	15	USCG I.B Polar Star	IVARS	Ross Sea	Walker O. Smith
July, 2004	5	R/V Pelican	Mississippi plume	Gulf of Mexico	James Ammerman
May, 2004	4	R/V Pelican	Mississippi plume	Gulf of Mexico	James Ammerman
March, 2004	5	R/V Pelican	Mississippi plume	Gulf of Mexico	James Ammerman
February, 2004	11	USCG I.B Polar Star	IVARS	Ross Sea	Walker O. Smith
January 2004	30	Crary Lab	Antarctica phytoplankton study	McMurdo Sound, Antarctica	
December, 2003	17	R.V.I.B. Palmer	IVARS	Ross Sea	Walker O. Smith
March 2003	3	R/V Pelican	York River plankton study	York River, VA	Larry Haas
January, 2002	41	R/V Revelle	SOFeX	Pacific Sector Southern Ocean	Kenneth Johnson
May, 2000	12	CMRC	CoBOP	Lee Stocking Island, Bahamas.	Max Gorbunov
July, 1999	5	R/V Walford	LEO15	Southern New Jersey Coast	Oscar Schoefield
July, 1997	26	R/V Urania	SYMPLEX (SeaWiFS calibratio)	Sicily Channel	R. Santoleri/ S. Marullo
July, 1997	9	R/V Vettoria	Bioptical monitoring	Gulf of Naples, Italy	Sasha Tozzi
June, 1997	5	R/V Urania	PRISMA	North Adriatic Sea	Marco Marcelli
April, 1996	32	R/V Urania	SYMPLEX	Sicily Channel	R. Santoleri/ S. Marullo
December 1998 September 1995	~40	R/V Vettoria	"Marechiara" Time series	Gulf of Naples, Italy	

Publications (Peer-Reviewed in periodicals, chapters in books and conference proceedings)

W. O. Smith Jr., **S. Tozzi** and V. A. Asper (2008) Continuous fluorescence measurements in the Ross Sea, Antarctica: scales of variability. *Journal of Geophysical Research* (Submitted)

W. O. Smith Jr., **S. Tozzi**, G. R. DiTullio, M. Dinnimand, O. Mangoni, M. Modigh and V. Saggiomo (2007) Phytoplankton photosynthetic pigments in the Ross Sea: Patterns and relationships among functional groups. *Journal of Marine Systems* (accepted)

J. B. Sylvan, A. Quigg, **S. Tozzi**, and J.W. Ammerman (2007) Eutrophication induced phosphorus limitation in the Mississippi River Plume: Evidence from fast repetition rate fluorometry. *Limnology and Oceanography* 52(6) 2679-2685

W. O. Smith Jr., A. R. Shields, G. Catalano, J. A. Peloquin, **S. Tozzi**, M. S. Dinniman and V. A. Asper (2006) Interannual Variations in Nutrients, Net Community Production, and Biogeochemical Cycles in the Ross Sea. *Deep Sea Research* 53(8-10) 815-833

S. Tozzi, O. Schofield, P. Falkowski (2004) Historical climate change and ocean turbulence as selective agents for two key phytoplankton functional groups. *MEPS* 274:123-132

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. Demarest, W.T. Hiscock, K.F. Sullivan, S.J. Tanner, R.M. Gordon, C.N. Hunter, V.A. Elrod, S.E. Fitzwater, J.L. Jones, **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, Z. I. Johnson (2004) Southern Ocean Iron Enrichment Experiment (SOFeX): Carbon Cycling in High- and Low-Si Waters , *Science* (304) 408-414

Moline, MA, Arnone, R, Bergmann, T, Glenn, S, Oliver, M, Orrico, C, Schofield, O, **Tozzi, S.** (2004) Variability in spectral backscatter estimated from satellites and its relation to in-situ measurements in optically complex coastal waters. *International Journal of Remote Sensing* 25:(7-8),1465-1468

S. Tozzi, O. Schofield, M. A. Moline, T. Bergmann, M. Crowley , R. Arnone.(2004) Variability in measured and modeled remote sensing reflectance and comparison of SeaWiFS and in situ chlorophyll a distribution for coastal waters at LEO-15. *International Journal of Remote Sensing*. 25:(7-8)1469-1472

S. Tozzi and M. Ribera d'Alcalà, 2000. Primary Production and Remote Sensing. In *Remote Sensing and Marine Ecology*. Ed. by A. Argentieri, A. Fianchini and L. Rossi, ESA/ESRIN, pp1-19 (*in Italian*)

E. Böhm, B. Buongiorno Nardelli, C. Brunet, R. Casotti, F. Conversano, F. Corato, E. D'Acunzo, F. D'Ortenzio, D. Iudicone, L. Lazzara, O. Mangoni, M. Marcelli, S. Marullo, L. Massi, G. Mori, I. Nardello, C. Nuccio, M. Ribera d'Alcalà, V. Saggiomo, R. Santoleri, M. Scardi, S. Sparnocchia, **S. Tozzi** and S. Zoffoli (1998) SYMPLEX Experiment: first results on oceanic mesoscale dynamics and related primary production from AVHRR and SeaWiFS satellite data and field experiments. *The European Symposium on Remote Sensing, EUROPTO Series, SPIE Proceedings-The International Society for Optical Engineering*, Vol. 3496, pp.137-148

M. Ribera d'Alcalà and **S. Tozzi** (1998) Topical problems in Biological Oceanography, *Realtà Nuova, Ecologia III*, 55-78 (*in Italian*)

S. Tozzi, B. Buongiorno Nardelli and F. d'Ortenzio: Distribution of chlorophyll a in the Eastern Mediterranean in relation to sub-basin structures: analysis of the remotely sensed data, proceedings of XII A.I.O.L. Congress, M. Piccazzo, 1997, vol. 1, 213-224

Publications in Preparation

Tozzi S., W. O. Smith Jr., Z. Kolber. High resolution Ross Sea phytoplankton primary production estimated by fast repetition rate fluorometry. (in preparation for *Journal of Plankton Research*).

Tozzi S., Z. Kolber, W. O. Smith Jr.. Photophysiological study of Ross Sea Phytoplankton. (in preparation for *Journal of Marine Biology*).

Tozzi, S., J.A. Peloquin, W. O. Smith Jr. Ross Sea interannual phytoplankton photosynthetic activity mapping and comparison with different active chlorophyll fluorescence techniques. (in preparation for Marine Ecology Progress Series)

Shields, A.R., W.O. Smith, Jr., J. Dreyer, J.A. Peloquin, **S. Tozzi** and V.A. Asper. Interannual variability in vertical flux in the Ross Sea, Antarctica. (in preparation for Antarctic Science).

Presentations and Posters

S. Tozzi, J. A. Peloquin, J. Dreyer (2006) Development of a new FlowCAM flow cytometer protocol for processing samples with a wide range of different sized phytoplankton from the Ross Sea Antarctica. (Summer ASLO Meeting Victoria, B.C. June 4-9, 2006)

S. Tozzi, J. A. Peloquin and W. O. Smith Jr (2006) Characterization of Ross Sea phytoplankton dynamics and photosynthetic activity measured with variable fluorescence (February 20-24 Ocean Sciences AGU/ASLO/TOS Joint Meeting Honolulu, Hawaii)

W. O. Smith, Jr., M. Dinniman, G. DiTullio, and **S. Tozzi** (2006) The climatology of phytoplankton pigments in the Ross Sea (February 20-24 Ocean Sciences AGU/ASLO/TOS Joint Meeting Honolulu, Hawaii)

W. O. Smith Jr., **S. Tozzi**, G. DiTullio, O. Mangoni, and V. Saggiomo (2005) Phytoplankton photosynthetic pigments in the Ross Sea: Patterns and relationships among functional groups(3rd International Conference on the Oceanography of the Ross Sea Antarctica10 - 14 October, Venice, Italy)

J. W. Ammerman, Q. Dortch, B. M. Gaas, D. M. Nelson, A. Quigg, J. B. Sylvan, **S. Tozzi** (2005) Seasonal Phosphorus Limitation on the Louisiana Shelf: A Result of Nitrogen Loading from the Mississippi River? (EPA Mississippi River Basin Nutrients Science Workshop, October 4-6, St. Louis, Missouri)

Smith, W.O. Jr., G. Catalano, A. R. Shields, J. A. Peloquin, **S. Tozzi** and V. A. Asper (2004) Biogeochemical Budgets in the Ross Sea: Variations Among Years. (September 27 – October 1, Korcula, Croatia)

Shields A.R., W.O. Smith, **S. Tozzi**, J. A. Morgan (2004) Toward an Understanding of the Environmental Factors Regulating the Relative Numbers of Solitary and Colonial Cells of *Phaeocystis antarctica* in the Ross Sea. SCAR Open Science Conference (26–28 July, Bremen, Germany) “Antarctica and the Southern Ocean in the Global System”

Tozzi S., E. S. Darrow, R. H. Condon, L. W. Haas, The Spring Phytoplankton Bloom in the York River estuary, Virginia. Characterization and Interannual variability. ASLO meeting (February 15-20, 2004 Honolulu, Hawaii)

Tozzi S., R. H. Condon, E. S. Darrow, A. C. Spivak, L. H. Brasseur, L. W. Haas, Characterization and environmental regulation of the spring bloom in the York river estuary, Virginia, USA. ERF meeting (September 14-18, 2003 Seattle, Washington State)

Sylvan, JB Quigg, A, **Tozzi, S.**, Natale, F, Kolber, Z, Ammerman, JW, Extensive evidence of summer phosphorus limitation in the Mississippi river plume 2003 ASLO meeting (February 8-14, Salt Lake City, Utah)

M. Gorbunov, **S. Tozzi**, M. Koblizek, Z. Kolber, P. Falkowski, Photosynthetic response of phytoplankton during the Southern Ocean Iron Experiment (SOFEX). 2002 AGU meeting (December 6-10, San Francisco, CA)

J. Sebbo, T. Bergmann, J. Kerfoot, **S. Tozzi**, O. Schofield, Light Stress and TEP Production in Phytoplankton Communities in Turbid Coastal Waters, 2002 Ocean Sciences AGU/ASLO Joint Meeting Honolulu, Hawaii

S. Tozzi and P. G. Falkowski, Competition and Succession of Key Marine Phytoplankton Functional Groups in a Variable Environment, Annual CODENET meeting (August 25-29, 2001- Blagnac)

S. Tozzi, O. Schofield, M. A. Moline, T. Bergmann, M. Crowley, R. Arnone, Variability in measured and modeled remote sensing reflectance and comparison of SeaWiFS and in situ chlorophyll a distribution for coastal waters at LEO-15, Ocean Optics XV (October16-20, 2000 - Monaco)

M.A. Moline, O. Schofield, S. Glenn, **S. Tozzi**, M. Crowley, M. Demarest, R. Arnone, P. Bisset, Assessment of Phytoplankton Dynamics at the Long-term Ecosystem Observatory (LEO-15) Using in Water Optics and Remote Sensing, 2000 ASLO Meeting (June 5-9, 2000 - Copenhagen)

S. Tozzi, O. M. Schofield, J. J. Grzymiski, T. Bergmann, M. A. Moline, D. Peterson, Variability of the Spectral Signatures of Coastal Waters Measured and Modeled for the LEO-15 Site, 2000 Ocean Sciences Meeting (January 24-28, 2000 - San Antonio, Texas)

Scardi M., **Tozzi S.**, Di Dato P. and Fresi E., Calibration of remotely sensed phytoplankton biomass and productivity data in the Southern Ocean. Proceedings of Convengo Nazionale delle Scienze del Mare (November 11-14, 1998 Ischia ITA)

M. A. Moline, C. Orrico, T. Newton, O. M. Schofield, J. J. Grzymiski, T. Bergmann, **S. Tozzi**, Phytoplankton Community Dynamics in the Coastal Waters of the LEO-15 Site, 2000 Ocean Sciences Meeting (January 24-28, 2000 - San Antonio, Texas)

S. Tozzi, F. d'Ortenzio, R. Santoleri, M. Scardi: Comparison and validation of SeaWiFS data with Sicily Channel in situ measurement, Proceedings of XIII A.I.O.L. Congress (27-30 September 1998 - Ancona ITA)

S. Tozzi, R. Santoleri, S. Mattei, M. Ribera d'Alcalà and V. Barale: Chlorophyll a distribution in the Eastern Mediterranean in relation to sub-basin structures: analysis of the CZCS data, Proceedings of International Conferences Progress in Oceanography of the Mediterranean Sea (17-19 November 1997 - Rome ITA), 205-207

M. Marcelli, O. Campana, A. Di Maio, O. Mangoni, M. Ribera d'Alcalà, V. Saggiomo, **S. Tozzi** and E. Fresi: Development of a new operative method to estimate primary production in the pelagic system with a quasi synoptic space time scale, Proceedings of International Conferences Progress in Oceanography of the Mediterranean Sea (17-19 November 1997 - Rome ITA), 309-310

S. Tozzi, B. Buongiorno Nardelli and F. d'Ortenzio: Distribution of chlorophyll a in the Eastern Mediterranean in relation to sub-basin structures: analysis of the remotely sensed data, proceedings of XII A.I.O.L. Congress (18-21 September 1996 - Vulcano ITA)

Computer skills

Extensive computer experience including PC hardware and software installation, networking and troubleshooting.

Proficient in Windows 3.11/95/98/2000/XP, DOS and UNIX operating systems.

Expert in a variety of word processing, editors and graphics software on PC such as Microsoft Word, Excel, PowerPoint, EndNote, Adobe Acrobat, Photoshop, Quattro Pro, Grapher, Surfer and ODV.

BASIC, MatLab, HTML and CSS programming experience.

Other skills and abilities

Fluent written and spoken Italian

Experienced in following techniques: phytoplankton culturing, nutrients, dissolved oxygen determination, oxygen and ¹⁴C Pvs.E, light microscopy, pigments extraction and determination.

Practiced with the following equipment: spectrophotometer, spectrofluorometer, coulter counter (Beckman), bench top (RUTGERS & MBARI), scuba diving and profiling (Chelsea) FRRF(Fast Repetition Rate Fluorimeter), PAM (pulse amplitude modulation fluorometer, Waltz, Effeltrich, Germany), PAR meters (Licor & Biospherical), spectroradiometer (Biospherical), CTD (Seabird & YSI), Nutrient Autoanalyzer (Lachat Quick Chem), ISUS nitrate sensor (Satlantic), FlowCAM (Fluidimaging), sediment traps, mooring assembly and deployment.

Divemaster and MFA PADI, Naturalist Diver ISSD and DAN Oxygen First Aid for Scuba Diving Injuries

Membership in Professional Societies

2006 to present	The American Association for the Advancement of Science (AAAS)
2004 to present	American Geophysical Union (AGU)
2004 to present	The Oceanography Society (TOS)
1999 to present	American Society of Limnology and Oceanography (ASLO)
1996 - 1998	Italian Association of Oceanography and Limnology (AIOL)

Professionals Services

2007

Reviewer for:

Estuarine, Coastal, and Shelf Science (1)

2006

Co-Chair of session TS-D01 - Use of Microscopic Imaging and Flow Cytometry for Detecting and Enumerating Plankton (TS-E11 Emerging challenges in aquatic sciences) at Summer ASLO Meeting in Victoria, B.C. June 4-9

2005

Reviewer for:

Estuarine, Coastal, and Shelf Science (1)

Remote Sensing of Environment (2)

EMBS Proceedings (1)

Departmental activities, outreach and media

2007	Seminar to the U.S. Coast Guard Auxiliary, Flotilla 64.
2007	Science Magazine interview (DOI: 10.1126/science.caredit.a0700037)
2006	CORSCAS Cruises web-blog
2006 to present	VIMS Biological Science department Webmaster
2005 to 2007	International students Representative
2003 to 2007t	VIMS open house on Marine Science Day
2005	MBARI open House
2003 - 2005	Executive Council Representative Virginia Institute of Marine Science Graduate Student Association
2001	Co-founder and Treasurer of the Rutgers University Oceanography Graduate Association
1999 – 2002	Rutgers University – IMCS open house on Ag Field Day
1999 – 2001	Coordinator of Rutgers University – IMCS Graduate Student Seminars