

## Kimberlee Thamatrakoln

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## EDUCATION

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- 2006 **Ph.D. Marine Biology**, Scripps Institution of Oceanography, University of California, San Diego  
Thesis: *Molecular insights into the function and regulation of diatom silicon transporters*  
Advisors: Michael Latz and Mark Hildebrand
- 2000 **M.S. Biological Science**, Stanford University  
Advisor: George Somero
- 1997 **B.S. Biochemistry and Cell Biology**, University of California, San Diego  
Minor in Philosophy  
Minor in Health Care

## POSITIONS HELD

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- 2017-present **Associate Research Professor**, Department of Marine and Coastal Sciences, Rutgers University, New Brunswick, NJ
- 2012-2017 **Assistant Research Professor**, Department of Marine and Coastal Sciences, Rutgers University, New Brunswick, NJ
- 2007-2012 **Postdoctoral Research Fellow**, Institute of Marine and Coastal Sciences, Rutgers University, New Brunswick, NJ, Advisor: Kay D. Bidle
- 2000-2006 **Graduate Student Researcher**, Scripps Institution of Oceanography, La Jolla, CA  
Advisors: Michael Latz and Mark Hildebrand, Marine Biology Research Division
- 1998-2000 **Research Associate**, Stanford University, Palo Alto, CA  
Supervisor: Alan Krensky, Department of Immunology
- 1997 **Molecular Biologist**, Hyseq, Inc, Sunnyvale, CA  
Supervisor: Geeta Kadambi, Automated Hybridization Department
- 1995-1997 **Lab Technician**, Salk Institute of Biological Science, La Jolla, CA  
Supervisor: Martyn Goulding, Molecular Neurobiology

## FUNDING

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NSF Division of Ocean Sciences, Biological Oceanography, “Shunt or shuttle? Nutrient-driven biogeochemical consequences of diatom host-virus interactions” **K Thamatrakoln** and KD Bidle, \$549,997, 15 Feb 2021 – 14 Feb 2024

Discovery Project, Australian Research Council, “Diatom silica production under future ocean conditions, genes to biomes” Lead PI: K. Petrou, University of Technology, Sydney; **K Thamatrakoln**, \$36,336 1 Mar 2021-28 Feb 2024

NSF Office of Integrative Affairs, Growing Convergent Research, “GCR: Collaborative Research: The convergent impact of marine viruses, minerals, and microscale physics on phytoplankton carbon sequestration” KD Bidle, **K Thamatrakoln**, H Fuchs, \$1,551,015 (total award \$3,549,067). 1 Jan 2021-31 Dec 2025

Rutgers Global, Institute of Earth, Ocean, and Atmospheric Sciences, Rutgers Climate Institute, “Disentangling the biogeochemical consequence of algal host-virus interactions on carbon sequestration in the Gulf of Naples, Italy” **K Thamatrakoln**, \$14,940. 1 Jul 2020-30 Jun 2021

ASSEMBLE Plus Transnational Access, European Union Horizon 2020, “Diatom Virus Interactions in Natural Communities”, **K Thamatrakoln**, funds for access to field research station

NSF Division of Biology, “EDGE CT: Virus-inspired, lipid-mediated transfection and genetic manipulation of the marine coccolithophore, *Emiliania huxleyi*” KD Bidle, **K Thamatrakoln**, BAS Van Mooy, D Hirsh \$1,205,296. 1 Sept 2019-31 Aug 2023

Joint Genome Institute Community Science Program: Small-scale Microbial and Metagenome, “The role of light and nutrient limitation on algal host-virus interactions in natural populations and subsequent impacts on carbon export and the biological pump” **K Thamatrakoln** and KD Bidle, funds to cover Illumina sequencing and analysis. March 2018

NSF Division of Ocean Sciences, Biological Oceanography, “Light-dependent regulation of coccolithophore host-virus interactions: mechanistic insights and implications for structuring infection in the surface ocean” **K Thamatrakoln** and KD Bidle, \$698,546. 1 Mar 2016- 28 Feb 2019

Ocean, Carbon, Biogeochemistry, “MV1405: Iron Bruland Post-Cruise Workshop” A Marchetti, B Twining, **K Thamatrakoln**, \$10,000. May 2015

Gulf of Mexico Research Initiative IV, Alabama Center for Ecological Resilience (ACER) Consortium "Collaborative Research: The role of primary-producer biodiversity in mitigating the trophic-transfer consequences of petroleum pollution." **K Thamatrakoln**, \$377,024 (total award \$6,500,000). 1 Jan 2015 – 31 Dec 2017 (no-cost extension until Dec 2018)

NSF Catalyzing New International Collaborations, “US-France Planning Visit: Understanding the molecular regulation of photosynthetic-related processes in unicellular marine eukaryotes” **K Thamatrakoln**, \$38,595. 1 Jun 2014 – May 31 2016

NSF Division of Ocean Sciences, Biological Oceanography, “Collaborative Research: Linking physiological and molecular aspects of diatom silicification in field populations” **K Thamatrakoln**, \$337,995 (total award \$822,531). 1 Sept 2013 – 31 Aug 2016

NSF Division of Ocean Sciences, Biological Oceanography, “Collaborative Research: A Matter of Life or Death? Assessing the physiological roles of PCD-related genes to stress adaptation in diatoms” KD Bidle and **K Thamatrakoln**, \$707,949 (total award \$776,540). 1 Sept 2009 – 31 Aug 2012

#### **PEER-REVIEWED PUBLICATIONS** (\* denotes advisee)

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Kranzler CF\*, MA Brzezinski, NR Cohen, RH Lampe, M Maniscalco\*, CP Till, J Mack\*, JR Latham\*, BS Twining, A Marchetti, and **K Thamatrakoln** (in press) “Impaired viral infection and reduced mortality of diatoms in iron limited oceanic regions” *Nature Geosciences*

Mayers KMJ, AJ Poulton, KD Bidle, **K Thamatrakoln**, B Schieler, SLC Giering, SR Wells, GA Tarran, D Mayor, A Larsen, A Vardi, and EL Harvey (2021) “Coccolithophore calcification fails to deter microzooplankton grazers” *Frontiers in Marine Science*

Closset I, HM McNair, MA Brzezinski, JW Krause, **K Thamatrakoln**, and JL Jones (2021) “Diatom response to alterations in upwelling and nutrient dynamics associated with climate forcing in the California Current System” *Limnology and Oceanography*

Pelusi A, P De Luca, F Manfellotto, **K Thamatrakoln**, KD Bidle, and M Montresor (2020) “Virus-induced spore formation as a defense mechanism in marine diatoms” *New Phytologist* doi.org/10.1111/nph.16951

Knowles B, J Bonachela, M Behrenfeld, K Bondoc, BB Cael, CA Carlson, N Cieslik, B Diaz, HL Fuchs, J Graff, J Grasis, K Halsey, L Haramaty, CT Johns, F Natale, JI Nissimov, B Schieler, **K Thamatrakoln**, TF Thingstad, S Våge, C Watkins, T Westberry, and KD Bidle (2020) “Temperate infection in a canonically virulent host-virus system” *Nature Communications* doi:10.1038/s41467-020-18078-4

Krause JW, MA Brzezinski, J Largier, HM McNair, M Maniscalco\*, KD Bidle, AE Allen, and **K Thamatrakoln** (2020) “The hierarchy of physical and biological factors as drivers of phytoplankton spatial distribution in the northern California Current” *Limnology and Oceanography* 65:1974-1989

- Kranzler C\*, JW Krause, MA Brzezinski, BR Edwards, WP Biggs\*, M Maniscalco\*, JP McCrow, BAS Van Mooy, KD Bidle, AE Allen, and **K Thamatrakoln** (2019) "Silicon limitation facilitates virus infection and mortality of marine diatoms" *Nature Microbiology* 4:1790–1797
- Lampe RH, EL Mann, NR Cohen, CP Till, **K Thamatrakoln**, MA Brzezinski, KW Bruland, BS Twining, and A Marchetti (2018). "Different iron storage strategies among bloom-forming diatoms" *Proceedings of the National Academy of Sciences* 115(52): E12275-E12284
- Thamatrakoln K**, D Talmy, L Haramaty, CJ Maniscalco\*, JR Latham\*, B Knowles, F Natale, MJL Coolen, MJ Follows, and KD Bidle (2018). "Light regulation of coccolithophore host-virus interactions" *New Phytologist* 221(3):1289-1302
- Lampe RH, NR Cohen, KA Ellis, KW Bruland, MT Maldonado, TD Peterson, CE Parker, S Bargu, MA Brzezinski, FI Kuzminov, **K Thamatrakoln**, BS Twining, A Marchetti (2018). Divergent gene expression among phytoplankton taxa in response to upwelling. *Environmental Microbiology* 20(8):3069-3082
- Laber CP, AF Carvalho, JE Hunter, JR Collins, BM Schieler, EBoss, M Coolen, G DiTullio, M Frada, AM Martins, A Vardi, Y Lehahn, **K Thamatrakoln**, CM Brown, LHaramaty, JE Ossolinski, HM Fredricks, BS Van Mooy, and KD Bidle (2018). "Coccolithovirus stimulation of carbon export in the North Atlantic" *Nature Microbiology* 3(5): 537-54
- Pasulka AL, **K Thamatrakoln**, SH Kopf, Y Guan, B Poulos, A Moradian, MJ Sweredoski, S Hess, MB Sullivan, KD Bidle, and V Orphan (2018). "BONCAT and nanoSIMS-based methods for the direct measurement of newly synthesized viral particles and the flow of carbon and nitrogen after host lysis" *Environmental Microbiology* 20(2):671-692
- Cohen NR, KA Ellis, RH Lampe, H McNair, , BS Twining, MT Maldonado, MA Brzezinski, FI Kuzminov, **K Thamatrakoln**, , CP Till, KW Bruland, WG Sunda, S Bargu, and A Marchetti (2017). "Diatom transcriptional and physiological responses to changes in iron bioavailability across ocean provinces" *Frontiers in Marine Science* 4(360)
- Collins JR, BR Edwards, **K Thamatrakoln**, JE Ossolinski, GR DiTullio, KD Bidle, SC Doney, and BAS Van Mooy (2015). The multiple fates of sinking particles in the North Atlantic Ocean. *Global Biogeochemical Cycles* 29:1471-1494
- Thamatrakoln K**, B Bailleul, CM Brown, MY Gorbunov, AB Kustka, M Frada, P Joliot, PG Falkowski, and KD Bidle (2013). A "Death-Specific Protein" in a marine diatom regulates photosynthetic responses to acute iron limitation and high light. *Proceedings of the National Academy of Sciences* 110(50): 20123-20128
- Thamatrakoln K**, O Korenovska, AK Niheu, and KD Bidle (2012). Whole-genome expression analysis reveals a role for death-related genes in stress acclimation of the diatom *Thalassiosira pseudonana*. *Environmental Microbiology* 14(1): 67-81
- Curnow P, Senior L, Knight M, **Thamatrakoln K**, Hildebrand M, and Booth P (2012). Expression, purification, and reconstitution of a diatom silicon transporter. *Biochemistry* 51(18): 3776-3785
- Thamatrakoln K** and AB Kustka (2009). When to say when: can excessive drinking explain silicon uptake in diatoms. *BioEssays* 31:322-327
- Vardi A, **K Thamatrakoln**, KD Bidle, and PG Falkowski (2008). Diatom genomes come of age. *Genome Biology* 9(12): 245-250
- Thamatrakoln K** and M Hildebrand (2008). Silicon uptake in diatoms revisited: a model for saturable and nonsaturable uptake kinetics and the role of silicon transporters. *Plant Physiology* 146:1397-1407
- Montsant A, AE Allen, S Coesel, A DeMartino, A Falciatore, M Mangogna, M Siaut, M Heijde, K Jabbari, U Maheswari, E Rayko, A Vardi, KE Apt, JA Berges, A Chiovitti, AK Davis, **K Thamatrakoln** MZ Hadi, TW Lane, JC Lippmeier, D Martinez, MS Parker, GJ Pazour, MA Saito, DS Rokhsar, EV Armbrust, and C Bowler (2007). Identification and comparative genomic analysis of signaling and regulatory components in the diatom *Thalassiosira pseudonana*. *Journal of Phycology* 43(3): 585-604

**Thamatrakoln K** and M Hildebrand (2007). Analysis of *Thalassiosira pseudonana* silicon transporters indicates distinct regulatory levels and transport activity through the cell cycle. *Eukaryotic Cell* 6(2): 271-279

**Thamatrakoln K**, AJ Alverson, and M Hildebrand (2006). Comparative sequence analysis of diatom silicon transporters: towards a mechanistic model of silicon transport. *Journal of Phycology* 42:822-34

**Thamatrakoln K** and M Hildebrand (2005). Approaches for functional characterization of diatom silicic acid transporters. *Journal of Nanoscience and Nanotechnology* 5(1): 158-166

Armbrust EV, JA Berges, C Bowler, BR Green, D Martinez, NH Putnam, S Zhou, AE Allen, KE Apt, M Bechner, MA Brzezinski, BK Chaal, A Chiovitti, AK Davis, MS Demarest, JC Detter, T Glavina, D Goodstein, MZ Hadi, U Hellsten, M Hildebrand, BD Jenkins, J Jurka, VV Kapitonov, N Kröger, WWY Lau, TW Lane, FW Larimer, JC Lippmeier, S Lucas, M Medina, A Montsant, M Obornik, MS Parker, B Palenik, GJ Pazour, PM Richardson, TA Rynearson, MA Saito, DC Schwartz, **K Thamatrakoln**, K Valentin, A Vardi, FP Wilkerson and DS Rokhsar (2004). The genome of the diatom *Thalassiosira pseudonana*: ecology, evolution, and metabolism. *Science* 306:79-86

Song A, A Patel, **K Thamatrakoln**, C Liu, D Feng, C Clayberger, and AM Krensky (2002). Functional domains and DNA-binding sequences of RFLAT-1/KLF13, a Kruppel-like transcription factor of activated T-Lymphocytes. *The Journal of Biological Chemistry* 277(33): 30055-30065

Song A, YF Chen, **K Thamatrakoln**, TA Storm, and AM Krensky (1999) RFLAT-1, A new zinc finger transcription factor that activates RANTES gene expression in T-Lymphocytes. *Immunity* 10: 93-103

## BOOK CHAPTERS

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Arsenieff L, K Kimura, CF Kranzler, A-C Baudoux, **K Thamatrakoln** (in review). “Diatom Viruses” in The Molecular Life of Diatoms, Eds A Falciatore and T Mock, Springer Nature (London, England)

Berges JA, Young E, **K Thamatrakoln**, AR Taylor (in prep). “From Genes to Ecosystems: using molecular information from diatoms to understand ecological processes” in Advances in Phytoplankton Ecology: applications of emerging technologies, Eds L Clementson, R Eriksen, and A Willis, Elsevier (Amsterdam, Netherlands)

## NON-PEER REVIEWED PUBLICATIONS AND PRODUCTS

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**Thamatrakoln K**. Crossing signals: On the road to recovery from nutrient deprivation in marine diatoms (2021). *Current Biology*.

Bidle KD, **Thamatrakoln K**, McDonnell J, Kurz J, Metzler C. (2017). Tools of Science [video series]. Rutgers University, New Brunswick, NJ: Tilapia Film. Available from [www.toolsofscience.com](http://www.toolsofscience.com)

Twining B, A Marchetti, **K Thamatrakoln** (2015). Workshop report: Biological, ecological, and biogeochemical implications of the iron availability mosaic in the California Upwelling Zone. OCB Newsletter Vol 8, No. 3; [http://www.us-ocb.org/publications/OCB\\_NEWS\\_FALL15.pdf](http://www.us-ocb.org/publications/OCB_NEWS_FALL15.pdf)

DeLong E and workshop participants (2013). Executive Summary: EarthCube Ocean ‘Omics Workshop Results. (<https://www.earthcube.org/document/2013/ocean-omics-end-user-workshop-executive-summary>)

**Thamatrakoln K** and M Hildebrand (2006). Building of silica. *Science First Hand* 5:56-60.

## MANUSCRIPTS IN PREPERATION (\* denotes advisee)

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Edwards BR, **K Thamatrakoln**, MD Johnson, JW Krause, H McNair, LZ Allen, AE Allen, KD Bidle, and BAS Van Mooy. “Infochemical signaling linked to diatom bloom decline and viral infection” Targeted for *ISME J*

Maniscalco M\*, MA Brzezinski, JW Krause, J Jones, HM McNair, LZ Allen, AE Allen, KD Bidle, and **K Thamatrakoln**. “Molecular insights into silicon limitation of natural diatom populations” Targeted for *Limnology and Oceanography*

### **FELLOWSHIPS, AWARDS, and HONORS**

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2013 ASLO Early Career Travel Award  
 2007-2009 Rutgers University, Institute for Marine and Coastal Sciences Postdoctoral Fellowship  
 2006 Harold C. Bold Award for Outstanding Student Oral Presentation  
 2006 Hoshaw Travel Award, 60<sup>th</sup> Meeting of the Phycological Society of America  
 2004 Gordon Research Conference Travel Award  
 2003 North American Diatom Symposium Student Travel Award  
 2003 Art Proceeds Fellowship  
 2003 David Freeman Memorial Fund Fellowship  
 2003 UCSD’s Center for Teaching Development recognition for exemplary teaching

### **INVITED DEPARTMENTAL SEMINARS**

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2020 Marine Science Institute, University of Texas (Austin, TX). “Shunt or shuttle? Nutrient-driven biogeochemical consequences of diatom host-virus interactions”  
 2019 National Oceanography Centre (Southampton, England). Ocean Technology and Engineering Group, “Looking through glass: how dynamic microbial interactions drive silicon biogeochemistry”  
 2019 Virginia Institute of Marine Sciences (Williamsburg, VA). “Looking through glass: how dynamic microbial interactions drive silicon biogeochemistry”  
 2017 Rutgers University (New Brunswick, NJ). Department of Microbiology and Biochemistry, “Looking through glass: how dynamic microbial interactions drive silicon biogeochemistry”  
 2016 Massachusetts Institute of Technology (Boston, MA). Department of Earth, Atmospheric, and Planetary Sciences, “A multi-faceted approach to understanding silicon cycling in the California Coastal Upwelling System”  
 2015 Rutgers University (New Brunswick, NJ). Department of Microbiology and Biochemistry, “Molecular-based approaches for understanding silicon biogeochemistry in the ocean”  
 2015 Woods Hole Oceanographic Institute (Woods Hole, MA). Department of Biology, “Deciphering the molecular ecophysiology of eukaryotic phytoplankton”  
 2015 University of Pierre et Marie Curie (Paris, France). Laboratory of Computational and Quantitative Biology, “Light-regulated responses to nutrient limitation and viral infection in marine microalgae”  
 2013 University of British Columbia (Vancouver, Canada). Department of Botany, “Molecular Insights into the Ecological Success of Diatoms in the Modern Ocean”  
 2012 Old Dominion University (Norfolk, VA). Department of Ocean, Earth and Atmospheric Science, “Molecular insights into the ecological success of diatoms in the modern ocean”  
 2011 Lamont-Doherty Earth Observatory (Palisades, NY). Division of Biology, “Molecular insights into the ecological success of diatoms in the modern ocean”  
 2011 University of South Florida (St. Petersburg, FL). College of Marine Sciences, “Molecular insights into the ecological success of diatoms in the modern ocean”  
 2011 Texas A& M University (Corpus Christi, TX). Department of Life Sciences, “Molecular insights into the ecological success of diatoms in the modern ocean”  
 2010 Institut de Biologie Physico-Chimique (Paris, France). “Molecular and physiological response to iron limitation in the centric diatom, *Thalassiosira pseudonana*”  
 2010 Rutgers University (New Brunswick, NJ). Institute of Marine and Coastal Sciences, “Over-expression of a death specific protein in the diatom *Thalassiosira pseudonana* alleviates Fe stress”  
 2006 Rutgers University (New Brunswick, NJ). Institute of Marine and Coastal Sciences, “Molecular insights into the structure, function, and regulation of diatom silicon transporters”

2006 University of Rhode Island (Kingston, RI). Department of Cell and Molecular Biology, “Molecular insights into the structure, function, and regulation of diatom silicon transporters”

## CONFERENCE/SYMPOSIA PROCEEDINGS

### INVITED

American Society of Microbiology (Chicago, IL). “Host-virus interactions in marine ecosystems” 18-22 Jun 2020 (cancelled due to COVID-19)

Molecular Life of Diatoms (Norwich, England). “In Memoriam Mark Hildebrand” 14-18 July 2019

Gordon Research Conference: Marine Microbes (Lucca, Italy). “Looking through glass: how dynamic microbial interactions drive silicon biogeochemistry” 1-6 July 2018

Silicamics: Biogeochemistry and genomics of silicification and silicifiers (Victoria, BC). “Genomics of silicifiers” 6-8 Jun 2018

Microbiology Symposium at Rutgers: Cultivating Traditions, Currents Strengths, and New Frontiers (New Brunswick, NJ). “Molecular underpinnings of diatom silicification: Implications for silicon biogeochemistry in the ocean” 15 Feb 2016

Silicamics: Biogeochemistry and genomics of silicification and silicifiers (Brest, France). “Linking physiological and molecular aspects of diatom silicification” 21-25 Sept 2015

3<sup>rd</sup> Workshop on the Aqueous Chemistry and Biochemistry of Silicon: Silicon by the Sea (San Diego, CA). “Diatom Silicon Transport” 11-13 Dec 2009

### ORAL (underline denotes presenter; asterisk denotes advisee)

Ocean Sciences Meeting (16-21 Feb 2020; San Diego, CA)

Kranzler C\*, JW Krause, MA Brzezinski, BR Edwards, WP Biggs\*, M Maniscalco\*, JP McCrow, BAS Van Mooy, KD Bidle, AE Allen, and **K Thamatrakoln** “Biogeochemical consequences of diatom-virus interactions in the California Current Ecosystem”

Maniscalco M\*, MA Brzezinski, H McNair, JW Krause, and **K Thamatrakoln** “Diatom community transcriptomic response to nitrate and silicon limitation”

Knowles B, J Bonachela, M Behrenfeld, K Bondoc, BB Cael, CA Carlson, N Cieslik, B Diaz, HL Fuchs, J Graff, J Grasis, K Halsey, L Haramaty, CT Johns, F Natale, JI Nissimov, B Schieler, **K Thamatrakoln**, TF Thingstad, S Våge, C Watkins, T Westberry, and KD Bidle “Temperate infection in a canonically virulent virus-host system”

**Thamatrakoln K**, Kranzler C\*, MA Brzezinski, NR Cohen, RH Lampe, J Mack, JR Latham, D Talmy, BS Twining, A Marchetti “Synergistic impacts of viral infection and iron limitation on diatom-mediated biogeochemical cycling”

Molecular Life of Diatoms (14-18 Jul 2019; Norwich, England)

Kranzler C\*, JW Krause, MA Brzezinski, BR Edwards, WP Biggs\*, M Maniscalco\*, JP McCrow, BAS Van Mooy, KD Bidle, AE Allen, and **K Thamatrakoln** “Silicon limitation facilitates virus infection and mortality of marine diatoms”

Ocean Sciences Meeting (11-16 Feb 2018; Portland, OR)

**Thamatrakoln K**, D Talmy, L Haramaty, CJ Maniscalco, JR Latham, B Knowles, F Natale, MJL Coolen, MJ Follows, and KD Bidle. “Light regulation of coccolithophore host-virus interactions”

Kranzler C\*, J Mack\*, W Biggs\*, JR Latham\*, D Talmy, F Natale and **K Thamatrakoln**. “The interplay between diatom-virus dynamics and nutrient availability”

Maniscalco M\*, H McNair, R Lampe, NR Cohen, KA Ellis, A Marchetti, BS Twining, CP Till, MT Brown, T Coale, KW Bruland, MA Brzezinski, and **K Thamatrakoln**. “Molecular drivers behind increased Si:N uptake in an iron stressed diatom assemblage”

Laber CP, AF Carvalho, JE Hunter, JR Collins, BM Schieler, E Boss, MJ Coolen, G DiTullio, M Frada, AM Martins, A Vardi, Y Lehahn, **K Thamatrakoln**, CM Brown, LHaramaty, JE Ossolinski, HM Fredricks, BS Van Mooy, and KD Bidle. “Coccolithovirus stimulation of carbon export in the North Atlantic”

Lampe RH, E Mann, NR Cohen, CP Till, **K Thamatrakoln**, FI Kuzminov, MA Brzezinski, KW Bruland, BS Twining, and A Marchetti, “Different iron storage strategies among bloom-forming diatoms”

Molecular Life of Diatoms (9-13 Jul 2017; Kobe, Japan)

Kranzler C\*, J Mack\*, D Talmy, FH Natale and **K Thamatrakoln**. “The interplay between diatom-virus dynamics and nutrient availability”

Gulf of Mexico Oil Spill and Ecosystem Science Conference (6-9 Feb 2017; New Orleans, LA)

Cole LK\*, JW Krause, JR Latham, and **K Thamatrakoln**. “Stress induced variation in transparent exopolymer particle size frequency distribution”

ASLO Aquatic Sciences (26 Feb – 3 Mar 2017; Honolulu, HI).

Cohen NR, RH Lampe, HM McNair, KA Ellis, FI Kuzminov, MA Brzezinski, **K Thamatrakoln**, MT Maldonado, CE Parker, KW Bruland, BS Twining, and A Marchetti. “Coupling nutrient dynamics with metatranscriptomics to elucidate the responses of diatoms to changing iron availability across ocean provinces”

Gulf of Mexico Oil Spill and Ecosystem Science Conference (6-9 Feb 2017; New Orleans, LA)

Cole LK\*, JW Krause, **K Thamatrakoln**. “Effect of oiling on transparent exopolymer particle size frequency distribution”

Iron Bruland Post-Cruise Workshop (19-21 May 2015; Chapel Hill, NC)

Kuzminov F, MY Gorbunov, **K Thamatrakoln**. Variability in Photophysiological parameters of phytoplankton

**Thamatrakoln K**. Flow cytometry analysis of bacterial and viral populations.

Molecular Life of Diatoms (7-10 Jul 2015; Seattle, WA)

**Thamatrakoln K**, KD Bidle, HM McNair, M Maniscalco\*, MA Brzezinski, BR Edwards, BAS Van Mooy, MD Johnson, AE Allen, LZ Allen, and JW Krause. “A multi-faceted study of diatom bloom dynamics and silicon cycling in the California Coastal Upwelling System”

Maniscalco M\*, MA Brzezinski, and **K Thamatrakoln**. “Building bridges between molecular and physiological aspects of diatom silicification”

ASLO Aquatic Sciences (22-27 Feb 2015; Granada, Spain).

**Thamatrakoln K**, CJ Maniscalco, HF Fredricks, LZ Allen, AE Allen, BAS Van Mooy, and KD Bidle. “Differential effects of viral infection on host physiology in two strains of the diatom, *Chaetoceros tenuissimus*”

**Thamatrakoln K**, CJ Maniscalco, L Haramaty, LZ Allen, AE Allen, BAS Van Mooy, and **KD Bidle**. “The role of light and photosynthesis in viral infection of marine, eukaryotic photoautotrophs”

Edwards BR, JR Collins, HF Fredricks, JE Ossolinski, HM McNair, MA Brzezinski, JW Krause, **K Thamatrakoln**, KD Bidle, and BAS Van Mooy. “Comparative lipidomics link bloom decline to infochemical production in the California upwelling zone”

The Molecular Life of Diatoms (5-9 Jun 2011; Atlanta, GA)

**Thamatrakoln K**, CM Brown, AB Kustka, B Bailleul, P Joliot, MY Gorbunov, PG Falkowski, and KD Bidle. “Over-expression of a death-specific protein homolog in the diatom *Thalassiosira pseudonana* alleviates iron stress”

Bidle KD, **K Thamatrakoln**, B Santa Maria, and DJ Hirsh. “Fundamentally different mechanisms of cellular nitric oxide production between pennate and centric diatoms?”

ASLO Aquatic Sciences 13-18 Feb 2011; San Juan, Puerto Rico).

**Thamatrakoln K**, AB Kustka, MY Gorbunov, and KD Bidle. “Over-expression of a death-specific protein homolog in the centric diatom, *Thalassiosira pseudonana* alleviates iron stress”

60<sup>th</sup> Meeting of the Phycological Society of America (6-12 Jul 2006; Juneau, AK)

**Thamatrakoln K**, AJ Alverson, and M. Hildebrand. “Comparative sequence analysis of diatom silicon transporters: towards a mechanistic model of silicon transport”

POSTER (underline denotes presenter; asterisk denotes advisee)

Ocean Sciences Meeting (16-21 Feb 2020; San Diego, CA)

Knowles B, J Bonachela, M Behrenfeld, K Bondoc, BB Cael, CA Carlson, N Cieslik, B Diaz, HL Fuchs, J Graff, J Grasis, K Halsey, L Haramaty, CT Johns, F Natale, JI Nissimov, B Schieler, **K Thamatrakoln**, TF Thingstad, S Våge, C Watkins, T Westberry, and KD Bidle “Temperate infection in a canonically virulent virus-host system”

**Thamatrakoln K**, Kranzler C\*, MA Brzezinski, NR Cohen, RH Lampe, J Mack, JR Latham, D Talmy, BS Twining, A Marchetti “Synergistic impacts of viral infection and iron limitation on diatom-mediated biogeochemical cycling”

Ocean Sciences Meeting (11-16 Feb 2018; Portland, OR)

LK Cole\*, JW Krause, and **K Thamatrakoln**, “Phytoplankton Derived Transparent Exopolymer Particle Response to Oiling”

DK AlRoumi\*, **K Thamatrakoln**, and KD Bidle, “Virus Infection and TEP Production in Two *Chaetoceros* sp.”

T Bittar, S Anderson, K Mayers, P Duffy, K Bulski, **K Thamatrakoln**, KD Bidle, and E Harvey, “Partitioning Between Pools of Particulate and Dissolved Organic Carbon in an Induced Phytoplankton Bloom”

Aresty Summer Undergraduate Research Symposium (4 Aug 2017; Rutgers University)

Qualim K\*, C Kranzler\*, and **K Thamatrakoln**. “The link between oxidative stress, iron limitation, and diatom-virus infection dynamics”

Research Internship in Ocean Sciences Research Symposium (11 Aug 2017; Rutgers University)

Kristan N\*, JR Latham\*, and **K Thamatrakoln**. “The impact of light and UV radiation on the Coccolithophore-infecting virus EhV201”

Molecular Life of Diatoms (9-13 Jul 2017; Kobe, Japan)

Lampe RH, NR Cohen, KA Ellis, KW Bruland, MT Maldonado, MA Brzezinski, **K Thamatrakoln**, BS Twining, and A Marchetti. “Divergent gene expression among phytoplankton taxa in response to upwelling” \*Best student poster award

Gulf of Mexico Oil Spill and Ecosystem Science Conference (6-9 Feb 2017; New Orleans, LA)

Latham JR\*, LK Cole, FH Natale, JW Krause, and **K Thamatrakoln**. “Assessing the impact of phytoplankton community diversity on the ecosystem response to oil perturbation”

3rd Annual Southeastern Biogeochemical Symposium (11-13 Mar 2016; Knoxville, TN)

Cole LK\*, JW Krause, and **K Thamatrakoln**. “Seasonal Variability in Phytoplankton Responses to Water Accommodated Petroleum Hydrocarbons in the Northern Gulf of Mexico”

ASLO/AGU Ocean Sciences Meeting (21-26 Feb 2016; New Orleans, LA)

Cole LK\*, JW Krause, and **K Thamatrakoln**. “Seasonal Variability in Phytoplankton Responses to Water Accommodated Petroleum Hydrocarbons in the Northern Gulf of Mexico”

Pasulka A, **K Thamatrakoln**, B Poulos, KD Bidle, MB Sullivan, and VJ Orphan. “Interrogating host-virus interactions and elemental transfer using NanoSIMS”

2016 Oil Spill and Ecosystem Science Conference (1-4 Feb 2016; Tampa, FL)

Cole LK\*, JW Krause, and **K Thamatrakoln**. “Annual Variation in Phytoplankton Abundance due to water accommodated petroleum hydrocarbon exposure in the Northern Gulf of Mexico”

2015 Undergraduate Research Symposium (24 Apr 2015; New Brunswick, NJ)

O’Hene N\* and **K Thamatrakoln**. “Gene silencing in the diatom *Phaeodactylum tricorutum*: Generation of antisense and inverted repeat expression constructs”

Jayanathan T\* and **K Thamatrakoln**. “Developing Methods for the Quantification of Single-Stranded DNA Viruses”

Shedlovskiy D\* and **K Thamatrakoln**. “Constructing knockdown clones of the Death-Specific Proteins in the diatom, *Thalassiosira pseudonana*”



Ocean Carbon and Biogeochemistry Summer Workshop (21-24 Jul 2014; Woods Hole, MA).

Edwards BR, JE Ossolinski, **K Thamatrakoln**, KD Bidle, HM McNair, MA Brzezinski, JW Krause, and BAS Van Mooy. “The response of particle associated microbes to diatom derived oxylipins: enhanced nutrient recycling on sinking particles during bloom decline”

Collins JR, BR Edwards, **K Thamatrakoln**, JE Ossolinski, GR DiTullio, SC Doney, and BAS Van Mooy. “Constraints on observationally intractable aspects of the mesopelagic carbon cycle: Comparison of direct observations and results from multi-parameter sensitivity analyses”

ASLO Aquatic Sciences (23-28 Feb 2014; Honolulu, HI).

**Thamatrakoln K**, HM McNair, JW Krause, and MA Brzezinski. “Linking physiological and molecular aspects of diatom silicification”

Collins JR, JE Ossolinski, **K Thamatrakoln**, J Tagliaferre, and BAS Van Mooy. Budgeting respiratory loss processes: explaining observed variation in particle flux attenuation at seven stations in the North Atlantic

Edwards BE, **K Thamatrakoln**, JE Ossolinski, KD Bidle, and BAS Van Mooy. “The effects of oxylipins on particle associated microbial communities: implications for the silica cycle”

ASLO Aquatic Sciences (17-22 Feb 2013; New Orleans, LA).

**Thamatrakoln K**, C Laber, CJ Maniscalco, and KD Bidle. “Shedding light on viral infection of diatoms and coccolithophores: assessing the interplay between photosynthesis and host-virus interactions”

Marine Microbes, Gordon Research Conference (4-9 Jul 2010; Tilton, NH).

**Thamatrakoln K**, O Korenovska, S Brown, LM Seyler, and KD Bidle. “A matter of life or death? A role for programmed cell death genes in the stress response of the diatom, *Thalassiosira pseudonana*”

Evolutionary Genetics and Genomics Workshop (30 Oct 2009; New Brunswick, NJ)

**Thamatrakoln K**, O Korenovska, and K.D. Bidle. “Probing the molecular mechanism of programmed cell death in the diatom, *Thalassiosira pseudonana*, using whole-genome microarray analysis”

Brown S, **K Thamatrakoln** and KD Bidle. “Putative Role of Death Specific Protein in the Model Diatom *Thalassiosira pseudonana*”

Research Experience in Ocean Science Symposium (7 Aug 2009; New Brunswick, NJ)

Brown S, **K Thamatrakoln**, and KD Bidle. “Putative role of death specific protein in the model diatom *Thalassiosira pseudonana*”

ASLO Aquatic Sciences (25-30 Feb 2009; Nice, France).

**Thamatrakoln K**, O Korenovska, and KD Bidle. “Probing the molecular mechanism of programmed cell death in the diatom, *Thalassiosira pseudonana* using whole-genome microarray analysis”

Aresty Summer Undergraduate Research Symposium (14 Aug 2007; New Brunswick, NJ)

Korenovska O\*, **K Thamatrakoln**, and KD Bidle. “Evidence for programmed cell death in the heterotrophic diatom *Nitzschia alba*”

ASLO/TOS Ocean Research Meeting (15-20 Feb 2004; Honolulu, HI).

**Thamatrakoln K** and M Hildebrand. “Isolating new silicic acid transporters from diatoms for comparative sequence analysis”

Membrane Transport Proteins, Gordon Research Conference (15-20 Jun 2003; Les Diablerets, Switzerland).

**Thamatrakoln K** and M Hildebrand. “Characterization of diatom silicon transporters, a novel class of membrane transport proteins”

17<sup>th</sup> Annual North American Diatom Symposium (21-26 Oct 2003; Islamorada, FL).

**Thamatrakoln K**, D Shoemaker\*, and M Hildebrand. “Comparative sequence analysis of diatom silicon transporters”

#### **CRUISE AND FIELD PARTICIPATION** (asterisk denotes student participant)

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**Research Scientist:** Long-Term Ecological Research program (LTER; 27 Dec 2018 – 13 Feb 2019). R/V *Laurence M Gould* LMG19-01; Chief Scientist: Deborah Steinberg, Virginia Institute of Marine Science

**Co-PI:** MesoHux: Mesocosm-based study to investigate the role of nutrients and light on algal host-virus interactions and subsequent impacts on carbon export, nutrient biogeochemistry, microzooplankton grazing, and vertical structuring of phytoplankton communities (6 May – 2 Jun 2017). Norwegian National Mesocosm Center at the Espegrand Marine Biological Station, Bergen, Norway

**Co-PI:** ACER-sponsored Fall Mesocosm Experiment, Dauphin Island, AL (17-21 Oct 2016)

**Co-PI:** ACER-sponsored Spring Mesocosm Experiment, Dauphin Island, AL (18-22 Apr 2016)

Latham JR\*, Coastal Louisiana Silicon Cycling (CLASiC; 26 Aug-5 Sept 2016; Cocodrie, LA – Cocodrie, LA). R/V *Pelican* PE17-04

**Chief Scientist:** Molecular Underpinnings of Silicification in the California Current (MUSiCC; 19 Apr-2 May 2015; Newport, OR – Port Hueneme, CA). R/V *Oceanus* OC1504a

**Research Scientist:** Iron Mosaics in the Central California Current System (3-26 Jul 2014; San Diego, CA – San Diego, CA). R/V *Melville* MV1405; Chief Scientist: Ken Bruland, UC Santa Cruz

**Research Scientist:** DYEatom Cruise (27 Jun-6 Jul 2013; Moss Landing, CA – Moss Landing, CA). R/V *Point Sur* PS1312; Chief Scientist: Jeffrey Krause, Dauphin Island Sea Lab

**Research Scientist:** North Atlanctic Virus Infection of Coccolithophore Expedition, (NA-VICE; 15 Jun-14 Jul 2012; Ponta Delgada, Azores – Reykjavik, Iceland). R/V *Knorr* KN203-3; Chief Scientist: Kay Bidle, Rutgers University

**Research Scientist:** BLATZ II (21 Apr- 4 May 2012; Woods Hole, MA – Bermuda). R/V *Knorr* KN203-1; Chief Scientist: Benjamin Van Mooy, Woods Hole Oceanographic Institute

## **WORKSHOP PARTICIPATION**

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Ocean, Carbon, Biogeochemistry Workshop (20-23 Jul 2015; Woods Hole, MA)

Post-Cruise Workshop: “An Iron Limitation Mosaic within the Central California Current System” (29-21 May 2015; Chapel Hill, NC). Invited participant and member of the planning committee

NSF EarthCube “Ocean Omics” Workshop (21 -22 Aug 2013; Catalina Island, CA). Invited participant

Ocean, Carbon, Biogeochemistry Workshop (22-25 Jul 2013; Woods Hole, MA)

## **ADVISING**

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### GRADUATE STUDENTS

Austin Grubb, Department of Marine and Coastal Sciences, Rutgers University (Ph.D., 2017-present) Co-Advisor

Michael Maniscalco, Ecology, Evolution, and Marine Biology program, University of California, Santa Barbara (Ph.D., 2014-present). Co-Advisor

Liesl Cole, Department of Marine Sciences, University of South Alabama (M.S., 2015-present). Co-Advisor

Dina AlRoumi, Graduate Program in Microbial Biology, Rutgers University (Ph.D., 2013-present). Co-Advisor

Maeve Hubbard, Visiting Scientist (2017) Cambridge University

### *Thesis Committee Member*

Robert Bornhorst, Graduate Program in Earth and Environmental Science, Rutgers University (2021-present)

Benjamin Diaz, Graduate Program in Microbial Biology, Rutgers University (2016-present)

Christopher Johns, Graduate Program in Oceanography, Rutgers University (2015-present)

Brittany Schieler, Graduate Program in Oceanography, Rutgers University (Ph.D awarded in 2019)

Marissa Borrego, Graduate Program in Earth and Environmental Science, Rutgers University (M.S. awarded in 2016)

Daniel Cardinale, Graduate Program in Microbiology and Molecular Genetics, Rutgers University (Ph.D. awarded in 2015)

UNDERGRADUATE STUDENTS

Alexandra Matthews, G.H. Cook Honors Program Student (2018-2019), “Organic matter associated with calcification in *Emiliana huxleyi* and its relationship to viral infection” (served as ‘Reader on thesis committee)

William Biggs, Undergraduate Intern (2017-2019)

Dominique Iaccarino, Summer Research Intern (2018)

Skyler Kilgore, NSF Research Experience for Undergraduates Student (2018) “Effect of Reactive Oxygen Species on *Chaetoceros tenuissimus* Diatom Virus Interactions”,

Kenza Oualim, Undergraduate Intern (2017-2018) and Aresty Summer Research Program Student (2018) “The link between oxidative stress, iron limitation, and diatom-virus infection dynamics”

Sean O’Callaghan, Undergraduate Intern (2017-2018)

James Mack, Independent Research Intern (2016-2017) and Senior Honor’s Thesis student (2017-2018) “Characterizing the role of oxidative stress during viral infection of the diatom *Chaetoceros tenuissimus*”

Nathaniel Kristan, NSF Research Experience for Undergraduates Student (2017) “The impact of light and UV radiation on the coccolithophore-infecting virus, EhV201”

Yui Kurakake, G.H. Cook Honors Program Student (2016-2017) “The effect of irradiance on the infectivity of algal viruses” (Co-advised with Kay Bidle)

Lauren Palena, G.H. Cook Honors Program Student (2016-2017). “The effects of nitrogen and phosphorus on coccolithophore physiology and viral infectivity” (served as “Reader” on thesis committee)

Rebecca Gardella, G.H. Cook Honors Program Student (2015-2016) “Elucidating the interplay between transparent exopolymeric particle production and cell aggregation during viral infection of the coccolithophore, *Emiliana huxleyi*” (served as “Reader” on thesis committee)

Daniel Shedlovskiy, Independent Research Intern (2013-2015) and Molecular Biology Honors Program Student (2015-2016) “The role of Death-Specific Protein the molecular regulation of photosynthesis in the diatom, *Thalassiosira pseudonana*”

Ian Griffiths, Undergraduate Intern (2015)

Jason Latham, Independent Research Intern (2015-2016) “Characterizing the role of the pentose phosphate pathway during viral infection of the coccolithophore, *Emiliana huxleyi*” (Co-advised with Kay Bidle)

Nanaama O’Hene, Aresty Undergraduate Research Fellow (2014-2015) “Gene silencing in the diatom *Phaeodactylum tricorutum*: Generation of antisense and inverted repeat expression constructs”

Tiana Jayanathan, Aresty Undergraduate Research Fellow (2014-2015) “Developing methods for the quantification of single-stranded DNA viruses”

Kamil Sochacki, Undergraduate Intern (2013)

Christopher Maniscalco, Undergraduate Intern (2011-2013)

Tess Bender, Undergraduate Intern (2011)

Michael Maniscalco, Independent Research Intern (2010-2011) “Over-expression of metacaspases in the diatom, *Thalassiosira pseudonana*” (Co-advised with Kay Bidle)

Amelia Min-Venditti, NSF Research Experience for Undergraduates Student (2010) “Assessing the role of Death-Specific Proteins to stress adaptation in *Thalassiosira pseudonana* using functional genomics” (Co-advised with Kay Bidle)

Sara Brown, NSF Research Experience for Undergraduates Student (2009). “Putative role of Death Specific Protein in the model diatom *Thalassiosira pseudonana*” (Co-advised with Kay Bidle)

Olga Korenovska, Independent Research Intern (2007-2009), Aresty Summer Research Intern (2009) “Evidence for PCD in the heterotrophic diatom, *Nitzschia alba*” and NSF Research Experience for

Undergraduates Student (2010) “Assessing a role for metacaspases in the execution of PCD in the diatom, *Thalassiosira pseudonana*” (Co-advised with Kay Bidle)

Dorinda Shoemaker, UC San Diego Summer Undergraduate Research Fellow (2003)

#### POSTDOCTORAL RESEARCHERS

2016-present Dr. Chana Kranzler  
2017-2021: Simons Foundation Postdoctoral Fellow in Marine Microbial Ecology  
2016-2017: Institute for Earth, Ocean, and Atmospheric Sciences Postdoctoral Fellow

#### TEACHING

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Spring 2020 Instructor, “Silicification” Small Private Online Course “The Silica School”  
Spring 2020 Instructor, “Science, Pseudoscience, and Society”, Online Course, Rutgers University  
Fall 2019 Guest Lecturer, “Marine Viruses”, Virology, Rutgers University  
Guest Lecturer, “Marine Viruses”, Microbial Ecology and Diversity, Rutgers University  
Fall 2018 Guest Lecturer, “Functional Genomics” Molecular Microbial Oceanography, Rutgers University  
Fall 2017 Co-Instructor, Special Topics Seminar, “Molecular Approaches to Microbial Oceanography, Rutgers University  
Fall 2013 Guest Lecturer “Functional Genomics”, Molecular Oceanography Rutgers University  
Fall 2009 Guest Lecturer “Functional Genomics”, Molecular Oceanography Rutgers University  
Fall 2003 Teaching Assistant, Molecular Biology, UC San Diego  
Winter 2003 Teaching Assistant, Biochemical Techniques Laboratory, UC San Diego  
Fall 2002 Teaching Assistant, Biochemical Techniques Laboratory, UC San Diego

#### SERVICE

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##### UNIVERSITY

Member, Faculty Compensation Program Committee (2015)

##### SCIENTIFIC COMMUNITY

Panelist, “Picture a Scientist”, All-Female panel on diversity in STEM (6 Oct 2020)  
Steering Committee Member, The 5<sup>th</sup> Molecular Life of Diatom Meeting (14-19 Jul 2019; Norwich, England)  
Steering Committee Member, The 4<sup>th</sup> Molecular Life of Diatom Meeting (9-13 Jul 2017; Kobe, Japan)  
NSF Panel Service, Biological Oceanography (14-18 Nov 2016)  
Session Co-Chair, ASLO Ocean Sciences Meeting (23-38 Feb 2014: Honolulu, HI); Session 077: Harnessing new tools and approaches to understand diatom ecology and their role in elemental cycling  
Ad-Hoc Reviewer (2013-present): National Science Foundation (Biological Oceanography, Integrative Organismal Systems, Research Initiation Grants)  
Ad-Hoc Reviewer (2011-present): Current Biology, Frontiers in Microbiology, Genome Biology, Journal of Phycology, Journal of Plankton Research, Journal of Experimental Marine Biology and Ecology, Life, Limnology and Oceanography, Plant Physiology and Biochemistry, Proceedings of the National Academy of Science, Scientific Reports

##### GENERAL PUBLIC

Team Manager: Riverbank Youth Hockey Association, New York, NY (2016-2018).  
Co-Producer: Tools of Science Educational Video, “Asking Testable Questions” (2016). Filmed and directed by Tilapia Film, LLC (<http://toolsofscience.org>). Co-Producers: Kay Bidle and Janice McDonnell  
Visiting scientist: William T. Harris Elementary School, New York, NY (3 Jun 2016). Conducted a science experiment demonstrating density to Ms. Jamie Reichelt’s 1<sup>st</sup> grade class

Visiting scientist: William T. Harris Elementary School, New York, NY (10 Feb 2016). Conducted a science experiment on proper handwashing techniques to Ms. Jamie Reichelt's 1<sup>st</sup> grade class

Judge: Middle School Science Fair, New Brunswick, NJ (2013)

Visiting scientist: William T. Harris Elementary School, New York, NY (1 Feb 2012). Conducted a science experiment demonstrating density to Ms. Jamie Reichelt's 1st grade class

Visiting scientist: William T. Harris Elementary School, New York, NY (8 Feb 2011). Sink or Float science demo for Ms. Megan Stein's Kindergarten class

Visiting scientist: William T. Harris Elementary School, New York, NY (12 Jan 2011). Conducted a science experiment on proper handwashing techniques for Ms. Megan Stein's Kindergarten class

Visiting scientist: William T. Harris Elementary School, New York, NY (14 Oct 2010). Conducted a science experiment on bioluminescence for Ms. Megan Stein's Kindergarten class