

APPENDIX.
Supplementary Information to selected Proposals
CLAS Committee on Curricula and Courses
January 27, 2004

2004-4 (proposed syllabus follows CV)

Heidi M. Dierssen
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Education

2000 Ph.D., Physical Geography/Marine Science
Institute for Computational Earth System Science, University of California Santa Barbara, Santa Barbara, California
Title: Ocean Color Remote Sensing of Chlorophyll and Primary Production West of the Antarctic Peninsula
Advisor: Raymond Smith

1989 M.S., Biological Sciences, Stanford University, California.

1989 B.S., Biological Sciences, Stanford University, California, with honors.

Research

9/03-present Assistant Professor in Residence. University of Connecticut. Department of Marine Science.

9/03-present Research Scientist. Center for Integrative Coastal Observation, Research and Education. California State University.

8/02-8/03 Postdoctoral Fellow. Monterey Bay Aquarium Research Institute
Topic: Three-dimensional analysis of physical and biological coupling in the Monterey Bay using AVIRIS airborne imagery
Sponsor: John Ryan

11/00-8/02 Postdoctoral Fellow. Moss Landing Marine Laboratories. California State University.

Topic: Hyperspectral remote sensing of benthic and submerged vegetation in the coastal zone
Sponsor: Richard Zimmerman

3/99-11/00 Visiting Research Scientist. Rosenstiel School for Marine and Atmospheric Science. University of Miami.

9/97-9/00 NASA Earth System Science Fellow. Institute for Computational Earth System Science. University of California Santa Barbara.

9/93-6/97 Research Assistant. Institute for Computational Earth System Science
Funded by the Long-term Ecological Research Project, Palmer Station, Antarctica to study bio-optics and primary productivity of Antarctic Coastal Waters.

11/90-8/93 Associate Scientist. Environ Corporation, Emeryville California.
Estimated air toxics emissions and dispersion and conducted human health and environmental risk assessment.

9/88-6/89 Research Assistant. Jasper Ridge Biological Preserve, Stanford University, California.
Researched differential allocation of resources in male and female individuals of a dioecious shrub.

6/88-9/88 Research Assistant. Hopkins Marine Station, Monterey, California. Analyzed the classification system of calcareous marine sponges.

6/87-9/87 Research Assistant. Dept. of Genetics and Cell Biology, University of Minnesota.
Assisted in experiments designed to elucidate general cell behavior from the genetic manipulation of corn.

Teaching (*Evaluations: 1=excellent, 2=very good, 3=good, 4=fair, 5=poor*)

Instructor:

01/04-3/04 Graduate Seminar: Technology and remote sensing in coastal waters. University of Connecticut. Department of Marine Science

9/03-12/03 Marine Biology. University of Connecticut. Department of Marine Science.

9/98-12/98 Physical Geography Laboratory. Ventura Community College
Student overall evaluation of TA: N/A

9/97-12/97 Physical Geography Laboratory. Ventura Community College
Student overall evaluation of TA: N/A

6/97-8/97 Physical Geography. University of California Santa Barbara
Student evaluations of overall teaching quality: 1.7

Teaching Assistant:

9/98-12/98 Physical Geography- Univ. California Santa Barbara
Student overall evaluation of TA: N/A

1/98-3/98 Remote Sensing of the Oceans - Univ. California Santa Barbara
Student overall evaluation of TA: 1.2

9/97-12/97 Introduction to Oceanography - Univ. California Santa Barbara
Student overall evaluation of TA: 1.5

9/95-12/95 Introduction to Oceanography - Univ. California Santa Barbara
Student overall evaluation of TA: 1.7

Publications

Seibel, B.A., and H.M. Dierssen. 2003. Tip of the iceberg: Cascading trophic impacts of B-15A in the Ross Sea, Antarctica. *Biol. Bulletin*. 2025: 93-97.

Dierssen, H.M., R.C. Zimmerman, R.A. Leathers, T.V. Downes, and C.O. Davis. 2003. Ocean color remote sensing of seagrass and bathymetry in the Bahamas Banks by high resolution airborne imagery. *Limnology and Oceanography*. 48 (1, part 2): 456-463.
(http://aslo.org/lo/toc/vol_48/issue_1_part_2/)

Ryan, J., F. Chavez, J. Bellingham, E. Rienecker, H. Dierssen, R. Kudela, A. Vander Woude, R. Maffione, A. Fisher, H. Dierssen, Environmental processes in the Monterey Bay National Marine Sanctuary: Studies integrating AVIRIS and synoptic in situ sensing. *Proceedings from AVIRIS Workshop 2002*
(http://aviris.jpl.nasa.gov/docs/workshops/02_docs/2002_Ryan+_web.pdf).

Dierssen, H.M., R.C. Smith, and M. Vernet. 2002. Glacial meltwater dynamics in coastal waters west of the Antarctic Peninsula. *Proc. National Academy of Science*. 99(4):1790-1795.

Smith, R.C., K. Baker, H.M. Dierssen, S. Stammerjohn, M. Vernet. 2001. Variability of primary production in an Antarctic marine ecosystem as estimated using a multi-scale sampling strategy. *American Zoologist*. 41:40-56

Dierssen, H., and R. C. Smith. 2000. Bio-Optical properties and remote sensing ocean color algorithms for Antarctic Peninsula Waters. *Journal of Geophysical Research*. 105(C11): 26301-26312.

Dierssen, H. M., M. Vernet, and R. C. Smith. 2000. Optimizing models for remotely estimating primary production in Antarctic coastal waters. *Antarctic Science*. 12:20-32.

Dierssen, H.M., and R.C. Smith. Case 2 Antarctic coastal waters: the bio-optical properties of surface meltwater, in *Proc. Ocean Optics XV* [CDROM], edited by S. Ackleson and J. Marra, Off. of Nav. Res., Ocean, Atmos., and Space S&T Dept., 2000.

Dierssen, H. 2000. Ocean color remote sensing of chlorophyll and primary production west of the Antarctic Peninsula. PhD Thesis, University of California, Santa Barbara, Santa Barbara, CA.

Dierssen, H.M., and R.C. Smith, Estimation of irradiance just below the air-water interface, in *Proceedings Ocean Optics XIII*, edited by S. Ackleson and R. Frouin, Proc. SPIE Int. Soc. for Opt. Eng., 2963, 204-209, 1996.

Smith, R. C., Dierssen, H. M., and Vernet, M., 1996, Phytoplankton biomass and productivity in the Western Antarctic Peninsula Region. Ross, R. M., Hofmann, E. E., and Quetin, L. B., ed., *Foundations for Ecosystem Research West of the Antarctic Peninsula: AGU Antarctic Research Series*.

Submitted

Dierssen, H.M., and R.C. Zimmerman. Benthic ecology from space: Seagrass primary production over the Bahamas Banks. *Limnology and Oceanography*. (<http://www.mlml.calstate.edu/groups/ebl/articles.html>)

In prep

Ryan, J., H.M. Dierssen, R. Kudela, et al. Anatomy of a red tide in Monterey Bay. For submission to *Nature*.

Dierssen, H.M., J. Ryan, R. Kudela. In prep. Hyperspectral remote sensing of red tides using AVIRIS imaging spectroscopy in Monterey Bay.

Dierssen, H.M., J. Ryan. In prep. Aircraft mission planning for coastal water remote sensing: analysis of viewing geometry and atmospheric correction from AVIRIS ocean color imagery of Monterey Bay.

Dierssen, H.M., R.C. Zimmerman. In prep. Stability of seagrass primary production across the Bahamas Banks using multi-platform remote sensing..

Dierssen, H.M., and Smith, R.C. In prep. Backscattering and ocean color remote sensing in biogeochemical zones around the Antarctic.

Presentations

Eastern Pacific Ocean Conference (EPOC), Catalina, CA, Sep 24-27, 2003.

ASLO Ocean Sciences, Salt Lake City, Feb. 14, 2003.

Ocean Optics XVI. Santa Fe, NM. Nov. 17-22, 2002.

ASLO Ocean Sciences. Honolulu, HI, February 11-15, 2002.

Estuarine Research Foundation. St. Pete Beach, FL. November 4-8, 2001.

ASLO Aquatic Sciences Meeting. Albuquerque, NM. February 12-16, 2001.

Ocean Optics XV. Office of Naval Research. Monaco, October 16-20, 2000.

Ocean Optics XIV. Office of Naval Research and National Aeronautic Space Administration. Kailua-Kona, Hawaii, November 10-13, 1998.

AGU/ASLO 1998 Ocean Sciences Meeting, San Diego, February 9-13, 1998. Awarded Gold Star for Student Presentation.

ASLO Aquatic Sciences Meeting. Santa Fe, New Mexico. February 10-14, 1997.

Ocean Optics XIII. October 22-25. 1996.

AGU/ASLO 1996 Ocean Sciences Meeting, San Diego, February 12-16. 1996. Eos, Transactions, American Geophysical Union. Vol 76, No. 3, January 16, 1996. OS41C-06.

AGU/ASLO 1996 Ocean Sciences Meeting, February 12-16. 1996.

Invited Lectures

Scheduled lectures: University of Rhode Island. GSO. January 21, 2004
Lamont-Doherty
University of Connecticut, Dept. Marine Sciences,

Pacific Fisheries Laboratory. NOAA. Monterey, CA. March 15, 2002. Multi-platform remote sensing in coastal waters

Moss Landing Marine Labs. April 13, 2000. Remote sensing benthic algal in optically shallow waters

Naval Postgraduate School. March 8, 2000. SeaWiFS, Sea Ice and Seagrass: Challenges of remote sensing in coastal waters. Sponsor: Bill Garwood.

University of California Santa Cruz. March 7, 2000. SeaWiFS, Sea Ice and Seagrass: Challenges of remote sensing in coastal waters.

University of Southern Mississippi, Department of Marine Sciences. April 28, 1999. Bio-optical properties of Antarctic coastal waters.

Awards

2002-2004 MBARI Postdoctoral Fellowship

1997-2000 NASA Earth System Science Fellowship. Bio-optical Analysis of Primary Productivity and Glacial Land Cover Change in Antarctic Coastal Waters. NGT5-30063.

1997-1998 Merit Fellowship Geography Department. 1998. University of California Santa Barbara.

1997-1998 Nominated for GSA Excellence in Teaching Award.

1995 California Space Grant Fellowship. Bio-optical Modeling of the Southern Ocean. NGT-40005.

1989 Stanford University, Undergraduate Research Fellowship.

Current Grants

Project Title: Benthic Ecology from Space: Algorithms for Remote Sensing of Seagrass Primary Production from the MODIS Ocean Color Sensor

Funding Agency: NASA

Total Award: \$590,000

Award Period: 1 September 2003 – 31 August 2006

Effort: 50% as P.I.

Pending Grants

Project Title: Long Term Ecological Research: Quantifying global change on coral and seagrass systems in the Grand Bahamas Bank

Funding Agency: NSF LTER submission

Total Award: \$820,000

Award Period: 1 Nov 2004 - 1 Nov. 2010 (6 year increments)

Effort: 2-months salary as co-P.I.

Project Title: Mapping eelgrass beds in Long Island Sound using remote sensing video from a tethered Unmanned Aerial Vehicle (UAV)

Funding Agency: LISS USEPA

Total Award: \$195,833
Award Period: 1 Oct. 2004 - 30 Sep. 2006
Effort: 2-months salary each year

Project Title: Eelgrass habitat monitoring using remote sensing video from a tethered Unmanned Aerial Vehicle (UAV)
Funding Agency: NOAA CICEET
Total Award: \$225,000
Award Period: 1 June 2004 - 1 June 2006
Effort: 2-months salary as co-P.I.

Project Title: Bio-optical characterization of coastal waters using remotely sensed imagery from the high resolution hyperspectral CHRIS-PROBA sensor
Funding Agency: NSF/AAAS Women's International Science Collaboration
Total Award: \$4,000
Award Period: 1 July, 2004 - 31 July 2004
Effort: travel grant

Synergistic Activities

Primary Production Algorithm Round Robin 3. Ongoing. Jet Propulsion Laboratory, NASA. Comparison of models that estimate marine primary production from satellite measurements of ocean color.

Complex Systems Summer School. 1997. Sponsored by Santa Fe Institute, New Mexico. Scholarship through NSF. Introduction to complex behavior in mathematical, physical and biological systems.

Public Outreach

National Ocean Sciences Bowl. 2003. Moderator for regional Otter Bowl, Monterey, CA of competing high school teams.

National Ocean Sciences Bowl. 2002. Moderator for regional Otter Bowl, Monterey, CA of competing high school teams.

National Geography Awareness Week. Santa Barbara. 1999, 1998, 1997. Presentations on Antarctic biology to local elementary and high schools.

Senior Summer School. Santa Barbara. Summer 1998. Team taught a Marine Environment course for senior citizens.

New York City Urban Park Ranger. 1990. Lectured to community schools in Bronx, NY on ecology and wildlife biology. Led groups of adult and children on nature walks through Van Cortlandt Park, NYC.

Professional Affiliations

American Society of Limnology and Oceanography

American Geophysical Union

Estuarine Research Foundation

References

John Ryan, Ph.D.

Monterey Bay Aquarium Research Institute
7700 Sandholdt Rd.
Moss Landing, CA 95039
email: ryjo@mbari.org
Phone: (831)775-1978

Richard C. Zimmerman, Ph.D.

Moss Landing Marine Labs
8272 Moss Landing Road
Moss Landing, CA 95039
email: RZimmer197@aol.com
Phone: (831)771-4124

Raymond C. Smith, Ph.D.

Professor Emeritus
Geography Department
Institute for Computational Earth System Science
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Maria Vernet, Ph.D.

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Proposed Course Syllabus: **MARN 298 Technology for Remote Sensing of the Coastal Zone**

Meetings: (lec) T 2-5 pm, 3 credits

Class Structure:

1 hr lecture/intro., 0.5 hr paper discussion, break, 1.5 hour hands-on lab

Instructor: Dr. Heidi Dierssen
Office: Marine Sciences Bldg 285
Office hours: TBD
Phone: 860-405-9239
email:heidi.dierssen@uconn.edu

Reading list: Papers will be assigned for discussion

Grading: 30% - Exam
20% - Class Participation
50% - Final class project

This course will cover the general theory and application of remote sensing in the coastal zone. Students will gain a fundamental understanding of the types of datasets, the strengths and limitations of these datasets, and how to access, acquire, and manipulate imagery. Imagery from satellites (MODIS/SeaWiFS, Topex, Landsat, Hyperion, etc.), as well as imagery from aircraft (AVIRIS, PHILLS) will be discussed. Products will include temp., chlorophyll, winds, altimetry, and benthic characterization. Each student will develop a class project that will involve imagery obtained from their own study region.

Technology for remote sensing (MARN 298)

Jan	20	T	Introduction to remote sensing (platforms,
	27	T	Ocean color for chlorophyll and primary production
Feb	3	T	Sea surface temperature
	10	T	Satellite altimetry
	17	T	Winds, Develop topics for class project
	24	T	Sea ice

Mar	2	T	Benthic habitats (color, acoustics)
	9	T	NO CLASS, Spring Break
	16	T	Biogeochemical parameters (POC, TSM, DOM, pigments, sewage, etc.)
	23	T	In-situ instrumentation and platforms for remote sensing algorithm development & validation
	30	T	<i>Field trip</i> : Instrumentation for data validation
Apr	6	T	Aircraft imaging spectrometry
	13	T	LIDAR
	20	T	Looking to the future: hyperspectral? EXAM
	27	T	Class Presentations
May	5		<i>Final paper due</i>

2004-5

FREN 1xy. Magicians, Witches, Wizards: Parallel Beliefs & Popular Culture In France

List of topics and works :

Bouchard de Worms

Etienne de Bourbon

Merlin

Roman de Perceforest (first sabbath scene in French lit.)

Nostradamus

Jean Bodin, *Démonomanie des Sorciers*

De Lancre, *De l'inconstance des mauvais anges et des démons*

Montaigne, *De la force de l'imagination, Des boîteurs*

Gaufridi in Aix-en-Provence

Grandier in Louviers

L'“Affaire des Poisons”

The Count of Saint-Germain

Cagliostro

George Sand, *La Petite Fadette*

Michelet, *La Sorcière*

Edgar Quinet, *Merlin*

Colin de Plancy, *Dictionnaire infernal* (1863)

Almanachs diaboliques

Yourcenar, *Les songes et les sorts*

Jeanne Favret-Saâda, *Les mots, la mort, les sorts*

Maryse Condé, *Moi, Tituba, sorcière de Salem*

Claude Seignolle, *Les Evangiles du diable*

Films :

The Monk and the Witch

The Devils

Les Sorcières de Salem (The Crucible)

End of Appendix for Jan. 27, 2004