

NAME: Robert J. Chant, Ph.D.

ADDRESS: Institute of Marine and Coastal Sciences
Rutgers University
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New Brunswick, New Jersey 08901
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CITIZENSHIP: USA

UNDERGRADUATE EDUCATION:

State University of New York Buffalo, New York	B. S.	1985	Electrical Engineering
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GRADUATE EDUCATION:

State University of New York Stony Brook	M. S.	1991	Marine Science
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State University of New York Stony Brook	Ph.D.	1995	Oceanography
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POSTGRADUATE TRAINING:

Rutgers University Institute of Marine and Coastal Science	1995-1998
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ACADEMIC APPOINTMENTS:

2002-present	Assistant Professor, IMCS Rutgers University
1998-2002	Assistant Research Professor, IMCS Rutgers University
2002-Present	Assistant Professor, IMCS Rutgers University

PROFESSIONAL ORGANIZATIONS:

American Geophysical Union
Estuarine Research Federation

EDITORIAL ACTIVITIES:

(*ad hoc* reviews)

Dynamics of Atmospheres and Oceans, Estuaries, Estuarine and Coastal Shelf Science, Environmental Science & Technology, Geophysical Research Letters, Journal of Continental Shelf Research, Journal of Geophysical Research-Oceans, Journal of Hydraulic Engineering, Journal of Hydrologic Engineering, Journal of Marine Research, Journal of Marine Environmental Engineering, Journal of Oceanography (Japan), Journal of Physical Oceanography, Limnology and Oceanography, Marine and Fresh Water Research, Marine Environmental Research, Oceanography Magazine, Proceedings from the Royal Society, New Jersey Department of Transportation

SERVICE ON NATIONAL and International GRANT REVIEW:

(*ad hoc* reviews)

Illinois/Indiana Sea Grant Program, Georgia Sea Grant Program , North Carolina Sea Grant Program, South Carolina Sea Grant Program, Maryland Sea Grant Program, Delaware Sea Grant Program, Maine Sea Grant Program, Rhode Island Sea Grant, National Science Foundation National Underwater Research Center, National Ocean and Atmospheric Administration ECOHAB program, National Ocean and Atmospheric Administration Coastal Ocean Program, Served on NSF Physical Oceanography grant review panels, Natural Environment Research Council, United Kingdo

TEACHING:

Fall 2000 Lecturer in Physical Oceanography Core Course (501:451 Fall 2000)

Fall 2002 501:451 Physical Oceanography co-taught with John Wilkin (lecture notes available at):

<http://marine.rutgers.edu/dmcs/ms451/>

Spring 2003 Lecturer Exploration of the Oceans, Geological Sciences 01:460:209

Fall 2003 501:451 Physical Oceanography co-taught with Jim Miller (lecture notes available at):

<http://marine.rutgers.edu/dmcs/ms451/>

Spring 2004 Geophysical Data Analysis. Co-taught with John Wilkin.

Spring 2004 Lecturer Exploration of the Oceans, Geological Sciences 01:460:209

Fall 2004 Coastal Ocean Observing Systems Co-taught with Scott Glenn.

Fall 2004 Great Paper course with Jim Ammerman, Liz Sikes and Oscar Schofield.

Spring 2005. Coastal Ocean and Estuarine Dynamics. Co-taught with Dale Haidvogel and John Wilkin.

Fall 2005 Physical Oceanography co-taught with Dale Haidvogel (lecture notes available at):

<http://marine.rutgers.edu/dmcs/ms451/>

Spring 2006 Geophysical Data analysis

Fall 2007 Physical Oceanography

Fall 2007 Seminar course “Papers on the New York Bight”

SERVICE ON UNDERGRADUATE EDUCATION:

Mentored Christopher Esposito on IMCS summer internship and Rutgers undergraduate research fellow during summer and fall 2002.

Independent Studies

Mike Bernhart Spring 2004 Measuring tidal currents in the RU Rowing lanes of the Raritan

Sandra Cabrera Spring 2004 Suspended sediment measurements from Space

SERVICE ON GRADUATE SCHOOL COMMITTEES:

Thesis Advisory Committees

Chris Gregg	IMCS Rutgers	Ph. D. 5/2002
Hongwong Ma	IMCS Rutgers	Ph. D. 5/2001
Josh Kohut	IMCS Rutgers	Ph. D. 5/2002
Hank Statscewich	IMC S Rutgers	M.S. 1/2001
John Manderson	Univ. Mass Amherst	Ph. D. Candidate
Patrick Burke	Stevens Institute of Technology	Ph. D. Student
Anne Pence	Stevens Institute of Technology	Ph. D. 5/2005
Ahmed Fauda	Civil Engineering Rutgers	Ph. D. Candidate

Graduate Students

Keleigh McCallister	IMCS Rutgers	M.S. Student (Began Spring 2004)
Joe Jurisa	IMCS Rutgers	Ph. D. Student (Began Fall 2006)

Post Doctoral Fellows

Richard Styles	2001-2002	Now Assistant Professor U. South Carolina
David Fugate.	2003- Present.	

Fullbright Fellows

Luis Gonzalez	June-September 2004	University of Panama
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PAST and CURRENT GRANT SUPPORT:

New Jersey Department of Transportation “Characterizing the circulation and dispersive nature of the Passaic River and its dependence on river discharge and tidal range: elucidation of major processes that determine the impact of the proposed Passaic River dredging project.: PI with subcontract to USGS Trenton. \$376,243. 8/04-6/06

National Science Foundation, “Lagrangian study of fate and transportation of material in an estuarine plume: a process study in an operational ocean observatory” PI with 10 coPI’s. \$4,200,000. (Rutgers \$2,100,000) 7/03-7/08.

National Science Foundation. “BIOCOMPLEXITY/IDEA: Development of an instrument for in situ measurements of microbial enzyme activity in aquatic ecosystems” coPI with Jim Ammerman (Rutgers University) and Gary Klinkhammer (Oregon State University) 8/02-8/07. \$1,311,885.

New Jersey Department of Environmental Protection. “Integrated Hydrodynamic and Chemical Sampling in Newark Bay, the Kills and the Northern and Southern Tributaries”. coPI with Scott Glenn. 05/02-05/03. (\$140,216).

National Science Foundation, OCE-Biological Oceanography, “Tidal transport of postlarval bivalves in a flood-dominated estuary” Co-PI with PI Heather Hunt (IMCS). 03/02-03/05. (\$318,923).

Office of Naval Research “Circulation and Mixing at LEO-15”, PI, 10/2001-10/2002. \$49,600

National Science Foundation, OCE-Physical Oceanography “Collaborative Research: Lagrangian studies of mixing and secondary circulation in a stratified channel” PI with Co-PIs W.R. Geyer (Woods Hole) and R. Houghton (Lamont-Columbia) 3/1/2001-3/1/2005. \$742,616 (Rutgers \$219,427)

New Jersey Department of Environmental Protection. “Ambient Loadings to the Newark Bay Complex and the Kills” CO-PI with PI M.S. Bruno (Stevens) and CO-PI’s, K.L. Rankin and T.O. Herrington (Stevens) and S. Glenn, (Rutgers), 6/2000-6/2002. \$631,070 (Rutgers \$275,000)

Corporation for Marine Education and Research/National Oceanic and Atmospheric Administration “Fish movement in the Dynamic ecoscape of a flood dominated estuary” PI, 9/2000-9/2002 (\$48,500)

Hudson River Foundation “Exchange between New York Harbor and Newark Bay through the Kill van Kull tidal Straight” PI 3/1999-3/2001. (\$49,872)

Corporation for Marine Education and Research/National Oceanic and Atmospheric Administration,” Linkages between circulation and distribution of marine organisms in a shallow well mixed estuary: An observational approach” PI with CO-PI Alan Stoner (NMFS) 3/1998-3/1999. (\$22,129)

New Jersey Sea Grant. “Low Frequency Circulation in a Multiple Inlet/Bay system”. PI , 3/1998-3/2000. (\$55,426)

Corporation for Marine Education and Research/National Oceanic and Atmospheric Administration Development of hydrodynamic/Fish recruitment model of the Great Bay/Little Egg Harbor Estuarine. PI, 3/1996-3/1998. (\$52,500)

PUBLICATIONS:

A. Papers in Preparation:

31. Fugate, D. and **R.J Chant**. “Dynamics and sediment transport processes in the Passaic River estuary” to be submitted to the Journal of Geophysical research
30. Field P., Rosenthal Y., S. Perron-Cashman, **R. Chant** and R. Sherrell. “ The effect of tidal driven resuspension on pollutant metal behavior in the Hudson River Estuary” To be submitted to Estuaries
29. **Chant, R.J.**, S.M. Glenn, E. Hunter, J. Kohut, R. F. Chen, R. Houghton, J Bosch and O. Schofield, “Bulge formation in a buoyant river outflow” To be submitted to the Journal of Geophysical Research.
28. **Chant, R.J.**, W.R. Geyer. “The horizontal Richardson number and the Estuarine Spring/neap transitions” To be submitted to the Journal of Physical Oceanography
27. W.R. Geyer, **R. J. Chant**, R. Houghton, E. Hunter and J. Lerczak Horizontal dispersion and mixing in a partially mixed estuary: results of the Hudson Estuary dye study. To be submitted to the Journal of Physical Oceanography.

B. Papers Submitted.

26. Schofield, O. **R. J. Chant**, S.M. Glenn, J. Bosch. D. Gong, A. Kahl, J. Kohut, M. Moline, J. Reinfelder and T. Frazer., “The Hudson River Plume and it’s role in low dissolved Oxygen in the Mid-Atlantic Bight” to be submitted to the Journal of Geophysical Research
25. Mikkelsen, O. A., R.J. Chant, P.S. Hill, T.G. Milligan, C.F. Jago, S.E. Jones, V.K. Crivstov, E/G. Mitchelson-Jacob. “Schlieren and in situ optical measurments” submitted to Limnology and Oceanography. Nov. 2006
24. Hunt, H., M.J. Maltais, D. Fugate and **R.J. Chant**. “Spatial and temporal variability in juvenile bivalve dispersal: effects of sediment transport and flow regime” Submitted to Marine Ecology Progress Series
23. Fouda, A.M., Q Guo, **R.J. Chant**, N. P. Psuty. Seasonal variability of local and remote forced sub-tidal motion in a shallow lagoon-type estuary. in revision *Estuarine and Coastal Shelf Science*.

C. Articles in Peer Reviewed Journal

22. Hunter, E., **R.J. Chant**, J. Kohut, L. Bowers and S.M. Glenn. “Sea Breeze dominates surface currents across a wide shelf” submitted to Geophysical Research Letters

21. Valle-Levinson, K. Holderied, C. Li and **R. J. Chant**, "Subtidal flow structure at the turning region of a wide outflow plume" Accepted the Journal of Geophysical Research.
20. **Chant, R.J.**, W.R. Geyer, R.H Houghton, E. Hunter and J. Lerczak, "Estuarine boundary layer mixing processes: insights from dye experiments" In Press , Journal of Physical Oceanography
19. Lerczak, J., W.R. Geyer and **R.J. Chant** Mechanisms driving the time-dependent salt flux in partially stratified estuary. Vol. 36, No. 12, pages 2283–2298.
18. Ma H, J.P. Grassle and **R.J. Chant** , 2006, Vertical distribution of bivalve larvae along a cross-shelf transect during summer upwelling and downwelling. *Marine Biology* 149:1123-1138
17. Fugate, D.C., **R.J. Chant**, 2006, Aggregate settling velocity of combined sewage overflow. *Marine Pollution Bulletin* 52, pp 427-432
16. Mikkelsen O. A., P. S. Hill, T. G. Milligan, **R. J. Chant**, 2005, In situ particle size distributions and volume concentrations from a LISST-100 laser particle sizer and a digital floc camera. *Continental Shelf Research* vol 25 1959-1978
15. Fugate, D.A. and **R. J. Chant**. 2005 Near bottom shear stresses in a small highly stratified estuary. *J. Geophys. Res.*, C03022, doi:10.1029/2004JC002563
14. Glenn, S.M., R. Arnone, T. Bergman, P. Bissett, M. Crowley, J. Cullen, J. Gryzmski, D. Haidvogel, J. Kohut, M. Moline, R. Sherrell, T. Song, **R. Chant**, O. Schofield, 2004 , The Biogeochemical Impact of Summertime Coastal Upwelling In the Mid-Atlantic Bight *J. Geophys. Res.* VOL. 109, C12S02, doi:10.1029/2003JC002265,
13. Moline, M. A., S. Blackwell, **R. Chant**, M. J. Oliver, T. Bergmann, S. Glenn, and O. M. E. Schofield (2004), Episodic physical forcing and the structure of phytoplankton communities in the coastal waters of New Jersey, *J. Geophys. Res.*, 110, C12S05, doi:10.1029/2003JC001985.
12. **Chant, R. J.**; Glenn, Scott; Kohut, Josh 2004, Flow reversals during upwelling conditions on the New Jersey inner shelf *J. Geophys. Res.*, Vol. 109, No. C12, C12S03. 10.1029/2003JC001941 13 November 2004
11. Kohut, J.T, S.M. Glenn and **R.J. Chant**, 2004 "Seasonal current variability on the New Jersey inner Shelf" *Journal of Geophysical Research*, 109: C07S07, doi 10.1029/2003JC001932, 2004
10. Scharf, F.S., J.P. 2004 Manderson, M.C. Fabrizio, J.O. Pessutti, J.E. Rosendale, **R.J. Chant**, A.J. Bejda Seasonal and interannual patterns of distribution and diet of bluefish within a Middle

Atlantic Bight estuary in relation to abiotic and biotic factors. *Estuaries* 2 427-436

9. **Chant, R. J.** 2002. Secondary flows in a region of flow curvature: relationship with tidal forcing and river discharge. *Journal of Geophysical Research*. 10.1029/2001JC001082, 21 September.
8. **Chant, R. J.** 2001. Tidal and subtidal motion in a multiple inlet/bay system. *Journal of Coastal Research*. Special issue 31:102-114b
7. **Chant, R. J.** 2001. Evolution of near-inertial waves during an upwelling event on the New Jersey inner shelf. *Journal of Physical Oceanography*. 31:746-764.
6. **Chant, R. J.** and A. Stoner. 2001, Particle trapping in a stratified flood-dominated estuary. *Journal of Marine Research*. 59:29-51
5. **Chant, R. J.**, C. Curran, K. Able, S. Glenn. 2000. Delivery of winter flounder (*Pseudopleuronectes americanus*) larvae to settlement habitats in coves near tidal inlets. *Estuarine and coastal Shelf Science*. 51:529-541.
4. Munchow, A., and **R. J. Chant**. 2000. Kinematics of inner shelf motion during the summer stratified season off New Jersey. *Journal of Physical Oceanography*. 30:247-268.
3. **Chant, R. J.** and R. E. Wilson. 2000. Internal hydraulics and mixing in a highly stratified estuary. *Journal of Geophysical Research*. 106:14215-14222.
2. **Chant, R. J.** and R. E. Wilson. 1997. Secondary circulation in a highly stratified estuary. *Journal of Geophysical Research*. 102:23207-23216.
1. Vieria, M.E.C. and **R. J. Chant**. 1993. On the contribution of subtidal volume fluxes to algal blooms in Long Island estuaries. *Estuarine Coastal and Shelf Sciences*. 36:15-29.

D. Book Chapters

Geyer, W.R. and **R.J. Chant**, 2006. Physical processes in the Hudson River, in *The Hudson River Ecosystem*. Levinton, J. S., (ed.) Oxford University Press, 608 pages

F. Other articles, reports and publications.

Chant R.J. 2006 "Hydrodynamic conditions and sediment release rate during the Passaic River dredging pilot: Dec 2004". New Jersey Department of Environmental Protection. 77 pages.

Chant, R.J. 2006 "Circulation and sediment transport processes in the Newark Bay/Kills Complex". New Jersey Department of Environmental Protection. 2006" 66 pages

Glenn, S.M., O. Schofield, **R. Chant**, J. Kohut, J. McDonnell, 2005, OCEANS 2005 MTS/IEEE Educational Needs in the Changing Field of Operational Oceanography: Training the People that will Sustain Munk's 1+1=3 Scenario,

Glenn, S., O. Schofield, T. Dickey, **R. Chant**, J. Kohut, J. Bosch, L. Bowers, L. Creed, C. Haldemann, E., Hunter, J. Kerfoot, C. Mudgal, M. Oliver, H. Roarty, E. Romana, M. Crowley, D. Barrick, and C. Jones, 2004. [The Expanding Role of Ocean Color & Optics in the Changing Field of Operational Oceanography](#). *Oceanography*. 107:86-95.

- Schofield, O., **Chant, R.**, Kohut, J. T., Glenn, S. M. The evolution of a nearshore coastal observatory and the establishment of the New Jersey Shelf Observing System. *Sea Technology* 44(11): 52-58
- Schofield, O., **R. Chant**, J. Kohut and S. Glenn. 2004 [The growth of the New Jersey Shelf Observing System for monitoring plumes and blooms on the Mid-Atlantic continental shelf.](#) *OCEANS 2004*.
- Chant R.J.** , J. Reinfelder, S. M. Glenn, O. Schofield, J. Wilkin, R.H. Houghton, R.J. Chen, M. Zhou, P. Bissett, M. Moline, T.Frazer, 2002 “LATTE 2002 Field Effort” Coastal Ocean Program Sept. 2004 Newsletter. National Science Foundation
- Chant R.J.**, J. Reinfelder, S. M. Glenn, O. Schofield, J. Wilkin, R.H. Houghton, R.J. Chen, M. Zhou, P. Bissett, M. Moline, T.Frazer, 2002 “LAGrangian Transport and Transformation Experiment (LATTE)” Coastal Ocean Program July 2003 Newsletter. National Science Foundation.
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- Chant, R. J.** 2000. Flow variability in an estuarine tidal straight, Proceedings of the Physics of Estuarine and Coastal Systems 6th bi-annual meeting. Virginia Institute of Marine Science.
- Chant, R. J.** 2000. Tidal and subtidal motion in the Barnegat Bay/Little Egg Harbor estuarine system. *Jersey Shoreline: Special Barnegat Bay Issue*. 19:15-17.
- Gregg, C.S., J.P. Grassle, **R.J. Chant**. 2000. Restocking Estuaries: Predicting Bivalve Larval Transport, *Jersey Shoreline: Special Barnegat Bay Issue*. 19:17-23.
- Creed, E., S.M. Glenn and **R. J. Chant**. 1998. Adaptive sampling experiments at LEO-15 OCEANS 2000 MTS /IEEE conference 1998 proceedings, Baltimore MD. Vol 2:1153-1157
- Chant, R. J.**, C. Curran, K. Able, S. Glenn. 1997. Circulation patterns in Little Egg Harbor and its Role in Larval Winter Founder Distribution: Preliminary Results. Proceedings from the Ecology of Barnegat Bay Workshop.