CAROLYN SUMMERILL BENTIVEGNA

a. Personal Data:

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b. Professional Preparation:

EDUCATION
Mount Holyoke College, So. Hadley, Massachusetts, B.A., Biology, 1978-1982
Rutgers, The State University of New Jersey, New Brunswick, M.S., Environmental Sciences, 1985-1989
Rutgers, The State University of New Jersey, New Brunswick, Ph.D., Environmental Sciences, 1985-1991
Dartmouth Medical School, Hanover, New Hampshire, postdoctoral fellow, 1991-1994

c. Appointments:

2005 - present	**Chair of Biological Sciences**, Seton Hall University, South Orange, New Jersey
2001 – present	**Associate Professor**, Department of Biology, Seton Hall University, South Orange, New Jersey
1995- 2001	**Assistant Professor**, Department of Biology, Seton Hall University, South Orange, New Jersey
1995- present	**Director** of Environmental Science and Environmental Studies Minors, Seton Hall University, South Orange, New Jersey
1991-1994	**Postdoctoral Research Fellow**, Department of Pharmacology and Toxicology, Dartmouth Medical School, Hanover, New Hampshire

d. Grants:

2008-2009	Seton Hall University University Research Council, $6000 Developing Hemoglobin Protein in Chironomid as a Biomarker of Environmental Quality
2008	Mount Desert Island Biological Laboratories, $4500 Hemoglobin Protein in Chironomid as a Biomarker of Environmental Quality
2006-2007	Environmental Protection Agency, Education Grant, $26,661 Environmental Quality monitoring and public education program for the East Branch of the Rahway River in South Orange, New Jersey
2004-2009	Environmental Protection Agency/NJ Meadowlands Commission, $114,386, Capping Contaminants at Kearny Marsh
2004-2005	New Jersey Sea Grant/Marine Science Consortium, $5000 Genomic Taxonomy for Identifying Aquatic Insects
2004-2005	Research Mentor: NJ Sea Grant Senior Honor Thesis Award, $2500 Differentiating Chironomid Species from the Hackensack Meadowlands using Amplified Fragment Length Polymorphism
2002-2003	Meadowlands Environmental Research Institute, $32,411: Evaluating the Effects of Contamination at Kearny Marsh
2002-2004	Research Mentor: NJ Sea Grant Senior Honor Thesis Award, $2500 Use of Single-Stranded Conformational Polymorphism (SSCP) to Evaluate Genetic Diversity in a Contaminated Wetland, Kearny Marsh, NJ.
2001-2002	Research Mentor: NJ Sea Grant Senior Honor Thesis Award, $2500 Evaluation of the Toxicity of Manganese to Macroinvertebrates
Summer 2000	University Council Research Award, $2135

	Effect of Different Types of Wetland Grass Detritus on Carbohydrates in Aquatic Midge Fly Larvae (*Chironomus riparius*)
2000-2001	Research Mentor: NJ Sea Grant Senior Honor Thesis Award, $2500 Evaluation of Detritus from Different Wetland Grasses using Aquatic Midge Fly Larvae
Summer 1996	University Council Research Award, $3000 Detection of Cadmium by stress-response genes.

e. Honors

2005	Faculty Scholarship Award, College of Arts &Sciences
1998-1999	University Teaching Fellow

f. Other Activities

1. University representative to the Marine Science Consortium, 1995 to present
2. Executive Board, Hudson-Delaware Chapter of the Society of Environmental Toxicology and Chemistry, 2005 to 2009
3. President of the Hudson-Delaware Chapter of the Society of Environmental Toxicology and Chemistry, 2006
4. Radiation Safety Officer, 2000-2005
5. Advisor to the Seton Hall Ecology Club, 2004 to 2008
6. Member, College Strategic Planning Executive Committee, 2007-2008
7. Member, University Safety Committee, 2006 to present
8. Member, Educational Policy Committee, 2003 to 2008
9. Member, Claire Booth Luce Committee, 1996-2005

g. Short Courses Taught

Bentivegna CS and White L. Introduction to DNA Biomarkers. 23rd Annual Meeting of the Hudson-Delaware Chapter of the Society of Environmental Toxicology and Chemistry, April 26-27, 2007.

Bentivegna CS. Water Quality Monitoring of Small, Urban Streams**.** 24th Annual Meeting of the Hudson-Delaware Chapter of the Society of Environmental Toxicology and Chemistry, South Orange, NJ USA, May 8-9, 2008

h. Published Abstracts

Bentivegna CS, Piatkowski T. 1997. Investigation into the mechanism of tributyltin using fish embryos, *Oryzais latipes*. Society of Environmental Toxicology and Chemistry, 18th Annual Meeting, "Bridging the Global Environment: Technology, Communication, and Education", 16-20 November 1997. San Francisco, CA pg. 322.

Bentivegna CS, Davitt J. 1998. Analysis of monosaccharides in *Chironomus riparius* using gel electrophoresis. Society of Environmental Toxicology and Chemistry, 19th Annual Meeting, "The Natural Connection: Environmental Integrity and Human Health", 15-19 November 1998, Charlotte, NC, pg. 252.

Ranzurmal M, Bentivegna CS. 1999. Expression and sequencing of a novel microsatellite gene in *Chironomus riparius*. Society of Environmental Toxicology and Chemistry, 20th Annual Meeting, "Sustaining Global Environmental Integrity", 14-18 November 1999, Philadelphia, PA, pg. 268.

Govinda S, Bentivegna CS.1999. Expression and sequencing of ribosomal protein gene in *Chironomus riparius*. Society of Environmental Toxicology and Chemistry, 20th Annual Meeting, "Sustaining Global Environmental Integrity", 14-18 November 1999, Philadelphia, PA, pg. 269.

Bentivegna CS. 2000. Development of monosaccharides as a biomarker for environmental stressors in *Chironomus riparius*. Society of Environmental Toxicology and Chemistry, 21st Annual Meeting, "Environmental Sciences in the 21st Century: Paradigms, Opportunities, and Challenges", 12-16 November 2001, Nashville TN, pg. 89.

McPherson J, Bentivegna CS. 2001. Evaluation of detritus from different wetland grasses using aquatic midge fly larvae, Society of Environmental Toxicology and Chemistry Hudson/Delaware Chapter Annual Meeting, 10-11 May 2001, West Chester, PA, pg. 19.

Palmer LM, Bentivegna CS. 2001. Use of PCR-SSCP in the study of genetic variation in chironomids. Society of Environmental Toxicology and Chemistry Hudson/Delaware Chapter Annual Meeting, 10-11 May 2001, West Chester, PA, pg. 22.

Bentivegna CS. 2002. Acute toxicity of Manganese and Iron in *Chironomus riparius*. Society of Environmental Toxicology and Chemistry, 23rd Annual Meeting, "Achieving Global Environmental Quality: Integrating Science & Management", 16-20 November 2002, Salt Lake City UT, pg. 282.

Czechowicz K, Bentivegna CS. 2003. Use of Single Stranded Conformational Polymorphism (SSCP) to Evaluate Genetic Diversity in Chironomids from Kearny Marsh, NJ. Society of Environmental Toxicology and Chemistry Hudson/Delaware Chapter Annual Meeting, 1-2 May 2003, Stockton, NJ, pg. 5.

Bugel S, Bentivegna CS. 2003. Evaluating Macroinvertebrate Biodiversity in a New Jersey Freshwater Marsh. Society of Environmental Toxicology and Chemistry Hudson/Delaware Chapter Annual Meeting, 1-2 May 2003, Stockton, NJ, pg. 2.

Alfano JE, Bentivegna CS. 2003. Relationship between Acid Volatile Sulfides, Simultaneously Extracted Metals, and Total Organic Carbon to 10 d Growth in *Chironomus riparius*. Society of Environmental Toxicology and Chemistry Hudson/Delaware Chapter Annual Meeting, 1-2 May 2003, Stockton, NJ, pg. 1.

Bentivegna CS, Jacobs L, LeGoff YM, Liptak A, and Eisenstein C. 2004. Use of PCR-based techniques to identify chironomid species and evaluate genetic diversity. Fourth World Congress of the Society of Environmental Toxicology and Chemistry, 14-18 November 2004, Portland, OR.

Bugel SM and Bentivenga CS. 2004. Correlating Benthic Macroinvertebrate Diversity with Sediment and Water Quality Parameters. Fourth World Congress of the Society of Environmental Toxicology and Chemistry, 14-18 November 2004, Portland, OR.

Bugel SM and Bentivegna CS. 2005. Assessing Genetic Diversity of Chironomids in the NJ Meadowlands Using Randomly Amplified Polymorphic DNA. 21st Annual meeting of the Hudson-Delaware Chapter of the Society of Environmental Toxicology and Chemistry, 28-29 April, 2005, New Brunswick, NJ.

Ferrara K and Bentivegna CS. 2005. Suitability of AquaBlok as an Alternative Substrate for Sediment. 21st Annual meeting of the Hudson-Delaware Chapter of the Society of Environmental Toxicology and Chemistry, 28-29 April, 2005, New Brunswick, NJ.

Jacobs LM and Bentivegna CS. 2005. Molecular Identification and Classification of Chironomid Diversity from an Urban Wetland. 21st Annual meeting of the Hudson-Delaware Chapter of the Society of Environmental Toxicology and Chemistry, 28-29 April, 2005, New Brunswick, NJ.

Brown AD, Njoku I, and Bentivegna CS. Effect of sediment capping on biodiversity in the New Jersey Meadowlands. 27th Annual Meeting of the North America Chapter of the Society of Environmental Toxicology and Chemistry, Montreal, Canada November 5-9, 2006.

Jadeja, VN, Bugel SM, Jacobs LM, Brown AD and Bentivegna CS. Evaluation of genetic diversity in wild chironomid populations using RAPD and hemoglobin protein as molecular biomarkers. 27th Annual Meeting of the North America Chapter of the Society of Environmental Toxicology and Chemistry, Montreal, Canada November 5-9, 2006.

Jadeja VN, Bugel SM, Jacobs LM, Njoku Jr. I, and Bentivegna CS. Evaluation of genetic diversity in wild chironomid populations using RAPD and hemoglobin protein as molecular biomarkers. Rivers at Risk: Stressors and Solutions, pg 26, 23rd Annual Meeting of the Hudson-Delaware Chapter of the Society of Environmental Toxicology and Chemistry, April 26-27, 2007.

Bentivegna CS, Jacobs LM, and Jadeja VN. Chironomid hemoglobin protein as a molecular biomarker for species identification and genetic diversity using wild larvae from Kearny Marsh, N.J. 2007 Meadowlands Symposium, pg. 6, 2007 Meadowlands Symposium, Lyndhurst, N.J., May 15-17, 2007.

Glenn, M, Ferreira M, Ramilo J, Rauch-Sasseen A, and Bentivegna CS. Kearny Marsh sediment above Aquablok cap shows increased bacterial diversity. 2007 Meadowlands Symposium, pg. 10, 2007 Meadowlands Symposium, Lyndhurst, N.J., May 15-17, 2007.

McClary, Jr. M, Lynch L, Brown A, and Bentivegna CS. Effects of variations of a clay-based cap on the abundance of macroinvertebrates and water quality in Kearny Marsh. 2007 Meadowlands Symposium, pg. 18, 2007 Meadowlands Symposium, Lynhurst, N.J., May 15-17, 2007.

Njoku Jr. I, and Bentivegna CS. Understanding the Effects of Chronic Pollution on Genetic Diversity using a Novel Microsatellite Gene SETAC North American 28th Annual Meeting, Society of Environmental Toxicology and Chemistry, 28th Annual Meeting, "Urban Environmental Issues: Impacts of Ecological Systems", Milwaukee, WI, November 11-15, 2007.

Oh J-T, Jadeja V, Njoku I, Jr., and Bentivegna CS**.** 2007. Chironomid Hemoglobin Protein as a Molecular Biomarker for Species Identification and Genetic Diversity using Hemoglobin Protein in Wild Chironomids from a Contaminated Wetland. Society of Environmental Toxicology and Chemistry, 28th Annual Meeting, "Urban Environmental Issues: Impacts of Ecological Systems", Milwaukee, WI, November 11-15, 2007, pg. 269.

Gerardi, A, and Bentivegna CS. Effect of Sediment Capping on Benthic Macroinvertebrates in the New Jersey Meadowland. Hudson-Delaware Chapter of SETAC 24th Annual Meeting, South Orange, NJ USA, May 8-9, 2008.

Njoku Jr. I, and Bentivegna CS. Understanding the Effects of chronic Pollution on Genetic Diverstiy using a Novel Microsatellite Gene. Hudson-Delaware Chapter of SETAC 24th Annual Meeting, South Orange, NJ USA, May 8-9, 2008, p. 16.

Oh J-T, Jadeja V, Njoku Jr. I, Bentivegna CS. Chironomid Hemoglobin Protein as a Molecular Biomarker for Species Identification and Genetic Diversity using Hemoglobin Protein in Wild Chironomids from a Contaminated Wetland. Hudson-Delaware Chapter of SETAC 24th Annual Meeting, South Orange, NJ USA, May 8-9, 2008, p. 17.

Bentivegna, CS, Brown AD and Gerardi A. Effect of AquaBlok, a sediment capping technology, on environmental quality and benthic macroinvertebrates. Society of Environmental Toxicology and Chemistry, 29th Annual Meeting, "Environmental Stewardship: Integrating Science and Management", 16-20 November 2008, Tampa, FL.

Oh, J-T, Doan K, and Bentivegna CS. Evaluating Acute Toxicity of Cadmium to Chironomid Using Hemoglobin as a Molecular Biomarker. Society of Environmental Toxicology and Chemistry, 29th Annual Meeting, "Environmental Stewardship: Integrating Science and Management", 16-20 November 2008, Tampa, FL.

Doan K, and Bentivegna CS. In Situ Co-localization of SINE-CTRT1 Retroposon and Hemoglobin Family Genes in The Polytene Chromosomes of Chiromomus riparius (Diptera). 25th Annual Meeting of the Hudson-Delaware Chapter of the Society of Toxicology and Chemistry, Bear Mountain, NY, April 23, 2009, pg. 8.

Dietzold J, and Bentivegna CS. An interaction study determining the effect of atrazine and benzo(a)pyrene on expression of a cytochrome P450 family 4 gene in C. riparius. 25th Annual Meeting of the Hudson-Delaware Chapter of the Society of Toxicology and Chemistry, Bear Mountain, NY, April 23, 2009, pg. 8.

i. Publications:

Pure E, Durie CJ, Summerill CK, Unkeless JC. 1984. Identification of soluble Fc receptors in mouse serum and the conditioned medium of stimulated B cells. *J Exp Med* 160:1836-49.

Bentivegna CS, Cooper KR. 1993. Suspected Tolerance to Benzo(a)pyrene Using Chromosomal Puffing in *Chironomus tentans*. First Symposium on Environmental Toxicology and Risk Assessment, ASTM STP1179, *American Society for Testing and Materials*, Philadelphia, PA. p. 230-246

Bentivegna CS, Cooper KR. 1993 Reduced Chromosomal Puffing in *Chironomus tentans* as a Biomarker for Potentially Genotoxic Substances. *Environ Toxicol Chem* 12:1001-1011.

Bentivegna CS, Ihnat MA, Baptiste NS, Hamilton JW. 1998. Developmental regulation of the 3-methylcholanthrene- and dioxin-inducible CYP1A5 gene in chick embryo liver *in vivo. Toxicol Appl Pharmacol* 151:166-173.

Bentivegna CS, Piatkowski T. 1998. Effects of Tributyltin on Medaka (*Oryzias latipes*) Embryos at Different Ages of Development. *Aquatic Toxicol* 44:117-123.

Govinda S, Kutlow T, Bentivegna CS. 2000. Identification of a putative ribosomal protein mRNA in *Chironomus riparius*, and its response to cadmium, heat shock and actinomycin D. *J Biochem Toxicol* 14:195-203.

Bentivegna CS. 2001. Advancing monosaccharides as biomarkers: Part I. Development of fluorophore-assisted carbohydrate-electrophoresis in *Chironomus riparius*. *Aquatic Toxicol*. 61:95-109.

Bentivegna CS. 2001. Advancing monosaccharides as biomarkers: Part II. Effects of starvation and cadmium in *Chironomus riparius* as detected by fluorophore-assisted carbohydrate-electrophoresis. *Aquatic Toxicol.* 61:111-126.

Bentivegna CS, Alfano J-E, Bugel SM, and Czechowicz K. 2004. Influence of sediment characteristics on heavy metal toxicity in an urban marsh. *Urban Habitats* Volume 2(1) url: http://www.urbanhabitats.org/v02n01/index.html.

Bentivegna CS, Oh, J-T, Doan K, and DiPietro C. 2009. Hemoglobin as a biomarker for heavy metals using aquatic midge fly larvae, *Chironomidae*. The Bulletin: Mount Desert Island Biological Laboratory (J.B. Claiborne, editor) vol 48:116-119.