# **CELIA Y. CHEN**

### Department of Biological Sciences, HB 6044 Dartmouth College Hanover, N.H. 03755 (603) 646-2376

# EDUCATION

AWARDS	
1974-1978	Dartmouth College, B.A. in Biology and Environmental Studies.
1982-1985	Graduate School of Oceanography, University of Rhode Island, M.S. in Biological Oceanography.
1988-1994	Dartmouth College, Ph.D. in Ecology.

1994 Hannah Croasdale Award for Academic Excellence (awarded annually to the graduating Ph.D. recipient who best exemplifies the qualities of a scholar)

# **PROFESSIONAL EXPERIENCE**

10/18-Present	Center for Mercury Studies, Biodiversity Research Institute - Co-Director
4/18-Present	Dartmouth Toxic Metals Superfund Research Program - Director
5/11-Present	Department of Biology, Dartmouth College - Research Professor
5/05-5/11	Department of Biology, Dartmouth College - Research Associate Professor
5/00-5/05	Department of Biology, Dartmouth College - <i>Research Assistant Professor</i> (course taught: Marine Biology and Ecology)
5/95-5/00	Department of Biology, Dartmouth College - Research Associate, Visiting Assistant Professor
6/94-5/95	Department of Biology, Dartmouth College - Postdoctoral Fellow.
1/87-2/89	National Research Council, Washington, D.C Marine Board Staff Officer.
1/86-1/87	U.S. House of Representatives, Merchant Marine and Fisheries Committee, Washington, D.C Sea Grant Congressional Fellow.
9/82-1/86	Graduate School of Oceanography, Narragansett, R.I Research Assistant.
8/81-8/82	Beijing Normal University, Beijing, People's Republic of China – <i>Instructor</i> for Beijing Environmental Protection Research Institute.
8/78-7/81	Fred C. Hart Associates, Inc., N.Y. N.Y. & Washington, D.C Senior Environmental Analyst.

# SPONSORED RESEARCH GRANTS

- 4/18-4/20 New Hampshire Sea Grant "Reducing risk and enhancing benefits of fish consumption: Understanding relationships for mercury, arsenic, selenium and omega-3 fatty acid concentrations in Gulf of Maine fisheries species". Celia Chen, Kate Buckman, Vivien Taylor.
- 9/16-9/18 Center for Disease Control "A Population-Based Ohio ALS Repository and a Case-Control Study of ALS Risk Factors". Elijah Stommel, Walter Bradley, Xun Shi, Angeline Andrew, Celia Chen.

- 3/17-3/18 Neukom CompX Grant- "Modeling landscape and biogeochemical controls of methylmercury in watersheds."
- 4/17-4/18 NIEHS- "Integrating Mercury Research and Policy in a Changing World". Celia Chen (PI).
- 9/16-8/18 WRRC "Effects of dissolved organic carbon on methylmercury bioavailability in stream ecosystems". Kathy Cottingham, Celia Chen, James Shanley.
- 1/16-12/18 USEPA- "Assessing the contribution of small streams to use and non-use water quality values using modeling, stakeholder participation, and decision theory". Mark Borsuk, Richard Howarth, Celia Chen, Shannon Rogers.
- 11/15–10/16 NIEHS "Collaborative on Food with Arsenic and Associated Risk and Regulation". Celia Chen,.
- 04/15–3/17 New York State Energy Research and Development Administration "Mercury Dynamics Influenced by nutrient Loading in Urban Estuaries. Charles Driscoll, Celia Chen.
- 5/14-4/19 NIEHS "Methylmercury production and fate in response to multiple environmental factors." Celia Chen, Robert Mason, Nicholas Fisher.

NIEHS – Research Translation Core, Celia Chen, Laurie Rardin, Nancy Serrell.

- 9/12-7/16 NIEHS "Climate impact on coastal ecosystem methylmercury: human exposure implications", Celia Chen, Brian Jackson, Robert Mason, Evan Ward.
- 10/11-9/13 NSRC "Validating landscape models for mercury in northeast lakes using dragonfly nymphs as mercury bio-sentinels" Sarah Nelson, Celia Chen, David Krabbenhoft.
- 6/10-6/14 USDA US Forest Service "Ecosystem Change and Mercury Contamination", Celia Chen.
- 9/10-6/13 NIH INBRE "Approaches to Biomedical Research", Pilot Project, "The Role of Ecological, Chemical, and Landscape Factors in Determining Methylmercury Bioaccumulation in Stream Food Webs" Celia Chen, Nick Baer, Kathleen Weathers (Ron Taylor INBRE PI).
- 4/08-4/13 NIEHS "Trophic Transfer of Mercury in Aquatic Food Webs." Celia Chen, Carol Folt, and Robert Mason.
  - NIEHS Research Translation Core, Celia Chen, Laurie Rardin, Nancy Serrell,
- 6/08-12/10 NOAA "Collaborative Research: Cycling of Mercury in Estuarine Sediments Biogeochemical Controls on Fate, Transport and Bioaccumulation Along Physical and Chemical Gradients" Celia Chen, Aria Amirbahman, Mary Voytek.
- 6/07-12/10 NOAA "Atmospheric Exchanges of Mercury with Lake Champlain and Their Influence on Rates of Mercury Accumulation in Plankton and Fish" Eric Miller, Celia Chen, Neil Kamman, James Shanley, \$326,219.
- 4/06-6/11 DOD "Biological Processes Affecting Bioaccumulation, Transfer, and Toxicity of

Metal Contaminants in Estuarine Sediments" Celia Chen, Nicholas Fisher, and Joseph Shaw.

- 4/06-6/08 NIEHS Supplement to Toxic Metals in the Northeast "Fate and Bioavailability of Mercury in Aquatic Ecosystems and Effects on Human Exposure", Interdisciplinary Workshop, Josh Hamilton, Celia Chen, Nancy Serrell.
- 4/05-4/08 NIEHS "Trophic Transfer of Toxic Metals in Aquatic Food Webs." Carol Folt and Celia Chen.
- 1/05-12/05 NOAA "Enhancements to the Lake Champlain Mercury Mass Balance: A Multidisciplinary Approach." Ning Gao, Celia Chen, Philip Hopke, Neil Kamman, Rich Poirot, Andrea Lini, James Shanley.
- 6/04-6/05 Mount Desert Biological Laboratory, "Trophic Transfer of Metals in Intertidal/Subtidal Food Webs" Celia Chen.
- 4/04-12/04 NOAA NH Sea Grant "Trophic Transfer of Mercury in Estuarine Food Webs" Celia Chen. \$2100.
- 6/03-6/04 Mount Desert Biological Laboratory, "Trophic Transfer of Metals in Estuarine Food Webs via the 'Nekton Trophic Relay'" Celia Chen.
- 4/03-12/03 NOAA NH Sea Grant "Trophic Transfer of Mercury in Estuarine Food Webs" Celia Chen and Ata Bilgili.
- 9/02-9/07 NSF "Development of Methods Linking Genomic and Ecological Responses in a Freshwater Sentinel Species." Joshua Hamilton, Celia Chen, Carol Folt, Michael Lynch, Joseph Shaw.
- 9/01-9/02 NSF "Fate and Transfer of Metals and PCB's in Baiyangdian Lake, China." Celia Chen, Meixun Zhao, Carol Folt.
- 4/00-4/05 NIEHS "Trophic Transfer of Toxic Metals in Aquatic Food Webs." Carol Folt and Celia Chen.
- 6/99-5/02 Canadian Forest Service "Multiple Stressors Effects on Native Amphibian Species of Forested Environments." Celia Chen and Carol Folt.
- 4/95-4/00 NIEHS "Variation in Bioaccumulation and Biomagnification of Metals in Lakes throughout the Northeastern Region of the U.S.A." Carol Folt, Celia Chen and Richard Stemberger.

# PUBLICATIONS

Taylor, V.F., K.L. Buckman, E. Seelen, N. Mazruit, P. Balcom, R.P. Mason, **C.Y. Chen**. 2019. Organic carbon content drives methylmercury levels in the water column and in estuarine food webs across latitudes in the Northeast United States. Environmental Pollution 246: 639-649.

Buckman, K.L., O. Lane, J. Kotnik, A. Bratkic, F. Sprovieri, M. Horvat, N. Pirrone, D.C. Evers, **C.Y. Chen**. 2018. Spatial and taxonomic variation of mercury concentration in low trophic level fauna from the Mediterranean Sea. Ecotoxicology. https://doi.org/10.1007/s10646-018-1986-5

Nachman, K.E., T. Punshon, L. Rardin, A.J. Signes-Pastor, C.J. Murray, B.P. Jackson, M. Guerinot, T.A. Burke, **C.Y. Chen**, H. Ahsan, M. Argos, K.L. Cottingham, F. Cubadda, G.L. Ginsberg, B.C. Goodale, M. Kurzius-Spencer, A.A. Meharg, M.D. Miller, A.E. Nigra, C.B.

Pendergrast, A. Raab, K. Reimer, K.G. Scheckel, T. Schwerdtle, V.F. Taylor, E.J. Tokar, T.M. Warczak, M.R. Karagas. 2018. Opportunities and challenges for dietary arsenic intervention. Environ. Health. Persp. 126(8): 084503-1-6.

Hampton T.H., C. Jackson, D. Jung, **C.Y. Chen**, S.P. Glaholt, B.A. Stanton, J.K. Colbourne, J.R. Shaw. Arsenic Reduces Gene Expression Response to Changing Salinity in Killifish. Environ. Sci. & Technol. 2018; 52(15): 8811-21. Epub 2018/07/07. doi: 10.1021/acs.est.8b01550.

**Chen, C.Y.,** C.T. Driscoll, C.A. Eagles-Smith, C.S. Eckley, D.A. Gay, H. Hsu-Kim, S.E. Keane, J.L. Kirk, R.P. Mason, D. Obrist, H. Selin, N.E. Selin, M.R. Thompson. 2018. A critical time for mercury science to inform global policy. Environ. Sci. Technol. 52: 9556-9561.

Andrew, A.S., **C.Y. Chen**, T.A. Caller, R. Tandan, P.L. Henegan, B.P. Jackson, B.P. Hall, W.G. Bradley, E.W. Stommel. 2018. Toenail mercury levels are associated with amyotrophic lateral sclerosis (ALS) risk. Muscle and Nerve 1-6. DOI 10.1002/mus.26055

Ritger, A.L. A.N. Curtis, **C.Y. Chen**. 2018. Bioaccumulation of mercury and other metal contaminants in invasive lionfish (*Pterois volitans/miles*) from Curaçao. Marine Poll. Bull. 131: 36-44.

Curtis, A., Bugge, D.M., Faiia, A., Feng, X., Dionne, M., Williams, J., **Chen, C.Y.** 2017. Comparisons of sample preparation for analysis of stable isotope ratios of carbon and nitrogen in select marine organisms. J. Exper. Mar. Biol. Ecol. 493:1-6. http://dx.doi.org/10.1016/j.jembe.2017.03.010

Buckman, K., V. Taylor, H. Broadley, D. Hocking, P. Balcom, R. Mason, K. Nislow, **C. Chen**. 2017. Landscape influences on MeHg bioaccumulation in an urban estuary: Delaware River USA. Estuaries and Coasts 40: 1358-1370. DOI 10.1007/s12237-017-0232-3

Demidenko, E., S.P. Glaholt, E. Kyker-Snowman, J.R. Shaw, C.Y. Chen. 2016. Single toxin dose-response models revisited. Toxicol. Appl. Pharmacol. 314: 12-23.

Baumann, S. R.P. Mason, D. O. Conover, P.H. Balcom, **C. Chen**, K.L. Buckman, N.S. Fisher, H. Baumann. 2016. Mercury bioaccumulation increases with latitude in a coastal marine fish (Atlantic silverside *Menidia menidia*). Can. J. Fish. Aq. Sci. (in press) DOI: 10.1139/cjfas-2016-0396.

**Chen, C.Y.**, D.M. Ward, J.J. Williams, N.S. Fisher. 2016. Metal bioaccumulation by estuarine food webs in New England, USA. J. Mar. Sci. Engineer. 4(41) doi:10.3390/jmse4020041

Karimi, R., C.Y. Chen, C.L. Folt. 2016. Comparing nearshore benthic and pelagic prey as mercury sources to lake fish: the importance of prey quality and mercury content. Sci. Total Environ. 565: 211-221.

Gustin, M.S., D.C. Evers, M.S. Bank, C.R. Hammerschmidt, A.Pierce, N. Basu, J. Blum, P. Bustamante, **C. Chen**, C.T. Driscoll, M. Horvat, D. Jaffe, J. Pacyna, N.Pirrone, N.Selin. 2016. Importance of integration and implementation and future mercury research into the Minamata Convention. Environ. Sci. Tech. 50(6):2767-70. DOI: 10.1021/acs.est.6b00573.

Sunderland, E.M., C.T. Driscoll, J.K. Hammitt, P. Grandjean, J.S. Evans, J. Blum, **C.Y. Chen**, D.C. Evers, D.A., Jaffe, R.P. Mason, S. Goho, W. Jacobs. 2016. Benefits of Regulating Hazardous Air Pollutants from Coal and Oil-fired utilities in the United States. Environ. Sci. Tech. 50: 2117-2121. DOI: 10.1021/acs.est.6b00239

Chaves-Ulloa, R., B.W. Taylor, H.J. Broadley, K.L. Cottingham, N.A. Baer, K.C. Weathers, H.A. Ewing, **C.Y. Chen**. 2016. Dissolved organic carbon modulates mercury concentrations in

insect subsidies from streams to terrestrial consumers. Ecol. Applic. 26: 1771-1784.

Gribble, M.O., R. Karimi, B.J. Feingold, J.F. Nyland, T.M. O'Hara, M.I. Gladyshev, **C.Y. Chen**. 2016. Mercury, selenium and fish oils in marine food webs and implications for public health. Journal of the Marine Biological Association of the United Kingdom. 2016: 96(1): 43-59.

**Chen, C.Y.**, C.T. Driscoll, K.F. Lambert, R.P. Mason, E.M. Sunderland. 2016. Connecting mercury science to policy: from sources to seafood. Rev. Environ. Health 31: 17-20.

Balcom, P.H., A.T. Schartup, R.P. Mason, **C.Y. Chen.** 2015. Sources of water column methylmercury across multiple estuaries in the Northeast U.S. J. Mar. Chem. 177: 721–730. doi:10.1016/j.marchem 2015.10.012.

Brown L.E., **C.Y. Chen,** M.A. Voytek, A. Amirbahman. 2015. The effect of sediment mixing on mercury dynamics in two intertidal mudflats at Great Bay Estuary, New Hampshire, USA. J. Mar. Chem. 177: 731–741. doi:10.1016/j.marchem.2015.10.011.

Buckman, K.L., M. Marvin-DiPasqualie, V.F., Taylor, A. Chalmers, H.J. Broadley, J. Agee, B.J. Jackson, **C.Y. Chen.** 2015. Influence of a Chlor-alkali Superfund site on mercury bioaccumulation in periphyton and low-trophic level fauna. Environ. Toxicol. Chem. DOI: 10.1002/etc.2964. PubMed PMID: 25732794; PubMed Central PMCID: PMC4486627.

Shaw, J.R., T.H. Hampton, B.L. King, A. Whitehead, F. Galvez, R.H.Gross, N. Keith, E. Notch. D. Jung, S.P. Glaholt, **C.Y. Chen**, J.K. Colbourne, B.A. Stanton. 2014. Natural selection canalizes expression variation of environmentally induced plasticity-enabling genes. Mol. Biol. Evol. 31 (11): 3002-3015. PubMed PMID: 25158801; PubMed Central PMCID: PMC4209136.

Kwon, S.Y., J.D. Blum, **C.Y. Chen**, D.E. Meattey, R.P. Mason. 2014. Mercury isotope study of sources and exposure pathways of methylmercury in estuarine food webs in the Northeast U.S. Environmental Science and Technology 48: 10089-10097. doi.org/10.1021/es5020554. PubMed PMID: 25116221; PubMed Central PMCID: PMC4151785.

Taylor, V., D. Bugge, B. Jackson, **C. Chen**, 2014. Pathways of CH3Hg and Hg ingestion in benthic organisms: an enriched isotope approach. Environmental Science and Technology 48: 5058-5065. doi.org/10.1021/es404159k.

**Chen, C.Y**., M. Borsuk, D.M. Bugge, T. Hollweg, P. Balcom, D. Ward, J. Williams, R.P. Mason. 2014. Benthic and pelagic pathways of methylmercury bioaccumulation in estuarine food webs. PloS ONE 9: e89305. PubMed PMID: 24558491; PubMed Central PMCID: PMC3928433.

Broadley, H.J., K.L. Buckman, D.M. Bugge, **C.Y. Chen**. 2013 Spatial variability of metal bioaccumulation in estuarine killifish (Fundulus heteroclitus) at the Callahan Mine Superfund Site, Brooksville, ME. Arch. Environ. Contam. Toxicol. 65: 265-778. PubMed PMID: 24022459; PubMed Central PMCID: PMC3874394.

Dijkstra, J.A., K.L. Buckman, D. Ward, D.W. Evans, M. Dionne, **C.Y. Chen**. 2013. Experimental and natural warming elevates mercury concentrations in estuarine fish. PLoS ONE 8(3)e58401. PubMed PMID: 23554891; PubMed Central PMCID: PMC3595298.

Schartup, A.T., R.P. Mason, P.H. Balcolm, T.A. Hollweg, **C.Y. Chen**. 2013. Methylmercury production in pristine and anthropogenically impacted sediments. Environmental Science and Technology 2013; 47:695-700. (PMCID in process).

**Chen, C.Y**., Driscoll, C.T., Lambert, K.F., Mason, R.P., Rardin, L.R., Schmitt, C.V., Serrell, N.S., and Sunderland, E.M. *Sources to Seafood: Mercury Pollution in the Marine Environment*. Hanover, NH: Toxic Metals Superfund Research Program, Dartmouth College 2012.

**Chen, C.Y.** 2012. Methylmercury effects and exposure: Who is at risk? Environmental Health Perspectives 120: a224–a225.

**Chen, C.Y.**, Driscoll, C.T., Lambert, K.F., Mason, R.P., Rardin, L.R., Serrell, N.S., and Sunderland, E.M. 2012. Marine mercury fate: From sources to seafood consumers. Environmental Research 119:1-2. PubMed PMID: 23121885.

Driscoll, C.T., **Chen, C.Y.,** Hammerschmidt, C.R., Mason, R.P., Gilmour, C.C., Sunderland, E.M., Greenfield, B.K., Buckman, K.L., Lamborg, C. H. 2012. Nutrient supply and mercury dynamics in marine ecosystems: A conceptual model. Environmental Research 119: 118-131. PubMed PMID: 22749872; PubMed Central PMCID: PMC3646528.

Glaholt, S.T., **Chen, C.Y.**, Demidenko, E., Bugge, D.M., Folt, C. L., Shaw, J.R. 2012. Adaptive iterative design (AID): A novel approach for evaluating the effects of multiple stressor on aquatic organisms. Science of the Total Environment 432: 57-64. doi:10.1016/j.scitotenv.2012.05.074

Jackson, B.P., Bugge, D., Ranville, J.F., **Chen, C.Y.** 2012. Bioavailability toxicity, and Bioaccumulation of quantum dot nanoparticles to the amphipod Leptocheirus plumulosus. Environmental Science and Technology 46: 5550-5556. PubMed PMID: 22471552; PubMed Central PMCID: PMC3353010.

Brooks, R.T., Eggert, S.L., Nislow, K.H., Kolka, R.K., **Chen, C.Y.**, Ward, D.M. 2012. Preliminary assessment of mercury accumulation in Massachusetts and Minnesota seasonal forest pools. Wetlands 32: 653-663. DOI 10.1007/s13157-012-0298-4.

Sunderland, E., Amirbahman, A., Burgess, N.M., Dalziel, J., Harding, G., Jones, S.H., Kamai, E., Karagas, M.R., Shi, X., **Chen, C.Y.** 2012. Mercury sources and fate in the Gulf of Maine. Environmental Research 119:27-41.

Ward, D.M., Mayes, B, Sturup, S. Folt, C.L., **Chen, C.Y.** 2012. Assessing element-specific patterns of bioaccumulation across New England lakes. Science of the Total Environment 421-422: 230-237. PubMed PMID: 22356871; PubMed Central PMCID: PMC3306538.

**Chen, C.**, Kamman, N., Williams, J., Bugge, D., Taylor, V., Jackson, B., Miller, E. 2012. Spatial and temporal variation in mercury bioaccumulation by zooplankton in Lake Champlain. Environmental Pollution 161: 343-349. PubMed PMID: 21995871; PubMed Central PMCID: PMC3356698.

**Chen, C.Y.**, Driscoll, C.T., Kamman, N.C. Mercury Hotspots in Freshwater Ecosystems: Drivers, Processes, and Patterns. 2012. In: *Mercury in the Environment: Pattern and Process*, (ed.) M. Bank, University of California Press, pp. 143-166.

Miller, E.K., **Chen, C.**, Kamman, N., Shanley, J., Chalmers, A., Jackson, B., Taylor, V., Smeltzer, E., Stangel, P., Shambaugh, A. 2011. Mercury in the pelagic food web of Lake Champlain. Ecotoxicology 21:705-718 DOI 10.1007/s10646-011-0829-4. PMID: 22193540; PubMed Central PMCID: PMC4309279.

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Ward, D.M., K.H. Nislow, **C.Y. Chen**, and C.L. Folt. 2009. Rapid, efficient growth reduces mercury concentrations in stream-dwelling Atlantic salmon. Trans. Amer. Fish. Soc. 139:1-10. DOI: 10.1577/T09-032.1.

**Chen, C.Y.** 2009. China's mercury problem: A sleeping giant? Woodrow Wilson International Center for Scholars. China Environment Series 2008/9 10:57-62.

**Chen, C.**, Dionne, M., Mayes, B., Ward, D., Sturup, S., Jackson, B. 2009. Mercury bioavailability and bioaccumulation in estuarine food webs in the Gulf of Maine. Environ. Sci. Technol. 43: 1804-1810. DOI: 10.1021/es8017122. PubMed PMID: 19368175; PubMed Central PMCID: PMC2670462.

**Chen, C**. and Wilcox, B. 2008. Ecotoxicology of methylmercury: A transdisciplinary challenge. EcoHealth 5:393-395. DOI: 10.1007/s10393-009-0214-4.

Evers, D.C., Mason, R.P., Kamman, N.C., **Chen, C.Y.**, Bogomolni, A.L., Taylor, D.L., Hammerschmidt, C.R., Jones, S.H., Burgess, N.M., Munney, K. Parson, K.C. 2008. An integrated mercury monitoring program for temperate estuarine and marine ecosystems on the North American Atlantic Coast. Ecohealth 5: 426-441. DOI: 10.1007/s10393-008-0205-x

**Chen, C.**, Amirbahman, A., Fisher, N., Harding, G., Lamborg, C., Nacci, D., Taylor, D. 2008. Methylmercury in marine ecosystems: spatial patterns and processes of production, bioaccumulation, and biomagnification. Ecohealth 5: 399-408. DOI: 10.1007/s10393-008-0201-1.

**Chen, C.Y.**, Serrell, N., Evers, D.C., Fleishman, B.J., Lambert, K.F., Weiss, J., Mason, R.P., Bank, M.S. 2008. Methylmercury in marine ecosystems: From sources to seafood consumers – A workshop report. Environ. Health Perspectives 116: 1706-1712. DOI:10.1289/ehp.1121. PubMed PMID: 19079724; PubMed Central PMCID: PMC2599767.

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**Chen, C.Y.**, Pickhardt, P.C., Xu, M.Q., Folt, C.L. 2008. Mercury and arsenic bioaccumulation and eutrophication in Baiyangdian Lake, China. Water, Air, Soil Poll. DOI 10.1007/s11270-007-9585-8. PubMed PMID: 25705061; PubMed Central PMCID: PMC4332851.

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**Chen, C.Y.** and Folt, C.L. 2002. Ecophysiological Responses to warming events by two sympatric zooplankton species. J. Plank. Res. 24 579-589.

Pickhardt, P.C., Folt, C.L., **Chen, C.Y.**, Klaue, B. and Blum, J.D. 2002. Algal blooms reduce the uptake of methylmercury in freshwater food webs. Proceedings of the National Academy of Sciences 99: 4419-4423. PubMed PMID: 11904388; PubMed Central PMCID: PMC123663.

Folt, C.L., **Chen, C.Y.**, Pickhardt, P.C. 2002. Using plankton food web variables as indicators for the accumulation of toxic metals in fish. IN: Wilson, S.H. & Suk, W.A., editors. Biomarkers of Environmentally Associated Disease 287-307 (Lewis Press, N.Y.).

**Chen, C.Y.** and Folt, C.L. 2000. Bioaccumulation and diminution of arsenic and lead in a freshwater food web. Environ. Sci. Technol. 34:3878-3884.

**Chen, C.Y.**, Folt, C.L., Stemberger, R.S, Blum, J.D., Klaue, B., and Pickhardt, P.C. 2000. Accumulation of heavy metals in food web components across a gradient of lakes. Limnol. Oceanogr. 45: 1525-1536.

**Chen, C.Y.**, Sillett, K., Folt, C.L., Whittemore, S, and Barchowsky, A. 1999. Molecular and demographic measures of arsenic stress in *D. pulex*. Hydrobiol. 410: 229-238.

Folt, C.L., **Chen, C.Y.**, Moore, M.V., and Burnaford, J. 1999. Synergism and antagonism among multiple stressors. Limnol. Oceanogr 44: 864-877.

Stemberger, R.S. and **Chen, C.Y.** 1998. Fish tissue metals and zooplankton assemblages of Northeastern US lakes. Can. J. Fish. Aquat. Sci. 55: 339-352.

**Chen, C.Y.** and Folt, C.L. 1997. The potential for hybridization in freshwater copepods. Oecologia 111: 557-564.

Moore, M.V., **Chen, C.Y.**, Driscoll, C.T., Flebbe, P.A., C.L., Folt, Hemond, H.F., Howarth, R.W., Mather, J.R., Murdoch, P.S., and Pace, M.L. 1997. Potential effects of climate change on freshwater ecosystems of the New England/MidAtlantic region. Hydrological Processes. Hydrological Processes 11: 925-947.

**Chen, C.Y.** and Folt, C.L. 1996. Consequences of fall warming for zooplankton overwintering success. Limnol. Oceangr. 41: 1077-1086.

Intergovernmental Panel on Climate Change (IPCC). 1996. Climate Change 1995 Impacts, Adaptations and Mitigation of Climate Change: Scientific-Technical Analyses. Cambridge, Cambridge University Press. (Contributor).

Moore, M.V., **Chen, C.Y.**, Driscoll, C.T., Flebbe, P.A., Folt, C.L., Hemond, H.F., Howarth, R.W., Mather, J.R., Murdoch, P.S., and Pace, M.L. 1995. Summary - New England Mid/Atlantic Region. IN: McKnight, D.M. and A.P.Covich, editors. Regional Assessment of Freshwater Ecosystems and Climate Change in North America. Briefing Report. Published by American Society of Limnology and Oceanography and North American Benthological Society.

**Chen, C.Y.** and Durbin, E.G. 1994. Effect of pH on the growth and carbon uptake of marine phytoplankton. Mar. Ecol. Prog. Ser. 109: 83-94.

**Chen, C.Y.** and C.L. Folt. 1993. Measures of food quality as demographic predictors in freshwater copepods. J. Plank. Res. 15: 1247-1261.

National Research Council (NRC). 1990. Managing Troubled Waters: The Role of Marine Environmental Monitoring. Washington, D.C. National Academy Press. (Contributor).

National Research Council (NRC). 1990. Monitoring Southern California's Coastal Waters. Washington, D.C. National Academy Press. (Contributor).

National Research Council (NRC). 1989. Contaminated Marine Sediments - Assessment and Remediation. Washington, D.C. National Academy Press. (Contributor).

National Research Council (NRC). 1988. Strategies for Obtaining Ship Services. Washington, D.C. National Academy Press. (Contributor).

### **INVITED TALKS**

Chen, C. Global Mercury Pollution: Sources to Human Exposure. Planetary Health: Life in Our Changing World. Geisel School of Medicine, invited panelist, Dartmouth College, January 2019.

Chen, C. Invited guest on National Public Radio's "On Point", January 2019. WBUR.

Chen, C. Does Science Bring Balance to Environmental Policy: A View from the Inside. Plymouth State University, Sidore Lecture Series, April 2018.

Broadley, H.J., K.L. Cottingham, N.A. Baer, K.C. Weathers, H.A. Ewing, R. Chaves. Ulloa, J. Chickering, A.M. Wilson, J. Shrestha, C.Y. Chen. Factors affecting MeHg bioaccumulation in stream biota: the role of dissolved organic carbon and diet. International Conference on Mercury as a Global Pollutant July 2017. Providence RI. (oral presentation, by C. Chen)

Chen, C, K. Bourne, M. Borsuk, A. Curtis. Patterns of mercury and organic co-contaminants in marine and freshwater fish. International Conference on Mercury as a Global Pollutant July 2017. Providence RI. (oral presentation by M. Borsuk)

Chen, C. Mercury Pollution: Sources to Seafood. Norwich University, Northfield, VT, April 2017.

Chen, C. Factors controlling methylmercury fate in aquatic food webs. Bigelow Marine Laboratory, Boothbay Harbor, ME, July 2016.

Chen, C. Climate impact on methylmercury bioaccumulation in estuarine ecosystems. Oceans and Human Health Meeting, Research Triangle Park NC, April 2016.

Chen, C. Mercury pollution: from power plant to human exposure. Invited talk. Toxicity of Power Symposium, Duke University. Durham NC, November 2015.

Chen, C. Connecting mercury science to policy: from sources to seafood. Invited talk. Pacific Basin Consortium Annual Meeting. Jakarta Indonesia, August 2015.

Chen, C.Y., E. Seelen, P.H. Balcom, O.R. Hegyi, E. Demikenko, K.L. Buckman, V.F. Taylor, N. Mazrui, A.N. Curtis, J.E. Ward, R.P. Mason. Climate impact on methylmercury bioaccumulation in estuarine ecosystems. Invited talk. International Conference on Mercury as a Global Pollutant. Jeju, S. Korea, July 2015.

Chen, C., Rardin, L., Serrell, N. Linking mercury science and policy from sources to seafood. Superfund Research Program Annual meeting. San Jose CA November 2014.

Chen, C. Sources to seafood: mercury pollution in the marine environment. Invited seminar. Plymouth Sate University, Plymouth NH November 2014.

Chen, C. Factors controlling mercury fate in aquatic food webs. Invited seminar. Michigan Tech University. Houghton MI. September 2014.

Chen, C., Mason, R., Buckman, K., Taylor, V., Jackson, B., Balcom, P. Factors Controlling Mercury Fate in Coastal Areas of the Gulf of Maine. Invited talk. RARGOM meeting. Boston MA September 2014.

Chen, C. Climate impact on methylmercury fate in coastal ecosystems. NAC-SETAC meeting, Amherst MA June 2014.

Chen, C.Y. Climate impact on methylmercury cycling in coastal ecosystems. Invited talk. Gordon Research Conference. Biddeford ME June 2014

Chen, C., Driscoll, C., Lambert, K., Mason, R., Sunderland, E. Sources to Seafood: A Synthesis of Mercury Pollution in the Marine Environment, Annual meeting of the American Public Health Association, Boston MA, November 2013

Chen, C., Driscoll, C., Lambert, K., Mason, R., Sunderland, E. Sources to Seafood: A Synthesis of Mercury Pollution in the Marine Environment, at the 11<sup>th</sup> International Conference on Mercury as a Global Pollutant. Edinburgh Scotland, July 2013.

Chen, C., Driscoll, C., Lambert, K., Mason, R., Sunderland, E. Sources to Seafood: A Synthesis of Mercury Pollution in the Marine Environment, Keynote Address at the Annual meeting of the North Atlantic Chapter of the Society of Toxicology and Chemistry, Fairlee, VT June 2013.

Chen, C. Ecological factors controlling metal bioaccumulation in aquatic food webs. School of Marine and Atmospheric Sciences, Stony Brook University, Stony Brook NY. Invited talk, April 2011.

Chen, C. Mercury fate and effects in aquatic food webs. Mercury in Acadia and northeast protected areas working group, Acadia ME. Invited talk, April 2011.

Chen, C.Y. Trophic fransfer of mercury in aquatic food webs. Biology Department, Plymouth State University, Plymouth NH, Invited seminar. March 2011.

Chen, C.Y. Mercury Fate in Aquatic Ecosystems. Invited seminar. ATSDR, Center for Disease Control, Atlanta, GA, September 2010.

Chen, C.Y. Ecological Factors Controlling Metal Fate in Aquatic Food Webs. Invited seminar. Marine Biological Laboratory, Woods Hole, MA, April 2010.

Chen, C.Y. Ecological Factors Controlling Metal Fate in Aquatic Food Webs. Invited seminar. University of South Carolina, Columbia SC, April 2010.

Chen, C.Y. Ecological Factors Controlling Metal Fate in Aquatic Food Webs. Invited seminar. University of Connecticut, Avery Point CT, December 2009.

Chen, C.Y. Mercury Fate in Aquatic Ecosystems. Invited seminar. Wellesley College, Wellesley MA, May 2009.

Chen, C.Y. Mercury Fate in Aquatic Ecosystems. Invited seminar. University of Maine at Orono ME, April 2009.

Chen, C.Y. Mercury Transport and Fate in Aquatic Ecosystems. Invited seminar. University of New Hampshire, Durham, NH, October 2008.

Chen, C.Y. and C.L. Folt. Trophic transfer of toxic metals in aquatic food webs. Jiaotong University, Shanghai China, Invited Seminar. December 2002.

Chen, C.Y. and C.L. Folt. Trophic transfer of toxic metals in aquatic food Webs. Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing China, Invited Seminar. December 2002.

Chen, C.Y. and C.L. Folt. Trophic transfer of metals in aquatic food webs. Institute of Zoology of the Chinese Academy of Sciences, Beijing, China, Invited seminar. June 2001.

Chen, C.Y, C.L. Folt, and R.S. Stemberger. Fate and transfer of metals in aquatic food webs. Aquatic Seminar Series, Massachusetts Institute of Technology, Boston, MA, Invited seminar. October 1997.

Chen, C.Y. and C.L. Folt. Food web structure and heavy metals in fish of Northeastern U.S. lakes. EPA Research Seminar Series on Assessing Metals in Ecosystems, Boston, MA, Invited seminar. June 1997.

Chen, C.Y. Implications of climate change for freshwater plankton. Marine Sciences Research Center, State University of New York at Stonybrook, Invited seminar. February 1996.

Chen, C.Y. Trophic transfer of metals in aquatic food webs. Biology Department, Plymouth State University, Plymouth NH, Invited seminar. March 2000.

### **TEACHING EXPERIENCE**

Coral Reef Ecology. (Undergraduate Course) Department of Biological Sciences, Dartmouth College, Little Cayman Research Center, Cayman Islands, Winter 2012, 2014, 2016, 2017, 2018, 2019.

Introductory Marine Biology and Ecology. (Undergraduate Course) Department of Biological Sciences, Dartmouth College, Spring 2002, Fall 2002, 2003, 2004, 2005, 2006, 2007, 2009. 2010, Spring 2013. 2015, 2016, 2019.

Teacher's Field Course. Celia Chen, David Peart (Dartmouth College), and Len Reitsma (PSU). A field-intensive course to help high school teachers to learn how to conduct investigations in forest, avian, and aquatic ecology. Canaan, NH, June 2002, 2004, 2006.

Young Ecologists Field Course. Celia Chen, David Peart (Dartmouth College), and Len Reitsma (PSU). A field intensive course for high school students to learn how to conduct investigations in forest, avian, and aquatic ecology. Canaan, NH, June 2001.

Tropical Field Ecology. (Undergraduate Course) Department of Biology, Plymouth State College, Puerto Rico, Winter 1996, 2000.

Ecology and Evolution. (Undergraduate Course) Department of Biological Sciences, Dartmouth College. Fall 1997.

Fate and Transfer of Metals in Natural Systems. (Graduate Course) Dartmouth Superfund Basic Research Program, Dartmouth College, Fall 1996.

Coral Reef Ecology. (Undergraduate Course) Department of Biological Sciences, Dartmouth College, Discovery Bay, Jamaica, Winter 1995.

Numerous guest lectures for the Chemistry Department, the Environmental Studies Program, Earth Sciences Department at Dartmouth College and Dartmouth Medical School, Colby Sawyer College, Plymouth State University.

# **ADVISING AND MENTORING**

Undergraduates – Independent studies (Yu Kawakami 2006, Amy Higgins 2006, Paul Wright 2007, Kate Labrum 2008); Theses (Advisor: Ashley Hetrick 2008. Amanda Greenberg 2008. Alanna Purdy 2009; Emily Kyker-Snowman 2010-11; Callum Backstrom 2017-2018; Grace Callahan 2018-2019; Thesis Committee member: Jean Polfus 2006, Chelsea Wood 2007. Chelsea Little 2009; Florence Ling 2010-11; Madeline Kreher; 2013; Jesse Rieb 2013; Ellen Irwin 2014; Annie Fagan 2015; Yasmeen Erritouni, David Klinges 2017; Presidential Scholar Advisor (Frances Wang 2010; Callum Backstrom 2016); WISP Students (Shasta Small 2007, Aurora Coon 2007; Cordelia Kumah 2010; Sophomore Research Fellowship (Mackenzie Murphy 2013; Shea Flanagan 2013); Junior Research Fellowship (Adam Schneider, 2013-14; Tammy Hua 2015-2016).

Graduate students – General advising (Paul Pickhardt, Roxanne Karimi, Dartmouth); Committee member (Celia Joaquim-Justo, University of Liege; Amy Dawson, Dartmouth; Erika Schielke, Yale University; Sam Fey, Dartmouth; Ramsa Chaves-Ulloa, Dartmouth; Pianpian Wu, Swedish University of Agricultural Sciences.

Post-doctoral Associates – Kate Buckman, Dartmouth; Joseph Shaw, Dartmouth; Jenn Dijkstra, Wells National Estuarine Research Reserve; Darren Ward, Dartmouth; Vivien Taylor, Dartmouth.

# **OUTREACH AND RESEARCH TRANSLATION ACTIVITIES**

*Dartmouth Superfund Research Program Research Translation*. Represented Dartmouth College as a Civil Society Organization at the first Conference of Parties of the Minamata Convention in Geneva Switzerland, September 2017 and the International Conference on Mercury as a Global Pollutant (2017) as Co-Chair. August and September 2017.

*Dartmouth Superfund Research Program Research Translation*. Represented Dartmouth College and the Coastal and Marine Ecosystem Research Consortium (C-MERC) at the UNEP Mercury Fate and Transport Partnership meeting in Edinburgh Scotland, July 2013.

*Dartmouth Superfund Research Program Research Translation*. As the lead author of the synthesis report, 'Mercury Pollution, Sources to Seafood'', represented Dartmouth College as a Civil Society Organization at the International Negotiating Committee (5) of the Global Mercury Treaty in Geneva Switzerland, January 2013.

*Dartmouth Superfund Research Program Research Translation*. Presented briefings on C-MERC synthesis report *Sources to Seafood: Mercury Pollution in the Marine Environment*, to stakeholder agencies in Washington DC including US State Department, USEPA, NOAA, Congressional staffers. December 2012.

*Dartmouth Superfund Research Program Research Translation*. Co-chaired a Northeast Superfund Research Programs workshop entitled, "Complex Mixtures and Exposures: Analyzing, Modeling and Predicting Fate and Effects at Multiple Levels of Environmental and Biological Systems." Marine Biological Laboratory, Woods Hole, MA. April 2012.

Society of Environmental Toxicology and Chemistry. Co-chaired a session entitled "Killifish (*Fundulus heteroclitus*) and other wild fish models in environmental toxicology: linking molecular mechanism to higher levels of biological organization" at the 2011 Society for Environmental Toxicology and Chemistry meeting, Boston, MA. November 2011.

Dartmouth Superfund Research Program Research Translation. Co-chaired a C-MERC session entitled, "Methylmercury Fate in Marine Ecosystems from Sources to Seafood Consumers" at the 10<sup>th</sup> International Conference on Mercury as a Global Pollutant. Halfax NS. July 2011.

*Dartmouth Superfund Research Program Research Translation*. Co-chaired a workshop of 50 international mercury scientists and stakeholders (C-MERC) convened to synthesize research on the fate of mercury in marine ecosystems. Portsmouth NH, September 2010.

*Public talks*. Keynote address for Twin State Dragonfly Project (2/2011; 3/2013); Passumpsic Naturalists Associations (1/2011); Class of '78 Life Sciences Center dedication keynote address (11/2011).

*Public Library Displays*. Community engagement activity for the Howe Library, Hanover NH, July and August 2010.

*Strategic Planning Session on Capitol Hill*, Superfund Research Program. Meeting of NIEHS staff and Superfund Research Program (SRP) scientists with Congressional staff on the SRP program and the strategic planning process. Washington D.C., January 2010.

*Classroom Lectures to High School Students*. Windsor High School, Windsor VT, Woodstock High School and Middle School, Hartford Middle School, High School. 2006, 2007, 2008, 2009, 2010, 2013.

*NIEHS Workshop*. "Fate and Bioavailability of Mercury in the Aquatic Ecosystems and Effects on Human Exposure". Coordinator of 40 participant workshop of scientists, environmental managers, and policy-makers. University of NH, Durham NH, November 2006.

Hubbard Brook Research Foundation "Science Links Project". Participated on a scientific panel that produced synthesis documents on Hg fate in the Northeast US to inform decision-makers and the public. 2003-2007.

*NH State Legislature Presentation*, Committee on Agriculture and Environment. Pesticides in Our Environment. Concord NH, September 2004.

*Public Display on Aquatic Biology*. Connecticut River Riverfest. Wilder VT, June 2000, 2001, 2003, 2004.

*Dartmouth Mercury Consortium Meeting*. Center for Environmental and Sciences, Dartmouth College, Organizer. April 2004.

Northeast Ecosystems Research Consortium Meeting. Portland ME, December 2003.

*Environmental Detectives Program.* Classroom visit to Catholic Middle School in Barre VT, November 2003.

*Mercury Work Group for the Human Biomonitoring Project*. NH Department of Health and Human Services. Meeting to develop implementation strategy. Concord NH, February, April 2003.

*Environmental Detectives Program.* Science advisor middle school science curriculum development project with the Montshire Museum of Science, Hanover NH June 2003.

*Classroom Visits*. Meetings and classroom time with Jeannie Kornfield to implement aquatic ecology laboratory in an Environmental Science class at Hanover High School, Hanover NH, January 2003.

*Environmental Detectives Program.* Scientific presentation, in workshop format on successive days of a week-long Summer Institute for middle school teachers, the middle school science curriculum development project with the Montshire Museum of Science in Norwich VT, July 2002.

Guest lecture on "Environmental Science and Research" for the Tucker Foundation, Dartmouth College, Hanover NH, January 2002.

*Environmental Detectives Program.* Presenter for Lunch and Lab Tours hosted by Dartmouth Toxic Metals Program, with presentations and tours for the middle school teachers involved in the program's collaborative environmental science curriculum project with the Montshire Museum, Norwich VT, February 2001.

*Classroom Visit*. Presentation on "The Aquatic Food Web" to fourth and fifth grade classes at Dothan Brook Elementary School. Wilder VT, November 2000. Participation in Career Day, March 2013, 2015.

*Earth Day Panel*. Speaker on aerial herbicide spraying in northern New Hampshire, Vermont, and Maine. Sponsored by the Environmental Studies Division of the Dartmouth Outing Club. Dartmouth College, Hanover NH, Invited panelist. April 1997.

New England Environmental Goals and Indicators Project Mercury Indicators Workshop. Invited participant. Durham NH, December, 1997.

# PROFESSIONAL COMMITTEES AND ORGANIZATIONS

International Conference on Mercury as a Global Pollutant 2019 (Scientific Steering Committee)

International Conference on Mercury as a Global Pollutant 2017 (Co-Chair)

International Conference on Mercury as a Global Pollutant 2015 (Scientific Steering Committee)

North Atlantic Chapter of the Society of Environmental Toxicology and Chemistry Board (2013-2016)

Gelfond Fund Advisory Board, Stony Brook University (2013- present)

USEPA Science Advisory Board Mercury Panel Member (2011)

USEPA Science Advisory Board Ecological Processes and Effects Committee Member (2011-2017)

USEPA Science Advisory Board Lake Erie Phosphorus Objectives Review Panel (2014-2017)

Lake Sunapee Protection Association Science Advisory Committee (2005-present)

Ecohealth Guest Editor 2007-2008

Envrionmental Research Guest Editor 2011-2012

Environmental Health Perspectives Guest Editor 2011-2012

Estuaries and Coasts Guest Editor 2013-2015

Science of the Total Environment Guest Editor 2015-2017

Ecohealth Review Editor 2009-present

Ambio Guest Editor 2016-2018