Chelsea M. Rochman

Assistant Professor, Department of Ecology & Evolutionary Biology
University of Toronto
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HIGHLIGHTS

- Pioneer and internationally recognized leader in microplastic pollution research
- Strong record of grantsmanship

CURRENT

- Regular publication of high-impact research (H-index: 14; Google Scholar citations: 1996; papers in Science, Nature, PNAS)
- PI of large, productive research lab (28 trainees, including 7 full-time graduate students)
- Work regularly featured in news, documentaries, and other media (e.g., CBC, New York Times, Washington Post, The Atlantic, LA Times, National Geographic, BBC, NPR, etc.).
- Successfully work with industry and government to shape science-based policy (e.g., California Bill AB888, US Microbead-free Waters Act, Canada G7 ocean plastics charter)
- Strong record of outreach (e.g., founder, Toronto Trash Wheel project; regularly lead science communication training workshops)

EDUCATION

PhD	University of California, Davis and San Diego State University; Joint Doctoral
	Program in Ecology, May 2013
BS	University of California San Diego; Biology: Ecology, Behavior and Evolution,
	December 2007

APPOINTMENTS & EXPERIENCE

COMMENT	
2016-	Assistant Professor, Dept. of Ecology & Evolutionary Biology, University of
	Toronto
2016-	Research Consultant, Ocean Conservancy
PAST	
	De title Could Develope of Fellow Could for Course of the Distance for the
2014-2016	David H. Smith Postdoctoral Fellow, Society for Conservation Biology; based
	at University of California Davis and University of Toronto
2013-2014	Postdoctoral Scholar, Aquatic Health Program, School of Veterinary Medicine,
	University of California Davis

PUBLICATIONS

JOURNAL ARTICLES

Smith, M., Love, D.C., Rochman, C.M., Neff, R.A. 2018. Microplastics in seafood and implications for human health. *Current Environmental Health Reports*. 1-12.

Rochman, C.M. 2018. Microplastics research: from sink to source. Science. 360, 28-29.

Thaysen, C., Stevack, K., Ruffolo, R., Poirier, D., De Frond, H., DeVera, J., Sheng, G., **Rochman, C.M.** 2018. Leachate from expanded polystyrene cups is toxic to aquatic invertebrates (*C. dubia*). *Frontiers in Marine Science*. 5, 71.

Nguyen, B., Graham, P. J., **Rochman, C.M.**, Sinton, D. 2018. A platform for high-throughput assessments of environmental multi-stressors. *Advanced Science*. 1700677.

Karakolis, E., Nguyen, B., Bem You, J., Graham, P. J., **Rochman, C.M.**, Sinton, D. 2018. Digestible fluorescent coatings facilitate more accurate quantification of microplastic ingestion. *Env. Sci. Technol. Lett.* 5, 62-67.

Su, L., Cai, H., Kolandhasamy, P., Wu, C., **Rochman, C.M.**, Shi, H. 2018. Using the Asian clam as an indicator of microplastic pollution in freshwater ecosystems. *Environmental Pollution*. 234, 347-355.

Rochman, C.M., Parnis, J. M., Serrato, S., Browne, M. A., Reiner, E. J., Robson, M., Young, T., Diamond, M. L., Teh, S. J. 2017. Direct and indirect effects of different types of common microplastics in a freshwater foodchain. *PLOS ONE*. 12 (11) e0187664.

Borrele, S., *Rochman, C.M., Liboiron, M., Bond, A. L., Lusher, A., Bradshaw, H., Provencher, J. F. 2017. Why we need an international agreement on marine plastic pollution. *Proceedings of the National Academy of Sciences*. 114 (38) 9994–9997. *Corresponding author and shared first authorship.

Munno, K., Helm, P.A., Jackson, D.A., **Rochman, C.M.,** Sims, A. 2017. Impacts of temperature and selected chemical digestion methods on microplastic particles. *Environmental Toxicology and Chemistry*. 37 (1) 91-98.

McDevitt, J. P., Criddle, C. S., Morse, M., Hale, R. C., Bott, C. B., **Rochman, C.M.** 2017. Addressing the issue of microplastics in the wake of the Microbead-Free Waters Act – A new standard can facilitate improved policy. *Environmental Science and Technology*. 51 (12) 6611-6617.

Rochman, C.M., Regan, F., Thompson, R.C. On the harmonization of methods for measuring the occurrence, fate and effects of microplastics. *Analytical Methods*. 9 (9), 1324-1325.

Wagner, J., Wang, Z., Ghosal, S., Rochman, C.M., Gassel, M., Wall, S. 2017. A novel method

for extraction and identification of microplastics in ocean trawls and fish gut matrices. **Analytical Methods**. 9 (9) 1324-1325.

Sagarin, R.D., Adams, J., Blanchette, C.A., Brusca, R.C., Chorover, J., Cole, J.E., Lubchenco, J., Micheli, F., Munguia-Vega, A., **Rochman, C.M.**, Troch, P.A., van Haren, J. 2016. Between control and complexity: Opportunities and challenges for marine mesocosms. *Frontiers in Ecology and the Environment*. 14 (7) 389-386.

Rochman, C.M., Cook, A., Koelmans, A.A. 2016. Plastic debris and policy: Using current scientific understanding to invoke positive change. *Environmental Toxicology and Chemistry*. 35 (7) 1617-1626.

Rochman, C.M. 2016. Ecologically relevant data are policy-relevant data. *Science*. 352 (6290) 1172. *Invited Perspective*.

Rochman, C.M. 2016. Strategies for reducing ocean plastic debris should be diverse and guided by science. *Environmental Research Letters*. 11, 014006. Invited Perspective. *In ERL Monthly Highlights*.

Rochman, C.M., Browne, M.A., Underwood, A.J., van Franeker, J.A., Amaral-Zettler, L.A., Thompson, R.C. 2016. Perceived and demonstrated ecological impacts of marine debris. *Ecology*. 97 (2), 303-312.

Green, S., Armstrong, J., Bogan, M., Darling, E., Kross, S., **Rochman, C.M.**, Smyth, A., Verissimo, D. 2015. De-defining conservation. *Conservation Letters*. 8 (6) 385-387.

Rochman, C.M., Tahir, A., Williams, S.L., Baxa, D.V., Lam, R., Miller, J.T., Teh, F., Werorilangi, S., Teh, S.J. 2015. Anthropogenic debris in seafood: Plastic debris and fibers from textiles in fish and bivalves sold for human consumption. *Nature Scientific Reports*. 5, 14340. *Sci Reports top 100 read articles for 2015*.

Rochman, C.M., Kross, S.M., Armstrong, J.B., Bogan, M.T., Darling, E.S., Green, S.J., Smyth, A.R., Veríssimo, D. 2015. Scientific evidence supports a ban on microbeads. *Environmental Science and Technology* 49, 10759-10761. *Most read article in ES&T for December, 2015.*

Rochman, C.M., Kurobe, T., Flores, I., Teh, S. J. 2014. Early warning signs of endocrine disruption in adult fish from the ingestion of polyethylene with and without sorbed chemical pollutants from the marine environment. *Sci. Tot. Environ*. 493, 656-661.

Klepadlo, C., **Rochman, C.M.**, Davison, P. 2014. Report of *Myctophum phengodes* (Osteichthyes, Myctophidae) with extraneous photophores. *Copeia*. 2014(1), 106-108.

Rochman, C.M., Boxall, A. B. A. 2014. Environmental relevance: A necessary component of experimental design to answer the question, "SO WHAT?" *Integrated Environmental Assessment and Management* 10, 311-312.

Rochman, C.M., Lewison, R. L., Eriksen, M., Allen, H., Cook, A., Teh, S. J. 2014. Polybrominated diphenyl ethers (PBDEs) in fish tissue may be an indicator of plastic

contamination in marine habitats. Science of the Total Environment 476-477, 622-633.

Rochman, C.M., Hentschel, B. T., Teh, S. J. 2014. Long-term sorption of metals is similar among plastic types: implications for plastic debris in aquatic environments. *PLOS ONE* 9(1), e85433.

Rochman, C.M., Hoh, E., Kurobe, T., Teh, S. J. 2013. Ingested plastic transfers hazardous chemicals to fish and induces hepatic stress. *Nature Scientific Reports* 3, 3263.

Rochman, C.M., Manzano, C., Hentschel, B., Massey-Simonich, S. L., Hoh, E. 2013. Polystyrene plastic: a source and sink for polycyclic aromatic hydrocarbons in the marine environment. *Environmental Science and Technology*. 47 (24), 13976-13984...

Rochman, C.M. 2013. Plastics and priority pollutants: a multiple stressor in aquatic habitats. *Environmental Science and Technology.* 47, 2439-2440.

Rochman, C.M., Browne, M. A., Halpern, B. S., Hentschel, B. T., Hoh, E., Karapanagioti, H. K., Rios, L. R., Takada, H., Teh, S., Thompson, R. C. 2013. Classify plastic waste as hazardous. *Nature*, 494, 169-171.

Rochman, C.M., Hoh, E., Hentschel, B. T., Kaye, S. 2013. Long-term field measurement of sorption of organic contaminants to five types of plastic pellets: implications for plastic marine debris. *Environmental Science and Technology*. 47, 1646-1654.

Van, A., **Rochman, C.M.**, Flores, E., Hill, K., Vargas, E., Vargas, S., Hoh, E. 2011. Persistent organic pollutant content of marine debris found on beaches in San Diego, California. *Chemosphere* 86, 258-263.

EDITED VOLUMES

Rochman, C.M., Thompson, R. T., Regan, F. 2017.Microplastics in the Environment. *Analytical Methods*. Issue 9.

Koelmans, B, **Rochman, C.M.** 2016. Plastic debris in the aquatic environment – Mechanisms and implications. *Environmental Toxicology and Chemistry*. 35 (7) 1617 -1676.

REPORTS

FAO (2017) Microplastics in fisheries and aquaculture. (Lusher, A. and Hollman, P., eds).

GESAMP (2016). "Sources, fate and effects of microplastics in the marine environment: part two of a global assessment" (Kershaw, P.J., and **Rochman, C.M.**, eds).

STAC (2016) "Technical Review of Microbeads/Microplastics in the Chesapeake Bay".

BOOK CHAPTERS

Rochman, C.M. 2016. The role of plastic debris as another source for the bioaccumulation of chemicals in lower-trophic level organisms. *Springer Online Textbook Chapter in The Handbook of Environmental Chemistry*. Springer International Publishing. 1-15.

Rochman, C.M. 2015. The complex mixture, fate and toxicity of chemicals associated with plastic debris in the marine environment. *Springer Online Textbook Chapter in Marine Anthropogenic Litter.* Springer International Publishing. 117-140.

FELLOWSHIPS & GRANTS (in CAD unless noted otherwise)

FELLOWSHIPS & AWARDS

2014-2016	David H. Smith Postdoctoral Fellowship	\$140K (USD)
2013	Knauss Fellowship	(declined)
2011-2013	ARCS Scholarship	\$15K (USD)
2010-2013	NSF Graduate Research Fellowship	\$120K (USD)
2012	COAST Travel Award	\$1.5K (USD)
2012	COAST Graduate Student Award	\$3K (USD)
2011	The Next Young WIST to Watch. AWIS Student Scholarship	\$1K (USD)
2011	SETAC-ACS Student Talk Award	\$1.5K (USD)

RESEARCH GRANTS

2018-2019	Ocean Conservancy	\$15K (USD)
2019-2020	National Geographic	\$31K (USD)
2018-2019	NSERC Engage	\$25K
2018-2022	NSERC Discovery	\$145K
2018-2019	SESYNC Pursuit, Co-PI: M. Barnes	\$125K (USD)
2018	NCP Microplastics in the Canadian Arctic	\$10K
2018-2019	San Francisco Estuary Institute (Mussels)	\$19K (USD)
2018-2020	Hoover Foundation	\$58K (USD)
2017-2020	ECCC, Microplastics in Great Lakes Watersheds	\$90K
2017-2020	NSERC Strategic Project Grant, Co-PI: D. Sinton	\$645K
2017-2020	DFO, NCAG, Co-PI: M. Diamond	\$220K
2017	5Gyres	\$20K (USD)
2017	Ocean Conservancy	\$15K (USD)
2017-2020	San Francisco Estuary Institute (Microplastics)	\$142K (USD)
2017-2020	MOECC	\$105K
2017-2020	MOECC	\$130K
2014	UOIP Seed Grant UC Davis, Co-PI: S. J. Teh	\$10K (USD)
2013-2015	NOAA FY2013 Marine Debris Program, Co-PI: S. J. Teh	\$200K (USD)
2011-2013	EPA Superfund Region 9/Marine Debris Program	\$200K (USD)
2010	Kickstarter Crowd-sourced Funding	\$1.2K (USD)
2010	PADI Foundation Grant	\$7K (USD)
2010-11	SoCal SETAC Research Grant	\$1.5K (USD)

TEACHING

COURSES

2017-present Ecosystems and the Human Footprint, EEB208H1 2008-2009 San Diego State University, Biology Lab 100

WORKSHOPS

2018 Canadian Society of Ecology and Evolution, Science Communication

2018 NACCB, Mentor/Mentee Workshop

2015-present University of Toronto, St. George, Science Communication
 2016 University of Toronto, Scarborough, Science Communication
 2016 University of Toronto, Mississauga, Science Communication

2015 California EPA, Science Communication

2012 University of California, Davis, NSF GRFP Writing

INDIVIDUAL LECTURES

2016 University of Toronto, Mississauga, Science and Society

2016 York University, Resource Management

2015 University of Texas, Austin, Environmental Science Course

2015 University of California, Davis, Communication Beyond Academia 2014 University of California, Davis, Environmental Science and Policy

2013-2014 University of California, Davis, Ecotoxicology

ADVISING

POSTDOCTORAL

2017-present Anna Kolomijeca (Co-Supervisor)

2018-present Stephanie Borrelle

2018-present Shelir Ebrahimi (Co-Supervisor)

PhD

2017-present Lisa Erdle2017-present Joel Kim

2017-present Kennedy Bucci2018-present Bonnie Hamilton

2018-present Samantha Athey (Co-Supervisor)

MSc

2014-2016 Heather Richard (Co-Supervisor)

2017-present Xia Zhu

2018-present Clara Thaysen2018-present Rachel Giles

UNDERGRADUATE THESIS

2016-2017 Monina Fe

2016-2018 Clara Thaysen (CGCS and NSERC USRA Fellowships)

2017-2018 Edie Guo (CGCS Fellowship)

2017-2018 Lara Werbowski (NSERC USRA Fellowship)

2017-2018 Hayley McIlgorm (Co-Supervisor)

2017-2018 Jack Linh (Co-Supervisor)

2017-present Jacqueline Bikker2017-2018 Aimee Huntington

2018 Brenda Lim 2018-present Annissa Ho

2018-present Cassandra Sherlock 2018-present Natasha Klasios Cole Brookson 2018-present 2018-present Antonino Calarco 2018-present Samantha Santoro Ashima Kaura 2018-present Ariel Earn 2018-present 2018-present Natasha Druric 2018-present Tsz Hung

UNDERGRADUATE WORK-STUDY

2016-2017 Matthew Tulio2018-present Antonino Calarco

2018-present Lauren Ead 2018-present Tina Wu

UNDERGRADUATE TECH/VOLUNTEER

2018-present Maheen Arshad

SERVICE

DEPARTMENTAL

2018-2019 Graduate Admissions 2017-2019 Atwood Committee

2017-2018 Undergraduate Committee

EXTERNAL

2014-present Editorial Board Member, Science of the Total Environment

2013-present Scientific Advisor, Trash Free Seas Alliance, Ocean Conservancy

2010-preent 5Gyres Science Advisory Board

REFEREE ACTIVITIES

Proceedings of the Royal Society B; Chemosphere; Comparative Biochemistry and Physiology; DEFRA; Ecological Applications; Environmental Chemistry; Environmental Science and Technology; Environmental Science and Technology Letters; Environment International; Environmental Pollution; Environmental Research; Environmental Toxicology and Chemistry; Estuarine, Coastal and Shelf Sciences; Frontiers in Ecology and Environment; Global Change Biology; Great Lakes Research; Marine Environmental Research; Marine Pollution Bulletin; Nature Ecology and Evolution; PLOS ONE; Science; Science Advances; Science of the Total Environment; Scientific Reports; TREE

PRESENTATIONS

SEMINARS		
2018	UC Riverside, Environmental Science, Riverside, CA, USA	
2018	Southern California Coastal Water Research Project, Costa Mesa, CA, USA	
2018	McGill University, Organismal Biology, Montreal, QC, Canada	
2018	University of Michigan, SEAS, Ann Arbor, MI, USA	
2018	Univ. of Toronto Scarborough, Biology, Scarborough, ON, Canada	
2018	Univ. of Toronto Mississauga, Geography, Mississauga, ON, Canada	
2018	McMaster University, Biology, Hamilton, ON, Canada	
2017	Univ. of Toronto St. George, EEB, Toronto, ON, Canada	
2015	Virginia Institute of Marine Science, Gloucester Point, VA, USA	
2015	Bodega Bay Marine Lab, Bodega Bay, CA, USA	
2015	Ministry of the Environment, Toronto, ON, Canada	
2015	University of Texas Austin, Hydrology, Austin, TX, USA	
2015	UC Davis, Pharmacology and Toxicology, Davis, CA, USA	
2014	Heriot-Watt University, Edinburgh, Scotland	
2013	Department of Toxic Substances Control, Berkeley, CA, USA	
2009	Scripps Institution of Oceanography, San Diego, CA, USA	
CONFERENCE PRESENTATIONS (ORAL) *Invited; **Invited Plenary		
2010	**Gardon Conformed Environment (Mater) New Hampshire LICA	

2018	**Gordon Conference, Environment (Water), New Hampshire, USA
2018	**6 th International Marine Debris Conference, San Diego, CA, USA
2018	*6 th International Marine Debris Conference, San Diego, CA, USA
2018	6 th International Marine Debris Conference, San Diego, CA, USA
2017	**PICES, Vladivostok, Russia
2017	*Japanese Fisheries Society Meeting, Tokyo, Japan
2016	**Our Ocean, US State Department, Washington DC, USA
2016	MICRO2016, Lanzarote, Spain
2015	Society for Conservation Biology, Montpellier, France
2015	*GYRE Symposium, Atlanta, GA, USA

2014	SCB International Marine Conservation Congress, Glasgow, Scotland
2014	*Monterey Bay Symposium, Monterey, CA, USA
2014	**CWEA Annual Conference, Santa Clara, CA, USA
2013	SETAC North America, Nashville, TN, USA
2012	SETAC North America, Long Beach, CA, USA
2012	American Chemical Society National Conference, Philadelphia, PA, USA
2012	*Ecological Society of America National Conference, Portland, OR, USA
2012	**CWEA Annual Conference, Sacramento, CA, USA
2012	*CWEA Annual Conference, Sacramento, CA, USA
2011	SETAC North America, Boston, MA, USA
2011	*Women in Science and Technology, San Diego, CA, USA
2011	So Cal SETAC, Huntington Beach, CA, USA
2011	5 th International Marine Debris Conference, Honolulu, HI, USA
2010	*Marine Environmental Problems Symposium, Matsuyama, Japan
2008	Western Society of Naturalists Annual Meeting, Vancouver, BC, Canada

CONFERENCE PRESENTATIONS (POSTER) *Invited

2014	SETAC, Vancouver, BC, Canada
2012	American Chemistry Society, San Diego, CA, USA

*CSU COAST Faculty-Student Poster Reception, Long Beach, CA, USA

CONFERENCE SESSION CHAIR

2018	6 th International Marine Debris Conference, San Diego, CA, USA
2018	6 th International Marine Debris Conference, San Diego, CA, USA
2016	SETAC, Orlando, FL, USA
2014	SETAC, Vancouver, BC, Canada
2012	SETAC, Long Beach, CA, USA

CONFERENCE PLANNING COMMITTEE

2018	North American Congress for Conservation Biology, Toronto, ON, Canada
2019	SETAC, Toronto, ON, Canada

PROFESSIONAL MEMBERSHIPS

2015-present	Member, American Society of Limnology and Oceanography
2014-present	Member, Society for Conservation Biology
2010-present	Member, Society of Environmental Toxicology and Chemistry (SETAC)

2018-present	SETAC Interest Group on Microplastics (Co-Chair)
2018-present	SESYNC Plastic Emissions Working Group (Co-PI)
2016-2017	FAO Plastic pollution in fisheries and aquaculture
2016-2017	GESAMP Microplastics in the environment (Co-chair)
2012-2014	NCEAS (National Center for Ecological Analysis and Synthesis)

PROFESSIONAL DEVELOPMENT

2016	Media Training, Intermedia Communications
2016	Policy Training, Fmr. US Forest Service Chief Mike Dombeck (Clinton Admin)
2015	Storytelling Training, Intermedia Communications
2015	Facilitation Training, Dovetail Consulting
2014	Leadership Training, Dr. Maureen Ryan

SELECTED OUTREACH

2018 2018 2018 2018 2017-present	Organizer, "Clean Up The Don" public litter cleanup event Speaker, "Lake Ontario Evenings" hosted by TRCA Panelist, film screening of "A Plastic Ocean" Panelist, film screening of "Smog of the Sea" Founder, Co-director, Toronto Trash Wheel Project. With co-director Susan Debreceni, I created a working group of students and postdocs, government agency stakeholders and relevant NGOs, to bring a floating aquatic trash interception device (i.e., a "Trash Wheel") to Toronto's waterfront. With University of Toronto's Advancement Office (E. Wilson), I submitted a proposal (\$2M CAD) to fund, construct, install, and run educational programming for the Trash Wheel to Ports Toronto and the City of Toronto's Division of Solid Waste. This proposal is presently under active consideration.
2017 2018-present	Participant, Women in Science Group, EEB, UofT Board Member, Heirs to Our Ocean (NGO)
2016-present 2015	Speaker, Biosphere 2 Earth Day, Tucson, AZ, USA
2015	Ocean Plastic Teacher Training, Speaker, Farallones Marine Sanctuary
2014-2015	Co-founder, WiSci, Women in Science Group, UC Davis
2014	Session Leader, Ocean Plastic Teacher Training, Monterey Bay Aquarium
2014	Webinar Speaker, Oceans of Plastic: from Science to Solutions, 5Gyres
2013	Content Advisor, "Plastics, Ahoy!" Children's book
2010-2014	Guest Blogger, DeepSea News
2013 2013	Speaker, Community Outreach Academy
2013	Organizer, VetMed 3B Open House

2012	Panelist, Plastics Pollution Panel, Santa Monica College
2012	Speaker, "So you think you can be a marine biologist?", SDSU
2011-2012	Seminar Coordinator, SDSU Marine Ecology & Biology Student Association
2011	Speaker, Pacific Ridge School Assembly
2011	Advisor, Rise Above Plastics Campaign, San Diego Surfrider
2011	Presenter, Algalita Youth Summit
2010-2011	Presenter, Girls in Ocean Science
2011-2017	Board of Directors, New Ocean Blue (NGO)
2010	Guest Writer, Scripps Magazine

SELECTED POLICY EXPERIENCE

2018	Speaker and Participant, APEC Meeting on Marine Litter, Busan, S Korea
2018	Participant, United Nations Ad-Hoc Working Group on Marine Litter, UNE
	Headquarters
2018	Expert Witness, Microfiber Bill in Connecticut
2017	Speaker, A World of Blue. Annual Parliamentary Hearing at UN Headquarters
2016	Speaker, Our Oceans Conference hosted by US Secretary of State Kerry
2015	Expert Witness, AB888 (CA microbead bill)
2015	Policy Brief Published through SCB: Banning Microbeads from Personal
	Care Products, 1 st author
2014	Reviewer, Global Oceans Assessment, United Nations
2014	Speaker, National Academies, Discussion Forum on Microplastics
2012	Speaker, USEPA Region 9, Border Meeting
2010	Participant, Ocean Conservancy, Summit on Marine Debris, Washington, DC
2010	Speaker, COMPASS Meetings, Sacramento, CA
2007	Participant, American Chemistry Council Marine Debris, La Jolla, CA

SELECTED MEDIA

My work or expertise is featured in news media (print, radio, online or TV) several times per month. Original coverage in high profile publications includes:

60 Minutes

The Atlantic

BBC

CBC

CBS

Chemical and Engineering News

The Chicago Tribune

Daily Mail

The Guardian

Huffington Post

Los Angeles Times

National Geographic

National Post

National Public Radio

Nature News

Newsweek

New Scientist

New York Times

PBS

PNAS News

Popular Science

Public Radio International

Scientific American

Smithsonian

Time Magazine

The Washington Post