

## Awards for the Best Papers in *ES&T Letters* in 2017!

*Environmental Science & Technology Letters* (*ES&T Letters*) is now celebrating its fifth year in presenting studies on environmental topics that require urgent publication. For many, fitting their story into our 3000 word limit (5000 words for Brief Reviews) has been challenging, but we are continuing to see greater interest in these shorter-format style publications each year. In just the first three issues of 2018, we had a >50% increase in the number of published articles compared to the same three months in 2017.

Each year, the editors review papers that were published and select a few that particularly stood out for our Best Paper Award based on the quality of the science, the impact of the findings, and the overall level of interest of our readers based on many factors, including downloads, news stories, citations, and whether the paper was selected as an Editor's Choice. Just click on a paper published in any American Chemical Society (ACS) journal, and you can see how many downloads or other social media or news listings have accumulated for that publication (select article metrics or Altmetrics). This year, we again have a great selection of papers on topics that required urgent publication, for example, studies on chemicals of special concern in our environment, such as neonicotinoid insecticides and flame retardants, the fate and quantification of microplastics, and a study that has provided a fundamental update on critical parameters used in photochemistry studies. Four of the five papers are original research; two address methods or outcomes of chemical analyses, and one paper is a Brief Review. We provide short summaries below of the five papers selected as Best Papers in 2017.

The use of organophosphate flame retardants (OPFRs) and plasticizers has greatly increased over the past decade due to their replacement of other materials deemed more toxic and persistent by regulatory agencies. Chlorinated alkyl phosphates and nonhalogenated aryl phosphates have been frequently detected in consumer products and dust within domestic settings. Exposure assessments to the general population, however, have not been evaluated over time. [Temporal Trends in Exposure to Organophosphate Flame Retardants in the United States](#) by Kate Hoffman, Craig M. Butt, Thomas F. Webster, Emma V. Preston, Stephanie C. Hammel, Collen Makey, Amelia M. Lorenzo, Ellen M. Cooper, Courtney Carignan, John D. Meeker, Russ Hauser, Adelheid Soubry, Susan K. Murphy, Thomas M. Price, Cathrine Hoyo, Emma Mendelsohn, Johanna Congleton, Julie L. Daniels, and Heather M. Stapleton reported on temporal trends of several OPFRs and plasticizers within the urine of humans combining 14 epidemiologic studies in the United States from 2002 to 2015. Consistent with production volumes, these data indicate exposure to at least two compounds, tris(1,3-dichloro-2-propyl) phosphate (TDCIPP) and triphenyl phosphate (TPHP), has significantly increased by up to 15-fold over this time period. Their results provide important data that can be coupled with effects thresholds to assess the risks of these compounds to human health and the environment (*Environ. Sci. Technol. Lett.* 2017, 4 (3), 112–118 DOI: 10.1021/acs.estlett.6b00475).

In the 1967 movie *The Graduate*, Mr. McGuire said “There’s a great future in plastics. Think about it. Will you think about it?” There has been much thought about plastic in recent years because of the presence of microplastics in aquatic systems. In the Review [Reducing Uncertainty and Confronting Ignorance about the Possible Impacts of Weathering Plastic in the Marine Environment](#), Annika Jahnke, Hans Peter H. Arp, Beate I. Escher, Berit Gewert, Elena Gorokhova, Dana Kühnel, Martin Ogonowski, Annegret Potthoff, Christoph Rummel, Mechthild Schmitt-Jansen, Erik Toorman, and Matthew MacLeod lay out the case for plastic to be a potential planetary boundary threat. Highlighted is the urgent need for work to understand plastic weathering in marine environments. Critical knowledge gaps include how weathering affects particle morphology and the sorption/desorption of chemicals, potential adverse effects of weathered plastics on biological systems, the role of biofilms in particle fate, and comprehensive risk assessment. Standardized testing protocols for testing of biological and chemical impacts are also needed (*Environ. Sci. Technol. Lett.* 2017, 4 (3), 85–90 DOI: 10.1021/acs.estlett.7b00008).

In the past few years, no class of pesticides has received more attention than the neonicotinoids. Much of the media coverage has focused on potential adverse effects on bees, but as their usage has risen, these compound have been detected in surface and ground waters. Via the analysis of tap water samples in [Occurrence of Neonicotinoid Insecticides in Finished Drinking Water and Fate during Drinking Water Treatment](#), Kathryn L. Klarich, Nicholas C. Pflug, Eden M. DeWald, Michelle L. Hladik, Dana W. Kolpin, David M. Cwiertyny, and Gregory H. LeFevre reveal that the neonicotinoids are not completely removed during conventional drinking water treatment. Partial removal was observed via hydrolysis for thiamethoxam and during chlorination for clothianidin. A critical finding of this study is that only by using granular activated carbon (GAC) were all neonicotinoids removed, and this was confirmed by collecting data from a drinking water treatment plant using GAC (*Environ. Sci. Technol. Lett.* 2017, 4 (5), 168–173 DOI: 10.1021/acs.estlett.7b00081).

The study [p-Nitroanisole/Pyridine and p-Nitroacetophenone/Pyridine Actinometers Revisited: Quantum Yield in Comparison to Ferrioxalate](#) by Juliana R. Laszakovits, Stephanie M. Berg, Brady G. Anderson, Jessie E. O'Brien, Kristine H. Wammer, and Charles M. Sharpless has already been appreciated and well cited by the photochemistry community. This study compared the photon irradiance by ferrioxalate and p-nitroanisole/pyridine (PNA-pyr) at several wavelengths and revisited the pyridine concentration dependence of the PNA-pyr quantum yield, as well as recommending a molar absorption spectrum of PNA for use by photochemists. An updated equation for the pyr dependence of the PNA-pyr quantum yield was determined. Finally, this study compared

Received: March 21, 2018


Accepted: March 21, 2018


Published: April 10, 2018

the PNA-pyr system to the *p*-nitroacetophenone/pyridine (PNAP-pyr) system and found that the PNAP-pyr quantum yield was also too high and suggested a suitable equation for the PNAP-pyr system. Let there be light! (*Environ. Sci. Technol. Lett.* **2017**, *4* (1), 11–14 DOI: 10.1021/acs.estlett.6b00422).


Back to *The Graduate* and our future concerns with microplastics. A topic of great importance is the means to quantify microplastics (MPs) in the environment. [A Simple Method for Quantifying Polycarbonate and Polyethylene Terephthalate Microplastic in Environmental Samples by Liquid Chromatography–Tandem Mass Spectrometry](#) by Lei Wang, Junjie Zhang, Shaogang Hou, and Hongwen Sun provides researchers with a new way of quantifying MPs with different degrees of polymerization. Alkali-assisted thermal hydrolysis was used to depolymerize polycarbonate and polyethylene terephthalate (PET) in a pentanol or butanol system. By determining the concentrations of the resulting bisphenol A and *p*-phthalic acid using LC–MS/MS, researchers could determine the amount of PC or PET in the MPs. This method was used to measure MPs in a variety of environmental samples, including sludge, sediments, indoor dust, mussels and clams, and salt (*Environ. Sci. Technol. Lett.* **2017**, *4* (12), 530–534. DOI: 10.1021/acs.estlett.7b00454).

We are proud that these articles and many others that will clearly impact the field were published in *ES&T Letters* in 2017. We look forward to seeing all of your contributions in 2018.

William Arnold 

Bruce E. Logan 

Daniel Schlenk

Staci Simonich 

## ■ AUTHOR INFORMATION

### ORCID

William Arnold: 0000-0003-0814-5469

Bruce E. Logan: 0000-0001-7478-8070

Staci Simonich: 0000-0003-2325-4217

### Notes

Views expressed in this editorial are those of the authors and not necessarily the views of the ACS.