

## TURI Grants

Each year, TURI provides grants to industry, small businesses, academic researchers, community organizations, and municipalities to support efforts to reduce the use of toxic chemicals. The annual cycle is based on TURI's fiscal year that runs from July through June. Typically, grant applications are available in April and decisions are made in August for the current fiscal year. **We encourage anyone interested in pursuing a grant to talk to us at any time.** We can help shape your idea and recommend partners to strengthen your application.

**Industry Grants** provide funding to qualified Massachusetts manufacturers to implement process modification or modernization opportunities for toxics use reduction.  
*Contact Joy Onasch, joy@turi.org or 978-934-4343.*

**Small Business Grants** provide funding to qualified small businesses in Massachusetts to change processes or replace toxic chemicals with safer alternatives.  
*Contact Joy Onasch, joy@turi.org or 978-934-4343.*

**Academic Research Grants** provide seed funding to UMass faculty and graduate students to conduct research intended to help Massachusetts companies develop solutions for some of the more challenging uses of toxic chemicals.  
*Contact Greg Morose, greg@turi.org or 978-934-2954.*

**Community Grants** are available for community organizations and municipal departments to create and promote healthier communities by raising awareness and educating people about safer alternatives to toxics.  
*Contact Felice Kincannon, felicek@turi.org or 978-934-3346.*

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### TURI Grant Projects – Fiscal Year 2018

#### Industry Grantees

**Kettle Cuisine of Lynn**, a hand crafter of small-batch, all-natural soups for restaurants, foodservice operators and grocery retailers, aims to reduce the use of sodium hydroxide used for cleaning. The company is working with the UMass Lowell Food Safety Lab to optimize current chemical usage and test alternatives.

**US Pack, Inc. of Leominster**, a leading contract manufacturer of custom liquid specialty products, is investing in capital equipment that will make cleanup more efficient and produce more precise production batches. The 10-head pressure gravity filler reduces the use of a variety of chemicals, including acetone, ethylene glycol and methanol used in manufacturing automotive, industrial and household cleaning products.

**OFS of Sturbridge**, a manufacturer of fiber optic solutions, is investigating ways to reduce their use of hydrogen fluoride (HF), a highly toxic chemical that is used for etching glass. The company is exploring closed-loop recycling processes and HF alternatives as ways to reduce handling and waste generation from the use of HF.

**Lytron of Woburn**, a designer and manufacturer of cooling systems and heat exchangers, is phasing out trichloroethylene (TCE) from their cleaning process. Research includes identifying a safer solvent for their new vacuum degreaser and an aqueous cleaner for copper parts. Alternatives are being tested in the TURI lab.

#### Small Business Grantees

**The Auto Collision Shop at Assabet Valley Technical High School of Marlboro** is purchasing new equipment and water-based gun-washing solution to reduce the use of hazardous solvents. The new water-based alternative is effective and less expensive. Instead of disposing of used solvent as hazardous waste, the school can now filter and reuse the water-based solution for many years. Students will benefit from a healthier work environment while learning about environmentally-friendly practices to take with them into their workplaces after they graduate.

**Walker's Gymnastics and Dance of Lowell** is purchasing new foam cubes that do not contain flame retardants for two landing pits used in the gym. While the landing pits provide safe cushioned landing spots as gymnasts train on the equipment, standard foam cubes contain hazardous flame retardant chemicals that can cause health effects such as endocrine disruption, which is of significant concern to young children.

**Beck's Printing of North Adams** purchased an embroidery machine in lieu of a screen printer requiring chemicals.

## Academic Research Grantees

**Professors Jayant Kumar of the Department of Physics and Ram Nagarajan of the Department of Plastics Engineering are partnering with Mexichem Specialty Compounds of Leominster**, the largest supplier of PVC-based cable and wire products in Massachusetts. The research team is developing safer alternatives to antimony trioxide, a widely-used flame retardant that is listed as a probable carcinogen by IARC. This research leverages UMass Lowell's expertise in safer flame retardants to reduce, and eventually eliminate, the use of toxic flame retardants in wire and cable product lines in Massachusetts.

**Assistant Professor Christopher Hansen of the Department of Mechanical Engineering** is partnering with Raytheon to identify and investigate replacements for methylene chloride used for coating removal. The research will include the evaluation of alternatives for the removal of chemical agent resistant coatings and conformal coating applications.

**Professor Ram Nagarajan of the Department of Plastics Engineering is partnering with Bradford Industries of Lowell** to find and evaluate safer solvent blends to replace the use of the toxic solvent dimethylformamide (DMF). Using the Hansen Solubility Parameters in Practice (HSPiP) software tool, Prof. Nagarajan is narrowing down possible alternatives to meet Bradford's performance requirements for its textile coating applications.

**Assistant Professor Hsi-Wu Wong of the Department of Chemical Engineering is partnering with Waters Corporation of Milford** to identify safer solvents used in liquid chromatography equipment that identifies and quantifies chemical compounds in complex mixtures. The final solvent formulations will replace the harmful solvents currently in use including methanol, acetonitrile and tetrahydrofuran.

## Community Grantees

**Silent Spring Institute of Newton** is partnering with the Massachusetts Breast Cancer Coalition to reduce high school students' exposures to common carcinogens and endocrine-disrupting chemicals. The project team is visiting 12 high school science classrooms to help students identify common toxic chemical exposures in their homes and adopt strategies that reduce these exposures. The team's approach includes a hands-on curriculum and Silent Spring's free mobile app "Detox Me" that guides users through more than 270 research-based recommendations for reducing exposures to common indoor pollutants. Students also participate in a peer-to-peer mentoring program that connects them to other youth who have participated in studies that measure chemical levels in the body and then took action to prevent toxic exposures.

**Town of Williamstown** residents approved a non-binding resolution in May 2017 declaring the town a pollinator-friendly community. The resolution seeks to change residential and institutional landscaping practices by promoting ways to reduce the use of pesticides and herbicides that scientists believe are harming bee populations. The project team is hosting training programs for landscape professionals and home owners, conducting tours of pollinator-friendly gardens and working with local partners on educational opportunities for adults and children, including a video made by middle-school children.

**The Field Fund, Inc. of Martha's Vineyard** is working to preserve and maintain Martha's Vineyard's playing fields using an organic, systems-based approach rather than installing synthetic fields. By not installing synthetic fields, the island community aims to preserve its natural landscapes, protect ponds, fragile habitats and single source aquifer, as well as protect young athletes from toxic exposures. To improve maintenance on natural grass playing fields, The Field Fund is purchasing an aerator. This is part of a larger effort to eliminate the use of synthetic fertilizers, pesticides and herbicides and develop an organic management plan for playing fields on Martha's Vineyard.

**Worcester Public Schools** is undertaking a significant new initiative to minimize the use of products containing asthmagens and hazardous chemicals in school buses and kitchens. The goal is to prevent transmission of pathogens, while maintaining a healthy environment for students and staff. The project team is converting school bus and kitchen sanitation practices and products to systems that are safer for human health and the environment. Working with manufacturers, the project team is piloting, evaluating, and providing training for safer cleaning and disinfection products, equipment and work practices for use on farm-to-table fresh produce and meats, kitchen surfaces and equipment and school buses.

