**TIC Gums and Cornell University Department of Food Science Present:**

**Ice Cream University**

**A Course for High School Students**

Ice Cream University is an opportunity for college-bound students with an interest in science or marketing to learn about the science of food. During the five week course, students will experience hands-on instruction from members of the Cornell University Department of Food Science, food scientists and food marketing professionals. The course is modeled after the Food Science 101 course taught to all first-year food science majors at Cornell University. Students will meet every Saturday for six weeks, beginning February 28, 2015, to develop and produce a unique ice cream while learning and applying food science principles.

Students will work in teams and at the end of the program, each team will present their ice cream to a panel of experts. Groups will then be judged on the quality of their ice cream and marketing proposal. Tentative judges include Cornell University’s Dr. Alicia Orta-Ramirez, Kate Dalham owner of Bloom’s Broom Dairy, representatives from the Harford County School District and food science professionals.

**Who will be involved?** Up to 20 Harford County Public School 11th grade students will be chosen to participate. Instructors will include Dr. Alicia Orta-Ramirez and affiliates from the Cornell University Food Science Department.

**Where will the ice cream course take place?** TIC Gums Texture Innovation Center at 10552 Philadelphia Road, White Marsh, MD 21162. Students are responsible for their transportation.

**Why should I register?** Students will get an inside look at the food industry straight from top-tier professionals and hands-on food science experience. Students will earn a certificate from Cornell University, receive a Cuisinart® ice cream maker and the winning team will have an opportunity to produce their ice cream on a small commercial scale.

**When will the program start and how long will it last?** Five Saturdays from February 28th through March 28th, 9 a.m. to 12 noon.

**What costs are involved?** There is no cost to students. TIC Gums provides full scholarships for the $500 program fee. Enrollment is capped at 20 students.

**How do I register?** In order to be considered for this program, students must:

* Complete an application at [www.ticgums.com/icecreamuniversity](http://www.ticgums.com/icecreamuniversity)
* Email report card from 1st quarter 2014 to [icecreamuniversity@ticgums.com](mailto:icecreamuniversity@ticgums.com)

**What qualifications do I need?**

* Have taken or are taking Algebra II
* Have successfully passed the HSA for English, biology, and chemistry
* Have taken or are taking Chemistry I
* Have at least a 3.0 GPA
* Be on track to graduate
* Can provide their own transportation to TIC Gums in White Marsh
* Commit to attending all 6 sessions. Students must attend all sessions to receive the certificate at the completion of the course. There will be no make-up sessions.

0552 Philadelphia Road | White Marsh, MD 21162 USA

**Overview of Topics Covered**

**The Basics**

Students will be led through a ‘focus group’ requested by a Food Company that wishes to enter into the ice cream market. The discussion will lead students from conception to execution of product development. The basics of ice cream production will be introduced and demonstrated with a Cuisinart® ice cream machine.

**Flavors, Inclusions & Variegates**

Students will be introduced to sensory science and explore the impact of texture, flavor and other sensory inputs on the ice cream eating experience. During the lab portion, students will work with concentrated flavors and design their ice cream’s base flavor. Students will build upon their flavor base by adding inclusions and variegates to their recipes.

**Ice Cream Production**

Students will perform formulation calculations and learn about common challenges associated with ice cream production. Each group’s formulation will be analyzed and suggestions will be made for improvement.

**Marketing**

Students will receive direction on how the food industry positions products to appeal to market demand. Instruction will cover the 4 P’s of marketing: price, place, promotion and product.

**Judging**

Each team will present a theoretical marketing plan and taste test to the panel of judges. Teams will be judged on presentation and the finished ice cream.

**Background**

**Why is this course important?** The world needs more food scientists. The population is increasing and by some estimates the world’s food supply must double by 2050 (less than 40 years from now) to accommodate this growth. This course introduces students to a future career path that is commonly misunderstood or unknown.

Graduates with a food science background are able to work in various facets within the food industry. Some examples include engineering, microbiology, food product development, process engineering, research in nutrition and raw material utilization.

**Is this the first time for this course?** 2015 marks the 3rd local installment of this program.

**Video Resources**

* WBAL Coverage from 2014 Ice Cream University

<http://www.wbaltv.com/news/program-lets-students-create-ice-cream-flavor/25392232>

* TIC Gums & Cornell University bring food science workshop to teachers
  + <http://www.youtube.com/watch?v=6NaYiePL72g>
* Does this have gum in it? Ice cream edition
  + <http://www.youtube.com/watch?v=N5v5Rj481CU>
* Nuts about Chocolate wins student ice cream contest (example of judging from Cornell)
  + <http://www.youtube.com/watch?v=iHSrydExxBg>