

Company: **Ingredion -- Summer Internship Opportunity**
Job Title: Microscopy Image Analysis Intern - **Summer 2017**
Position Location: Bridgewater, NJ
Business Unit: Global Innovation Group/Systems Design & Measurement

Primary Function: The Intern will aid our ingredient screening strategies by extracting quantitative image data from food microstructures and relating it to important product functionality. The purpose of the role is to create automated detection and quantification of food ingredients. The intern has the potential to develop powerful tools that guide understanding of food structure in order to enable the design of robust food formulations, thereby helping researchers in our organization and food manufacturing customers.

Key Deliverables

- Refine and implement algorithms for detection, characterization, and quantification of particles, assessing size and shape; classifying objects morphologically within images and image ensembles of food ingredients
- Prototype image analysis solutions using MATLAB, Image Pro Plus, C/C++ or by employing software (Fiji/ImageJ, Matlab, Imagepro, Icy, etc.), and testing the solutions and validating research prototypes that achieve problem objectives
- Set up and maintain image databases, batch processing of images, documenting analysis procedures, and statistical evaluation of images and data
- Design evaluation criteria and automated methodology to test, validate, and refine your algorithms
- Quantify resource value of automated image analysis
- Effectively demonstrate results by preparing written reports and making presentations describing analyses performed, solutions developed, and value obtained
- Collaborate and work well with others in laboratory
- Communicate with customers (technical and business stakeholders) to understand new ways for software algorithms to improve system performance

Knowledge, Skills, and Requirements:

- Progress towards a Bachelor's degree or Master's degree in Food Science, Biotechnology, Materials science, Chemical Engineering or a related field.
- Minimum 3.0/4.0 GPA required.
- Availability to work full time (40 hours/week) between early June and mid August 2017.
- Knowledge with image attributes such as particle size distribution, shape/perimeter, degree of aggregation and background solute concentration.
- Hands on experience with liquid handling equipment, high content imaging, Image collection (i.e. using microscopes), and image analysis (Fiji/ImageJ, Matlab, Imagepro, Icy, etc.) is beneficial.
- Excellent interpersonal, verbal and written technical communication skills, e.g. making presentations and writing technical data/reports.
- Proficiency in Microsoft Office (Word, Excel, PowerPoint).

To be eligible for consideration, candidates must:

- Be a currently enrolled student a Bachelor's or Master's degree program. If currently enrolled in an undergrad status, must have completed at least two years of coursework with status as a sophomore, junior or non-graduating senior.
- If you have completed your degree, please consider other opportunities with Ingredion, posted at www.ingredion.com/careers.

Relocation: None. Housing/housing allowance is not provided.

How to Apply: Please visit Ingredion's Intern Career Page at <http://ingredionusa.jobs/internship/new-jobs/>