



## **2018 International Metallographic Contest Winners**

### **George L. Kehl Award**

Optimization of Self-Resistance Upset Welding of Molybdenum-LCAC

**Nicholas Francis Kilbane**

University of Dayton

Dayton, OH

### **Class 1 - Light Microscopy – All Materials**

#### **Honorable Mention**

The Unfired and Fired

Arif Hariyadi and Anggun Puspita Asri

PT Pembangunan Jawa Bali-UPHT

Gresik, Jawa Timur

Indonesia

#### **Honorable Mention**

Failure Investigation of a Shattered Molybdenum Sheathed Thermocouple

Victoria R. Narby

Rhenium Alloys, Inc.

Lakewood, OH

### **Class 2 – Electron Microscopy, All Materials**

#### **First Place**

Nano-Copper Decorated Graphene - Cementation Process

Archana Loganathan, Luiza Fontoura, Benjamin Boesl, and Arvind Agarwal

Florida International University

Miami, FL

#### **Second Place**

Fractography of Ductility-Dip Cracking in Nickel-Based Alloy 52M

Samuel J. Luther and Boian T. Alexandrov

The Ohio State University

Columbus, OH

### **Class 3 – Student Entries – All Materials (Undergraduate Students Only)**

#### **First Place and the George L. Kehl Award**

Optimization of Self-Resistance Upset Welding of Molybdenum-LCAC  
Nicholas Francis Kilbane  
University of Dayton  
Dayton, OH

#### **Second Place**

Using Microscopy to Characterize Chromium Carbide Overlays for Hardfacing  
Thomas Munn  
Iowa State University  
Ames, IA

#### **Honorable Mention**

Pump up the 'Betes': Analysis of Insulin Pump Activation Spring  
Phacharapol Tanasarnsopaporn and Emma Isaacs  
Lehigh University  
Bethlehem, PA

### **Class 4 – Artistic Microscopy – Color**

#### **First Place**

Deeply Etched Graphite Yellowstone  
Amir Ardalan Rezaie and Reza Abbaschian  
University of California  
Riverside, CA

#### **Second Place**

Blue Martensite  
Juan Carlos Hernando  
Jönköping University  
Jönköping, Sweden

#### **Third Place**

Bismuth Microstructure  
Lukasz Boron  
Foundry Research Institute  
Krakow, Poland

**Honorable Mention**

Characterization of Tectonic Plates

Yung Suk Jeremy Yoo, Saryu J. Fensin, G.T. (Rusty) Gray III, John S. Carpenter

Michael J. Brand and Robin M. Pacheco

Georgia Institute of Technology

Atlanta, GA

Los Alamos National Laboratory

Los Alamos, NM

**Honorable Mention**

5160 Alloy Steel

Johnathon Brehm

University of Wisconsin

Madison, WI

**Honorable Mention**

Last Nodule Standing

Juan Carlos Hernando

Jönköping University

Jönköping, Sweden

**Class 5 – Artistic Microscopy – Black and White****First Place**

Death Star

Mauricio Mendes Costa

Centro Tecnológico da Marinha

São Paulo, Brazil

**Second Place**

First MAB Phase on the Moon

Amir Ardalan Rezaie, J.P Scheifers and Boniface P.T Fokwa

University of California

Riverside, CA

**Third Place**

Porosity Exploration

Juan Carlos Hernando

Jönköping University

Jönköping, Sweden

**Honorable Mention**

Rusty Bits of Low Carbon Steel

Sheri Neva

EAG-Los Angeles

El Segundo, CA

**Honorable Mention**

Wrought Iron from The Milwaukee Road Railroad  
Johnathon Brehm  
University of Wisconsin  
Madison, WI

**Honorable Mention**

A Land of Death  
Samuel J. Luther and Boian T. Alexandrov  
The Ohio State University  
Columbus, OH

**Honorable Mention**

Fracture Surface of 316L Tensile Specimen Produced by Additive Manufacturing  
Tiago Carvalho Leça  
University of Porto  
Porto, Portugal