



A Special Event at the TMS 2017 Annual Meeting & Exhibition

Get Fired Up About the 2017 TMS Bladesmithing Competition!

The TMS Bladesmithing Competition returns to TMS2017 to spark the imagination and sharpen engineering and scientific skills. Open to university teams from around the world, this competition challenges competitors to produce a knife or sword blade formed by hand hammering or trip hammer forging.

Congratulations to the following teams for qualifying as contestants in the 2017 TMS Bladesmithing Competition. Teams are listed in alphabetical order by university.

View all the team videos at www.tms.org/BladesmithingVideos.

2017 TMS Bladesmithing Rules

- Produce a knife or sword blade 20–120 cm long (including handle).
 - Each team is limited to one blade.
 - Blades must be formed extensively by hand hammering/trip hammering or forge pressing.
 - Blades must not be sharpened (minimum edge radius = 0.5 mm).
 - There is no restriction on the starting material for the blades. Teams may use: purchased stock material; material that is alloyed, laminated, or otherwise processed by the team; or material smelted from ore.
- Entries must include:
 - Video: Maximum of 5 minutes
 - Technical Report: Maximum of 10 pages (double spaced)
 - Poster: 24" x 36"

Please Note: This poster size must be adhered to or your poster cannot be displayed.

Poster file size should not exceed 48" in either direction (horizontal or vertically). A minimum of 150 ppi (pixels per inch) is required, but should not exceed 300 ppi. Please do not submit original files. Only the following file formats will be accepted for inclusion in the poster portion of the competition: JPEG, TIFF, PDF.

- The 2017 TMS Bladesmithing Competition is open to university teams only:
 - Teams may also include up to one (1) non-student artisan and two (2) advanced-placement high school students. **At least half of the team membership must be university students.**
 - Recent engineering graduates who received their degree following the TMS 2015 Annual Meeting will be considered students for this year's contest.

Please Note: Multiple bladesmithing entries by the same person/group will only be accepted as space is available.

- Each team is required to obtain written acknowledgement from their faculty department chair in order to participate in the competition. A [sample acknowledgement](#) is provided for your convenience. (**Signed acknowledgement due to lberinger@tms.org by 11/1/2016**).
- All participants should carefully investigate and act in compliance with all local laws and any pertinent institutional rules and regulations regarding the handling of items fabricated for or entered into the competition.
- Best practices for laboratory safety and safe blade handling are required. Evidence of this is an essential component of the judging criteria.

[A Message to Department Chairs](#)

Metalworking Safety

Safety is the number one priority for all teams entering the 2017 TMS Bladesmithing Competition. Students must apply safe practices at all times and failure to properly address safety concerns will result in automatic disqualification. All teams are required to coordinate with a faculty advisor and appropriate campus safety personnel to discuss safety procedures, identify potential hazards, and complete safety training prior to participating in the competition. All students must complete any required safety training at their home institutions before using specialized equipment and facilities. It is also recommended that all students review the following important safety links as a starting point before entering the laboratory/shop environment.

- [Blacksmithing Safety \(California Blacksmith Association\)](#)
- [Arc Welding Safety Guide \(Lincoln Electric\)](#)
- [Foundry Society PPE for Foundry \(American Foundry Society\)](#)
- [Machine Shop Safety \(from Machinist.org\)](#)

Mandatory Blade Check-In

Students will be required to attend a blade check-in on Monday February 27, 2017 from 10 a.m. to 11 a.m. for their blade and poster to be included in the display. The exact location for the check-in will be posted on this website and communicated in an e-mail to the registered teams.

- Teams must submit the name and contact information for the member who will check in the blade to [Laura Beringer](#) no later than February 1, 2017.
- Teams must check out their blades at 2 p.m. on Wednesday, March 1, when the TMS2017 Exhibition closes.

Once a blade is checked in, the following rules will apply:

- Display cases will be locked once the blades are placed in them. This means your blade will be secure during the three days of the TMS2017 Exhibition.
- Dedicated security will be present at the Bladesmithing display area overnight.

Judging Rubrics

The following rubrics present the scoring criteria for each required element of the 2017 TMS Bladesmithing Competition.

[Report \(Maximum Length: 10 pages\): 40%](#)

PRIZES

Prizes may be split among team members or used to support future projects.

- **TMS Wadsworth-Sherby Bladesmithing Grand Prize:** \$2,000
- **2nd place:** \$500
- **3rd place:** \$250
- **Honorable mention(s) :** \$100

2017 TMS Bladesmithing Competition Teams

"A Rapier Eclectic"

California Polytechnic State University, San Luis Obispo

"Fabrication of a Flabe-Bladed Longsword"

Carnegie Mellon University

"Forging a 10th Century Viking Battle Axe"

Carnegie Mellon University

"A Closer Shave: Forging a Damascus Steel Straight Razor"

Colorado School of Mines

"The Iron Dragons"

Drexel University

"Stylish Superior Sabaraage via Severe Plastic Deformation"

Illinois Institute of Technology

"Das Kleinmesser"

Iowa State University

"Towards Understanding Formation in Wootz Damascus Blades"

Massachusetts Institute of Technology

"Tanto Inspired Bowie Knife and Coal Powdered Furnace"

McMaster University

"New Mexico Tech Bladesmithing Team 'Last Heat'"

New Mexico Institute of Mining and Technology

"Dragonslayer: A Modern Myth"

Northwestern University

"Reproduction of the T19391 Sword from the Late Norwegian Iron Age"

Norwegian University of Science and Technology

"Oregon State University Bladesmithing Competition Broken Back Seax"

Oregon State University

"Keris: The Mighty Sword From Indonesia"

Sepuluh Nopember Institute of Technology

"South Dakota School of Mines and Technology Bladesmithing Team"

South Dakota School of Mines and Technology

"Traditional Kukri 5160 Differentially Heat-Treated Blade"

United States Air Force Academy (USAF)

"Fabrication of an Elven Shortsword"

University of Alberta

"Throwing Knife Design, Development, and Results"

University of Alberta

"The Production and Analysis of the Blade Californium"

University of California, Berkeley

"Pattern-Welded Damascus Steel Recurve Bowie Knife"

University of Florida

"Forging a Multi-Layered Seax"

University of Kentucky

"Austempering a Pattern Welded Knife"

University of Michigan

"Clip-Point Chopper from Recycled Steel"

University of North Texas

"Identifying Variations in Physical Characteristics of a 5160 Steel Blade Forged by Hammer and Anvil"

University of Texas at El Paso

"Pattern Welding a Moro-Filipino Short Sword"

University of Utah

"Meteoric Iron Han Dynasty Dao"

Virginia Polytechnic Institute and University