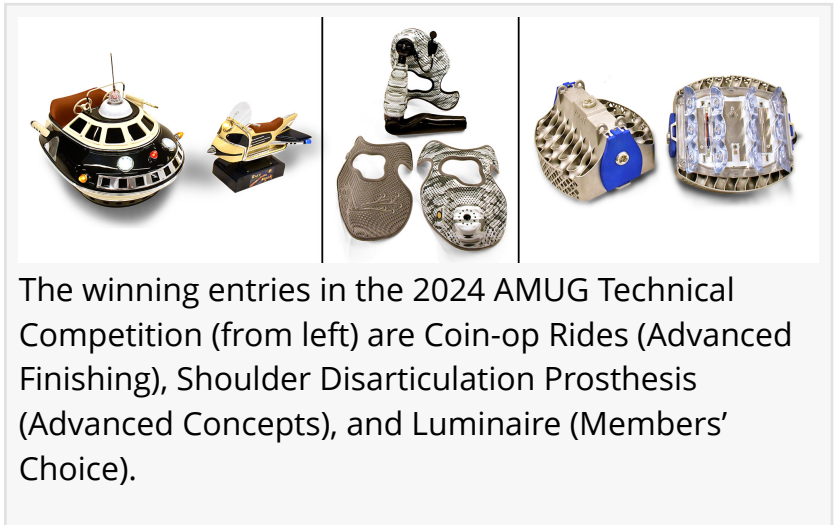


Additive Manufacturing Users Group Names Technical Competition Winners

Chris Baschuk (Point Designs LLC), Mike Littrell (BuildParts by CIDEAS, Inc.), and Sam Mills (Eaton) take top spots in the annual competition.

ZEELAND, MICHIGAN, USA, April 2, 2024 /EINPresswire.com/ -- The Additive Manufacturing Users Group (AMUG) today announced the winners of its annual Technical Competition, which recognizes excellence in additive manufacturing applications and finishing techniques. A panel of industry veterans selected entries from Point Designs LLC and BuildParts by CIDEAS, Inc. as Advanced Concepts and Advanced Finishing winners. AMUG Members selected the entry by Eaton for the Members' Choice Award.



The winning entries in the 2024 AMUG Technical Competition (from left) are Coin-op Rides (Advanced Finishing), Shoulder Disarticulation Prosthesis (Advanced Concepts), and Luminaire (Members' Choice).

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The Technical Competition took place at the annual AMUG Conference in Chicago, Illinois. Bonnie Meyer, Chair of the Technical Competition Committee, said, "This event showcases the innovations, craftsmanship, and dedication to driving advances in additive manufacturing. The participants range from individuals to team collaborations, but every entry demonstrates ingenuity and highlights projects that are only made possible with the use of

additive manufacturing technologies."

Nine judges scrutinized every detail of the competition entries to select Advanced Finishing and Advanced Concepts winners.

Chris Baschuk, Director of Clinical Services at Point Design LLC, submitted the winning entry in the Advanced Concepts category, "Lightweight Revolution: Ventilated Multi-material Shoulder Disarticulation Prosthesis." Manufactured with HP's Multi Jet Fusion, in rigid PA 12 and flexible TPU, the patient-specific device balances functionality with user comfort by leveraging the

distinctive capabilities of additive manufacturing.

Baschuk noted that the prosthesis reduces bulkiness, weight, and fabrication complexity associated with conventional approaches. Additionally, advanced design features, such as hexagonal lattices for breathability, heat dissipation, and electronics integration, improve the patient's experience.

"This project epitomizes the potential of additive manufacturing in prosthetic development, offering a highly personalized, functional, and comfortable solution for individuals with shoulder disarticulation amputations, setting a new standard in the field," said Baschuk.

The judges said, "Using additive manufacturing for prosthetics is not new, but the methodology and attention to detail used in this entry are incredible. The forethought to incorporate lightweighting and DFAM to provide users comfort is impressive. The embedded electronics for movement were astounding and would improve the user's quality of life. This is a great additive manufacturing application to improve the human condition and an outstanding entry!"

Mike Littrell, President of BuildParts by CIDEAS, Inc. and a previous Technical Competition winner, once again took the top spot in the Advanced Finishing category. His entry, titled "Coin-Operated Rides," displayed visually stunning scale replicas that pay tribute—in style, materials, colors, and functionality—to a carefree, bygone era of entertainment and culture.

The scale models included a "Race to the Moon" rocket scooter and a futuristic spacecraft from a 1950s point of view. Littrell noted that each model contained 99 percent printed parts and that three additive manufacturing technologies were used: DLP (Digital Light Projection), FDM (Fused Deposition Modeling) and SLA (Stereolithography). To educate AMUG Members, Littrell displayed the scale models in three states: fully finished, sanded/primed, and as-printed.

Outfitted with lights, clear lenses, and a clear windscreen for the rocket scooter, the scale models were brought to life with 2K automotive-grade paint for a durable, long-lasting finish.

In the assessments by the judges, one stated, "Utilizing the right additive manufacturing technology for each part makes this a success. Many years of expertise showed in the quality of this submission. It's also a real-world example of finishing techniques."



Chris Baschuk of Eaton, with Bonnie Meyer, accepting the award for his first-place finish in the Advanced Concepts category of AMUG's 2024 Technical Competition.

Through voting by AMUG's Members, Eaton received the Members' Choice award. Meyer commented, "Unlike Advanced Concepts and Advanced Finishing, the Members' Choice award has no defined evaluation criteria. It is open to personal and subjective impressions. This year, the members and judges had different perspectives."

Sam Mills, Engineering Specialist for Eaton, submitted "Fully AM Luminaire," a project by the Eaton team that included additive manufacturing and material science experts. In his entry, Mills cited team members John Hana (Senior Engineer), Mansura Islam (Senior Additive Engineer), Sabina Kumar (Lead Engineer), Riyanka Ribble (Engineering Specialist) and Chris Ring (Lighting Expert and Manager).

Mills said, "The luminaire platform is the only known custom solution that leverages multiple additive manufacturing technologies, making it a pioneering solution in the lighting field." He continued, "It demonstrated the value of AM [additive manufacturing] to manufacture the entire lighting solution." The results are impressive, and the best-in-class efficiency of 150 lumens/Watt is a testament to the quality of the overall product.

The luminaire, which was entered in the Advanced Concepts category, contains additively manufactured parts for 90 percent of the components. Employing design for additive manufacturing (DFAM) techniques, the luminaire achieves Department of Energy (DOE) manufacturing goals for reshoring, SKU reduction, and efficiency. Mills stated, "By using DFAM tools for part integration, we cut the assembly time in half and virtually eliminate the need for product-specific tooling."

The judges' comments on Mill's entry noted that the solution is not cost-effective, but the AMUG Members chose to focus on the innovations and sophistication in applying additive manufacturing and DFAM. Judges said, "Excellent use of AM technologies, DFAM, and lightweighting with engineering to achieve energy efficiency and ease of installation. It isn't cost-effective, but the government contract was focused on other factors. I think the goal was achieved."

For Advanced Finishing, Ed Graham of Prototek took second place for "The Pumpkin King." Third place was awarded to Olaf Diegel of the University of Auckland for "Darth Vader Reborn."



Mike Littrell of BuildParts by CIDEAS, Inc. receiving the first-place award from Bonnie Meyer for the Advanced Finishing category of AMUG's 2024 Technical Competition.

In Advanced Concepts, second place was awarded to Rick Pressley of Renaissance Services, Inc. for "Cooled Integrally Vaned Stator with 'Cast-In Cooling Holes.'" Sam Mills, the Members' Choice award winner, took third place in the Advanced Concepts category.

Meyer said, "Each year, the Technical Competition entries are more impressive and of higher quality than before, and this year was no exception."

ABOUT ADDITIVE MANUFACTURING USERS GROUP (AMUG)

The Additive Manufacturing Users Group (AMUG), a 501(c)(6) nonprofit corporation, is a catalyst for its community of members to drive additive manufacturing forward. We are committed to educating and advancing AM applications for industrial purposes. Our annual gatherings provide a platform for in-depth technical presentations, workshops, and hands-on experiences, focusing on processes, technologies, and real-world applications. Join us at www.amug.com to be part of the innovation shaping the future of manufacturing.

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