The AWS Awards Recognition Ceremony of the American Welding Society serves an important function. It recognizes the men and women in the industrial, education, and research communities who have made distinctive contributions to advance the science, technology, and application of welding and allied processes, including joining, brazing, soldering, cutting and thermal spraying. This booklet describes the various awards, listing recipients for the past twenty-five years along with a brief biography of this year’s recipients. A complete listing of awards and their recipients may be obtained from the AWS website at aws.org.
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## AWS NATIONAL AWARDS 2022

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</tr>
<tr>
<td>2021 PAPER</td>
<td>JAMES F. LINCOLN GOLD MEDAL AWARD</td>
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<td>2021 PAPER</td>
<td>MCKAY-HELM AWARD</td>
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<td>WARREN F. SAVAGE MEMORIAL AWARD</td>
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<tr>
<td>2021 PAPER</td>
<td>WILLIAM SPRARAGEN MEMORIAL AWARD</td>
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</table>
AWS NATIONAL AWARD WINNERS

COMFORT A. ADAMS LECTURE AWARD

The American Welding Society sponsors this lectureship, which was created in memory of Dr. Comfort A. Adams, its founder and first President.

The award is presented to an outstanding scientist or engineer for a lecture describing a new or distinctive development in the field of welding. The lecture is presented during the AWS Welding Show and Convention.

*Recipient of award:*

Key, J. F. (1990)  
Eagar, T. W. (1992)  
Gooch, T. G. (1995)  
Kotecki, D. J. (1996)  
Evans, G. M. (2001)  
Cieslak, M. J. (2002)  
Liu, S. (2008)  
Grong, O. (2011)  
DuPont, J. N. (2013)  
Goldak, J. (2014)  
Robino, C. V. (2015)  
Vianco, P.T. (2016)  
Nishimoto, K. (2018)  
Dong, P. (2019)  
No presentation (2020)  
Cross, C. E. (2021)

"UNDERSTANDING AND CONTROL OF WELD MICROSTRUCTURE AND JOINT INTERFACE OF STEELS AND DISSIMILAR METALS"

PROFESSOR TOSHIHIKO KOSEKI earned his Bachelor and Master of Engineering in Metallurgy from The University of Tokyo in 1981 and 1983, respectively, and Doctor of Science (Sc.D) in Materials Engineering from MIT in 1994. He joined the R&D lab at Nippon Steel Corporation in 1983 and worked on a variety of projects on high-strength steels, stainless steels, and their welding until 2002. Professor Koseki joined the Department of Materials Engineering of The University of Tokyo in 2003 and served as a professor of Physical Metallurgy until 2019, with primary research interest in microstructure development in steels and their welds and between dissimilar metals. During that time, he served as Department Head, Vice Dean of School of Engineering, and as Vice President of the university for research from 2014 to 2019. He joined Nidec Corporation, the world largest motor manufacturing company, in 2019, serving as a First Vice President and CTO of the company, concurrently serving as Vice President of Kyoto University of Advanced Science. Professor Koseki has been an author or co-author of more than 150 refereed papers and has 50 patents. He is also a Fellow of ASM, AWS, and JWS (Japan Welding Society).
ADAMS MEMORIAL MEMBERSHIP AWARD

This award is sponsored by the American Welding Society and recognizes educators for outstanding teaching activities in their undergraduate and postgraduate engineering institutions.

Recipients of award:


DR. JOEL ANDERSSON is Professor of Materials Science and Director of Production Technology at University West (UW), Sweden. He received his Ph.D. from Chalmers University of Technology (CUT) in 2011. From 2011 to 2016, he worked at GKN Aerospace as research leader and materials specialist and as a senior researcher at CUT and UW. In 2016, he became associate professor and Head of Division of Welding Technology at UW, where many national and international awards were received by Ph.D. students, researchers, and professors. Dr. Andersson acquired many top-notch pieces of equipment such as a high-resolution microscope, Gleeble system, Varestraint Weldability testing system, fatigue machine, advanced welding and deposition equipment, and many other pieces of equipment, which are used by academia and industry to promote welding and additive manufacturing. Dr. Andersson has supervised 8 Ph.D. students and is currently supervising 8 more in the field of welding and additive manufacturing. In addition, Dr. Andersson has supervised numerous undergrad and grad students as well as being a teacher, course responsible, and examiner for many different courses in relation to welding and material science on all levels. In 2021, Dr. Andersson was promoted to full Professor of Material Science and became the Director of Production Technology at UW at the age of 40.
AWS NATIONAL AWARD WINNERS

HOWARD E. ADKINS MEMORIAL INSTRUCTOR MEMBERSHIP AWARD

This award is sponsored by the Adkins family and recognizes instructors for their outstanding teaching accomplishments at the high school, trade school, technical institute, and community college levels.

Recipients of award:


RANDY EMERY’S welding education started at College of the Sequoias where he is now the lead Welding Educator and Division Chairman. After completing the COS Welding program, he worked in the local Manufacturing and Construction industry for approximately five years as a Metal Fabricator and Pipe Fitter. These experiences lead him to the United Association of Plumbers and Pipe Fitters apprenticeship program. During his Apprenticeship with the UA, he was hired by College of the Sequoias to become an Adjunct Welding Educator. This opportunity allowed him to bring the industrial and educational worlds together. Mr. Emery maintained this dual career for approximately twenty-two years until he was hired as a full-time Welding Educator. This extensive experience in both industry and education has help him develop into a highly effective professional tradesman and educator. To complement his work and educational experiences, he has been an active AWS member for thirty-four years. This membership has allowed him to become the AWS Central Valley Section chairman, incoming District 22 Director and an AWS, CWI and CWE.
AWS NATIONAL AWARD WINNERS

KENNETH L. BROWN MEMORIAL SAFETY AND HEALTH AWARD

This award is sponsored by the American Welding Society to recognize individuals for promoting welding safety and health through research, educational activities, development of safe practices, or dissemination of information through publications or other means, thereby fostering public safety awareness and welfare.

Recipients of award:

<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>Spies, G. R.</td>
</tr>
<tr>
<td>1993</td>
<td>Fisher, O. J.</td>
</tr>
<tr>
<td>1994</td>
<td>McMillan, G. H. G.</td>
</tr>
<tr>
<td>1995</td>
<td>Lesnewich, A.</td>
</tr>
<tr>
<td>1996</td>
<td>Manz, A. F.</td>
</tr>
<tr>
<td>1997</td>
<td>Sliney, D. H.</td>
</tr>
<tr>
<td>1998</td>
<td>Hinrichs, J. F.</td>
</tr>
<tr>
<td>2000</td>
<td>Brown, K. L.</td>
</tr>
<tr>
<td>2001</td>
<td>Rockwell, Jr., R. J.</td>
</tr>
<tr>
<td>2002</td>
<td>Lyttle, K. A.</td>
</tr>
<tr>
<td>2004</td>
<td>DeLong, W. T.</td>
</tr>
<tr>
<td>2005</td>
<td>Castner, H. R.</td>
</tr>
<tr>
<td>2006</td>
<td>Antonini, J.</td>
</tr>
<tr>
<td>2007</td>
<td>No presentation</td>
</tr>
<tr>
<td>2008</td>
<td>Fiore, S. R.</td>
</tr>
<tr>
<td>2009</td>
<td>No presentation</td>
</tr>
<tr>
<td>2010</td>
<td>No presentation</td>
</tr>
<tr>
<td>2011</td>
<td>Palmer, W.</td>
</tr>
<tr>
<td>2012</td>
<td>Fink, D. A.</td>
</tr>
<tr>
<td>2013</td>
<td>No presentation</td>
</tr>
<tr>
<td>2014</td>
<td>Costa, L.</td>
</tr>
<tr>
<td>2015</td>
<td>No presentation</td>
</tr>
<tr>
<td>2016</td>
<td>No presentation</td>
</tr>
<tr>
<td>2017</td>
<td>No presentation</td>
</tr>
<tr>
<td>2018</td>
<td>Clark, D.</td>
</tr>
<tr>
<td>2019</td>
<td>No presentation</td>
</tr>
<tr>
<td>2020</td>
<td>No presentation</td>
</tr>
<tr>
<td>2021</td>
<td>No presentation</td>
</tr>
</tbody>
</table>

JOHN S. PETKOVSEK received his B.S. degree in Chemical Engineering in 1980 from Case Western Reserve University and his M.S. in Chemical Engineering in 1985 from Cleveland State University. He has worked for the Lincoln Electric Company for the last 42 years, retiring in June 2022. During his career he worked in several roles including Plant Engineering, Manufacturing and Environment, Health & Safety. Although he has always promoted safe work practices and the reduction in hazardous substances in his company’s manufacturing processes and products, it was during the last 22 years that he focused his attention on this mission. In 2000, Mr. Petkovsek was asked to develop Lincoln Electric's global EHS function. A primary focus has been to research fume composition and fume generation rates, safe electrical work practices, educate welders and employers regarding safe work practices, understand safety data sheets and safe use guides; develop papers, provide presentations, and support research to understand and reduce exposure and continue to make welding a safe industry. In that capacity, he has had the privilege to work with the AWS Safety and Health committee and IIW Commission VIII, which promote global health and safety in the welding industry. Mr. Petkovsek’s goal has always been to promote safe practices in the welding industry and advance knowledge regarding welding procedures in order to reduce risk and educate welders everywhere.
AWS NATIONAL AWARD WINNERS

ROBERT J. CONKLING MEMORIAL AWARD

This award is named in memory of Robert J. Conkling. He encouraged young people to enter the welding industry and contributed generously of his time and talents to the development of the AWS Welding Show and Convention.

This award is sponsored by the American Welding Society and is presented to the schools that trained the two first-place winners in the national SkillsUSA welding competition.

2022 SkillsUSA Championships Gold Medalists Schools

First Place — High School
Venango Technology Center
Oil City, PA

First Place — Post Secondary
Penn College of Technology
Williamsport, PA
2021 PAPER | A. F. DAVIS SILVER MEDAL AWARD

This award is endowed by the late A. F. Davis, former Vice President and Secretary of The Lincoln Electric Company.

It is awarded to the authors of papers published in the Welding Journal during the previous calendar year that represent the best contributions to the progress of welding in the categories of 1) Machine Design, 2) Maintenance and Surfacing, and 3) Structural Design.

NOTE: Code number after each name designates category in which award was won:
(1) Machine Design
(2) Maintenance and Surfacing
(3) Structure Design

Recipients of award:

Stol, I. (1) (1990)
McCough, M. (2) (1990)
Denys, R. M. (3) (1990)
Chen, S-J (2) (1991)
Devletian, J. H. (2) (1991)
Oh, Y. K. (2) (1991)
Leggatt, R. H. (2) (1992)
Gittos, M. (2) (1993)
Gooch, T. G. (2) (1993)
Wang, P. C. (3) (1993)
Einerson, C. J. (1) (1994)
Miller, E. G. (3) (1994)
Nagel, G. (3) (1994)
Rybicki, E. F. (3) (1994)
Stonesifer, R. B. (3) (1994)
Richardson, I. M. (1) (1995)
Wiegand, R. C. (2) (1995)
Kotecki, D. J. (2) (1996)
Ogborn, J. S. (2) (1996)
Newton, C. J. (1) (1997)
Graham, M. (3) (1997)
Weckman, D. C. (3) (1997)
Li, P. (1) (1998)
Hong, J. H. (2) (1998)
Tsai, C. L. (2) (1998)
Yao, P. (2) (1998)
Barber, J. R. (3) (1998)
Fang, C-K (3) (1998)
Kannatey-Asibu, Jr., E. (3) (1998)
Feng, Z. (2) (1999)
Jirinec, M. J. (2) (1999)
Keiser, J. R. (2) (1999)
Tsai, C. L. (3) (1999)
Tsai, M. J. (3) (1999)
Quinn, T. P. (1) (2000)
Weaver, M. A. (3) (2000)
Li, P. (1) (2001)
Zhang, Y. (1) (2001)
Balmforth, M. C. (2) (2001)
Lippold, J. C. (2) (2001)
Dupont, J. N. (3) (2001)
Marder, A. R. (3) (2001)
Nawrocki, J. G. (3) (2001)
Robino, C. V. (3) (2001)
Marder, A. R. (2) (2002)
Kim, W. S. (3) (2004)
Bruce, W. A. (2) (2005)
Beckett A. S. (2) (2005)
DuPont, J. N. (3) (2005)
Marder, A. R. (3) (2005)
Na, S-J (1) (2006)
Darcis, P. (3) (2006)
Recho, N. (3) (2006)
AWS NATIONAL AWARD WINNERS

2021 PAPER | A. F. DAVIS SILVER MEDAL AWARD (cont)

Brasher, D. G. (2) (2007)  
Butler, D. J. (2) (2007)  
Riddle, R. (2) (2007)  
Tsai, C. L. (3) (2007)  
Kim, C-Y (3) (2007)  
Garnett, M. D. (3) (2007)  
Mustaleski, Jr., T. M. (1) (2008)  
Tosten, M. H. (2) (2008)  
West, S. L. (2) (2008)  
Kanne, Jr., W. R. (2) (2008)  
Siewert, T. A. (3) (2008)  
Li, K. (1) (2009)  
Zhang, Y-M (1) (2009)  
Malin, V. (2) (2009)  
Sciammarella, F. (2) (2009)  
Huang, Y. (1) (2011)  
Zhang, Y. (1) (2011)  
Pargeter, R. J. (2) (2011)  
Wright, M. D. (2) (2011)  
Korinko, P. S. (2) (2012)  
Adams, T. M. (2) (2012)  
Maiene, S. H. (2) (2012)  
Smugeresky, J. (2) (2012)  
Fan, Y. (1) (2013)  
Yang, C. (1) (2013)  
Zhou, Y. (2) (2013)  
Yang, Y. L. (2) (2013)  
Li, D. (2) (2013)  
Yang, J. (2) (2013)  
Jiang, Y. W. (2) (2013)  
Ren, X. J. (2) (2013)  
Yang, Q. X. (2) (2013)  
Radakovic, D. J. (3) (2013)  
Tumuluru, M. (3) (2013)  
Xiao, J. (1) (2014)  
Zhang, G. (1) (2014)  
Wu, L. (1) (2014)  
Zhang, Y. (1) (2014)  
Aschemeyer, U. (2) (2014)  
Peters, K. (2) (2014)  
Zhang, Y (1) (2015)  
Shao, Y (1) (2015)  
Ramirez, J. E. (2) (2015)  
Liu, D. S. (2) (2016)  
Wei, P. (2) (2016)  
Xiao, J. (1) (2017)  
Zhang, G. (1) (2017)  
Zhang, Y. (1) (2017)  
Chai, X. (2) (2017)  
Kou, S. (2) (2017)  
Landwehr, D. (2) (2017)  
Yu, P. (2) (2017)  
Achuthan, A. (3) (2017)  
Bunn, J. R. (3) (2017)  
Coulis, H. E. (3) (2017)  
Eisazadeh, H. (3) (2017)  
Goldak, J. A. (3) (2017)  
Gao, Y. H. (2) (2018)  
Liu, Z. X. (2) (2018)  
Lu, L. (2) (2018)  
Wang, P. C. (2) (2018)  
Zhi, Q. (2) (2018)  
Frostevarig, J. (1) (2019)  
Kaplan, A. (1) (2019)  
Nässström, J. (1) (2019)  
Kannan, R. (2) (2019)  
Li, L. (2) (2019)  
Liu, D. (2) (2019)  
Wei, P. (2) (2019)  
Wu, M. (2) (2019)  
Aidun, D. (3) (2019)  
Bunn, J. R. (3) (2019)  
Cornwell, P. (3) (2019)  
Eisazadeh, H. (3) (2019)  
Feng, J. (1) (2020)  
Sun, Q. (1) (2020)  
Teng, J. (1) (2020)  
Wang, J. (1) (2020)  
Duch, J. (2) (2020)  
DuPont, J. N. (2) (2020)  
Brochu, M. (3) (2020)  
Chekir, N. (3) (2020)  
Sixsmith, JJ. (3) (2020)  
Tollett, R. (3) (2020)  
Carlson, B. E. (1) (2021)  
Haselhuhn, A. (1) (2021)  
Hu, S. (1) (2021)  
Li, Y. (1) (2021)  
Lin, Z. (1) (2021)  
Ma, Y. (1) (2021)  
Han, Y. (2) (2021)  
Jia, C. (2) (2021)  
Wu, CS. (2) (2021)  
Wu, J. (2) (2021)  
Yang, Q. (2) (2021)  
Zhang, Y. (2) (2021)  
Bunn, J. (3) (2021)  
Feng, Z. (3) (2021)  
Kolbus, L. (3) (2021)  
Liu, S. (3) (2021)  
Wang, Z (3) (2021)  
Wang, Z (3) (2021)  
Wu, X. (3) (2021)  
Yu, Z. (3) (2021)  
Yu, Z. (3) (2021)
“POST UNDERWATER WET WELDING HEAT TREATMENT BY UNDERWATER WET INDUCTION HEATING”

DR. EZEQUIEL CAIRES PEREIRA PESEN is a full-time Professor in the Department of Welding & Materials Joining Engineering at LeTourneau University, where he has been since 2019. During 2018 he was a Visiting Professor at Colorado School of Mines, Golden, Colorado. From 2007 to 2018 he worked as a full-time Tenured Professor at Federal Institute of Minas Gerais (IFMG), Minas Gerais, Brazil. He received a Ph.D. in Mechanical Engineering from Federal University of Minas Gerais in 2007. During 2006, he was a research fellow at the Center for Welding Joining and Coatings Research (CWJCR) of Colorado School of Mines, Golden, Colorado. His research interests span both applied welding procedures development and welding consumables development. Much of his work has been on underwater wet welding (UWW) field, mainly through the application of special equipment, welder training technics and Shielded Metal Arc Welding consumable development aiming to achieve Class A (structural) welding. In addition, he has developed welding procedures for different industry parts manufacturing and failure analyses of welded parts. He has performed numerous consulting works on welding consumables quality control, failure analysis and welding related works.

PROFESSOR ALEXANDRE QUEIROZ BRACARENSE received his B.S. degree in Physics and M.S. in metallurgy and engineering materials, with emphasis on welding, from Federal University of Minas Gerais (UFMG), Brazil. He received his Ph.D. in metallurgy and materials, from Colorado School of Mines. Since 1979, he has been involved with education and currently retired as Attended Full Professor in the Mechanical Engineering Department at UFMG. He advised more than 150 B.S., 60 M.S and 20 PhD research students. Also, at UFMG coordinated the Group of Robotics, Welding and Simulation (GRSS) and developed fundamental research based on the physical, chemical, mechanical and metallurgical phenomena during welding, aiming toward process automation (robotization). He coordinated and participated in many research and development projects between university and small and medium companies in Brazil. He is a member of several associations, including American Welding Society – AWS and Brazilian Welding Association – ABS – of which he was also Technical Director for several years. To date, he has published more than 450 documents, including articles in international and national journals, in congresses and chapters in books. He is currently Founder and Technical Director of the company MB WeldWorks whose goal is to help and develop solutions in welding area.
DR. VALTER ROCHA DOS SANTOS holds a degree in Metallurgical Engineering from the Pontifical Catholic University of Rio de Janeiro (PUC-Rio) in 1969, a Master’s degree in Material Science from the Military Institute of Engineering (1974), and a D.Sc. in Metallurgical and Materials Engineering from the Federal University of Rio de Janeiro (2001). He began his career as a professor at PUC-Rio and the Federal Center for Technological Education (CEFET-RJ). He has experience in Materials Engineering with an emphasis on welding, working mainly on the following topics: underwater welding, underwater repairs, mechanical properties, and characterization of materials. He worked at the PETROBRAS Research Center (CENPES) from 1976 to 1996 in failure analysis and research in materials technology applied to the petroleum industry with an emphasis on underwater welding. Later, as technical director of PROMOSUB, coordinated services on welding in the operation onshore of plugs on pipes and carried out consultancy in the qualification of wet welding procedures. He is currently a technical consultant at the Department of Chemical and Materials Engineering at PUC-Rio, working on research projects for the oil industry, highlighting those in wet welding during 2010 to 2017 that resulted in the publication of several technical articles and participation in congresses.

RICARDO REPPOLD MARINHO, MSc, graduated with a degree in Metallurgical Engineering from the Federal University of Rio Grande do Sul (UFRGS) in 1999. He received his Masters in Materials Science from the same institution in 2003. He has worked since 2001 as a Master Equipment Engineer at the Petrobras Research and Development Center. He is a reference and consultant in the Welding area. Mr. Marinho has extensive experience in coordinating Research & Development projects in the area of metallurgy and welding, with several scientific articles published at renowned conferences and in journals. He develops projects in the areas of underwater welding, friction welding, welding of dissimilar joints, stud welding and in-service welding. He also works in the areas of material selection and failure analysis in equipment and components of the oil and gas industry.
PROFESSOR FERNANDO RIZZO obtained his B.S. in Metallurgical Engineering from the Pontifical Catholic University at Rio de Janeiro (PUC-Rio) in 1970, a M.S. in Materials Science from the Military Institute of Engineering (IME) in 1973, and a Ph.D. in Materials Science from the University of Florida, in 1978. He is Professor for the Department of Chemical and Materials Engineering at PUC-Rio, working in the field of Phase Transformation of Materials. Professor Rizzo has published over 100 papers in indexed periodicals and supervised more than 40 Masters and PhDs students. He holds the CNPq highest ranking of productivity in research (1A) and the grant Scientist of Our State from FAPERJ. He was Chairman of the Department of Materials Engineering (1979-1983) and Dean of the Science and Technology Center (1983-1986) at PUC-Rio. Professor Rizzo is Associated Editor of the journal Materials Research, Key Reader of Met. Trans. A, and was President (1993) of the Brazilian Association for Minerals, Metals and Materials (ABM). He took sabbatical leaves as a Fulbright Visiting Scholar at UCLA (1986), as EPSRC Visiting Professor at the University of Leeds (2004), and Visiting Scientist at the BAM, in Berlin (2014). He is a member of the Brazilian Academy of Sciences, of the Pan American Academy of Engineering, of the National Academy of Engineering, and Fellow of ASM International. In 2003, he received the National Order of Scientific Merit of Brazil. From 2006 to 2014, Professor Rizzo was Director of the Center for Strategic Studies and Management (CGEE), a think-tank linked to the Ministry of Science, Technology, and Innovation of Brazil. From 2015 to 2020, he was the General Director of the National Institute of Technology (INT). Since March 2022, he is President of CGEE.

MACHINE DESIGN I

HENRIQUE LEITE ASSUNCAO
DR. JERRY E. GOULD is the Technology Lead for resistance and solid-state welding activities at EWI. His primary focus is on understanding of the underlying sciences of this class of technology, disassembling and reassembling them to create innovative solutions to key customer challenges. Specific studies have covered the range of resistance and solid-state processes. His work also addresses the range of engineering metallic systems, including carbon and stainless steels, aluminum, titanium, and nickel base alloys, as well as composites. The work includes all electrical, mechanical, and metallurgical aspects of these processes. Dr. Gould is also responsible for developing the statistical design of experiment tools used in these studies. He received his PhD in Metallurgical Engineering and Materials Science from Carnegie Mellon University. He has served on EWI’s senior technical staff since 1985. Dr. Gould is active in technical society work including acting as key and peer reviewer for a number of journals functioning as a chapter chairman for the welding handbook and serving on executive committees for a number of conferences. He has published over 175 technical papers and articles on various aspects of resistance welding, solid-state welding, and welding metallurgy. He holds 8 patents.

DR. LINDSEY LINDAMOOD is a cross-disciplinary specialist at EWI whose work covers a broad range of technologies. Her nondestructive testing investigations include research in active thermography and eddy current applications. She is also involved in advancing and expanding the capabilities of resistance welding and ultrasonic metal welding. Lindsey is currently developing processes for monitoring ultrasonic metal welding, and expanding applications of laser ultrasonic inspection. Lindsey received her Ph.D. in 2013 from The Johns Hopkins University. Her doctoral research culminated in a study that demonstrated how laser ultrasonic methods could be used for determining the texture and fatigue damage of a material and the impact of microstructural properties, such as porosity and plastic deformation. Following graduate school, she joined Nokomis, a small startup company, where she was responsible for small business innovation research (SBIR) projects, and proof of concept for new techniques and applications of materials. Her work there included deposition and characterization of thin films and NDE using microwave and ultrasonic methods. Lindsey joined EWI in 2015. Lindsey has recently revised the ultrasonic metal welding chapters in Power Ultrasonics, The AWS Handbook, and Kirk-Othmer Encyclopedia of Chemical Technology. She has also been published in conference proceedings of SPIE – The International Society of Optical Engineering, MS&T, and Sheet Metal Welding.
JULIO MALPICA is a Principal Engineer with the role of Global Roadmap Leader with Novelis Global Research and Development. In his current role, he leads automotive R&D programs to develop new innovative aluminum alloys, develop enabling technologies, and resolving technical problems with the aid of multidisciplinary teams across the globe. This is to support customers in adopting Novelis aluminum sheet products in automotive body structures and battery enclosures. Prior to Novelis, Julio worked at Honda Engineering of NA as a stamping engineer where he designed, developed, and installed stamping tooling in Honda North American plants. Julio holds a B.S. in Mechanical Engineering and a M.S. in Materials Engineering from the University of Nevada-Las Vegas.

PATRICK LESTER is a Lead Engineer with Novelis Global Research and Development. He leads the Joining and Additive Manufacturing team that primarily supports automotive R&D programs to execute joining projects and develop innovative solutions at the intersection of product evolution and customer functionality. Prior to Novelis, Patrick worked with AZZ WSI as a senior welding engineer supporting engineered welding repair solutions for the oil & gas and nuclear industries. He developed code compliant repair techniques and procedures to extend the life of pressure retaining vessels and components. Patrick holds a B.S. in Welding Engineering from The Ohio State University and is currently the chairperson of the AWS B4 Committee for Mechanical Testing of Welds.

DR. DEWEI ZHU received his Bachelor of Engineering in Light Metals Metallurgy in 1982 from Northeastern University, China. He received his Master of Science in Metallurgical Engineering in 1987 from the University of Alberta, Canada. In 1991 he received his Doctor of Philosophy in Metallurgical Engineering at The Ohio State University. After his education, Dewei held postdoctoral fellowships at Ohio State and Nanyang Technological Universities before joining the Can making industry in 1995. He worked as Principal Scientist at the Crown Cork & Seals Co Asia-Pacific R&D center for 5 years before joining Alcan in the year 2000. Dewei led technical services and product development, and technology management in Alcan, then Novelis Korea where he learned about aluminum rolling technology. He diversified into automotive products by leading the Auto sales and technical development in Novelis Asia. In 2000, Dewei moved back to the USA by joining the Novelis Global R&D center located in Kennesaw, Georgia. He is the senior manager who leads the team of R&D scientists and engineers in product and process innovations for aluminum products used in automotive, beverage packaging, aerospace, and specialties markets.
STRUCTURE DESIGN

“LARGE SCALE WELDING PROCESS SIMULATION BY GPU PARALLELIZED COMPUTING”

DR. WAYNE CAI is a Staff Researcher at General Motors Global R&D Center in Warren, Michigan, USA. His research area is advanced manufacturing technology, where mechanics, materials, and mathematics (statistics) are used to optimize manufacturing processes and systems for improved quality, reliability, and reduced cost. He is well-recognized for his innovation in automotive technologies, particularly li-ion battery design and manufacturing technologies, with over forty US and international patents (or patent pending) and dozens GM trade-secrets inventions. He authored over ninety peer-reviewed research papers, one book on li-ion battery manufacturing, and is a frequently invited speaker at a variety of industrial and academic forums. Dr. Cai was Chair of SAE Hybrid Electric Vehicle Committee, Chair of ASME Manufacturing Process Technical Committee and associated Chair of North American Manufacturing Research Institute. He is serving or had served as associate editors for a number of prestigious ASME, SME and SAE technical journals. Dr. Cai received his Ph.D. degree from University of Michigan, and is a Fellow of ASME.

DR. BLAIR CARLSON is currently Lab Group Manager for the Lightweight Systems Manufacturing group and a Senior Technical Fellow at GM Global R&D. His current focus is the joining of dissimilar materials. During his 30+ years of experience within GM he has had assignments in Sweden, Germany, and China for both manufacturing engineering and research. He holds a Ph.D. in Materials Science from the University of Michigan, and a Masters in Executive Technology Planning from Chalmers University. Dr. Carlson is a Fellow of SME, a member of the AWS R&D Committee, and an industrial board member for the Technical Advisory Committee Member for Solid Phase Processing Science Initiative at Pacific Northwest National Lab. He is currently a guest Research Professor at the Shanghai Jiao Tong University and industrial committee member for Ph.D. students at University of Michigan and Southern Methodist University. He has contributed to 70 patents & 12 applications (with 21 intellectual properties in production), and 123 Journal publications.

DR. JIAN CHEN is part of the Materials Processing and Joining Research Staff in the Materials Science and Technology Division at Oak Ridge National Laboratory in Tennessee.
DR. ZHILI FENG leads the Materials Joining Group and is a Distinguished R&D Staff of Oak Ridge National Laboratory. He manages a multi-disciplinary team conducting both fundamental and applied R&D and technology innovations related to materials joining and allied materials manufacturing processes, for automotive, nuclear energy, fossil energy, hydrogen and renewable energy, and defense applications. A Fellow of AWS and IIW, Dr. Zhili Feng’s research covers various aspects of thermal-mechanical-metallurgical behaviors of materials in materials processing. He is recognized for his work in advancing the science and technology of materials joining in a number of important areas such as integrated computational welding engineering (ICWE), friction stir welding and processing, pre-emptive weld residual stress control and management, novel solid-state joining processes of dissimilar metals, and application of advanced neutron and synchrotron scattering tools to study the fundamentals of weld microstructure evolution and effects on weld properties and performance of welded structures. He is also a Joint Faculty of University of Tennessee, Knoxville. He obtained his BS and MS from Tsinghua University, and PhD from The Ohio State University in Welding Engineering.

DR. HUI-HUANG is a Research Associate at Oak Ridge National Laboratory. He obtained his Ph.D. degree in engineering from Joining and Welding Research Institute, Osaka University, Japan in 2016. With over 12 years of experience in high-performance finite element method development and commercial code (ABAQUS etc.) applications, Dr. Huang is dedicated to solving distortion and residual stress problems in large-scale welding and additive manufacturing. He published 32 peer reviewed journals and gave more than 25 talks on advanced simulation related to welding and allied manufacturing. He published 32 peer reviewed journals and gave more than 25 talks on advanced simulation related to welding and allied manufacturing. During his appointment at ORNL, Dr. Huang technically led the effort to deploy a highly efficient GPU based FEM code (x100~x1000 relative to commercial software) for welding and additive manufacturing process modeling. He is a major contributor of the welding software DR-Weld which received the IIW Sossenheimer Software Innovation Award. His current research topics focus on solid-state joining process development for ultrasonic welding, friction based self-piercing riveting via simulation driven design and optimization.

DR. HUI-PING WANG is a Chinese American research scientist and General Motors (GM) Technical Fellow. She attended Tsinghua University in Beijing for bachelor’s and master’s degrees in Engineering Mechanics, obtained her PhD in Mechanical Engineering from The University of Iowa in 2000 and has been working at the GM R&D Center ever since. Hui-Ping’s research work spans from numerical simulation of welding physics and manufacturing processes to experimental methods for manufacturing process development. Her pioneering work on resistance spot welding process simulation helped GM to develop first-in-industry aluminum-steel resistance spot welding technology. Her novel physics-based models of laser-material interactions helped to unravel root causes of prevailing laser application challenges and develop robust laser welding processes for several GM vehicle programs including 2022 Hummer Electric Vehicle. Hui-Ping has 95 peer-reviewed publications, 28 patents and more than 20 intellectual properties in production. She is awardee of 3 GM Boss Kettering Awards (GM’s highest corporate award for innovation) and The Manufacturing Institute’s prestigious 2021 STEP Ahead Award. She is currently an associate editor for Journal of Materials Processing Technology.
AWS NATIONAL AWARD WINNERS

DISTINGUISHED WELDER AWARD

This award is sponsored by the American Welding Society and is presented to an individual(s) who has exceptional welding skills and experiences related to all aspects of the art of welding.

Recipients of award:

Samanich, R. (2012)  
Bane, G. F. (2013)  
Sanchez, A. (2013)  
Duffield, A. (2014)  
Glidewell, D. S. (2014)  
Kincaid, D. (2014)  
Thomas, D. (2014)  
Blom, J. D. (2016)  
No presentation (2017)  
Schmerl, J. (2018)  
No presentation (2019)  
No presentation (2020)  
Kustra, G. A. (2021)

GORDON GIBBS works in the Materials Engineering Department at LLNL, where he is the senior welding technologist in charge of the electron beam and arc welding facilities. He previously worked as a welding technologist at Sandia National Laboratory, Livermore CA, for 33 years before taking on his new role at LLNL in 2011. He graduated from the College of San Mateo welding program in 1975, and is proficient in most welding and brazing processes. Gibbs has participated in many AWS Committees, including the C7 Committee on High Energy Beam Welding and Cutting, has co-authored numerous publications in the Welding Journal and other peer-reviewed technical publications. He is a Certified Welding Inspector with continuous membership for over 30 years, and is an AWS Life Member with nearly 50 years of welding experience.
EXCELLENCE IN ROBOTIC AND AUTOMATED ARC WELDING AWARD

This award is sponsored by the American Welding Society to recognize significant individual achievements in the area of robotic arc welding. This work can include things such as the introduction of new technologies, establishment of the proper infrastructure (training, service, etc.) to enable success and any other activity having significantly improved the state of a company and/or industry. Since 2011, it has been awarded every other year.

Recipient of award:

<table>
<thead>
<tr>
<th>Year</th>
<th>Recipient</th>
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<tbody>
<tr>
<td>2004</td>
<td>Hinrichs, J. F.</td>
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<td>2005</td>
<td>Woodman, Jr. C. L.</td>
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<td>2006</td>
<td>No presentation</td>
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<td>2007</td>
<td>Lefebvre, R. R.</td>
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<td>No presentation</td>
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<td>2009</td>
<td>No presentation</td>
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<td>Boillot, J-P</td>
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<td>2012</td>
<td>No presentation</td>
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<td>2013</td>
<td>Anderson, C. T.</td>
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<td>Rhoda, D. P.</td>
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<td>2018</td>
<td>No presentation</td>
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<tr>
<td>2019</td>
<td>Mangold Jr., V. L.</td>
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<tr>
<td>2020</td>
<td>No presentation</td>
</tr>
<tr>
<td>2021</td>
<td>No presentation</td>
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</tbody>
</table>

CLAY RASMUSSEN began his career as a structural steel welder, upon graduating jumped into welding automation with AMET, then spent 10+ years with John Deere. During this time, he managed global project teams to support growth initiatives in India, Russia & Brazil. Managed Fabrication, Welding & Machining strategies related to staffing, training, equipment, procedures & best practices. Following John Deere, Clay moved to Idaho to teach the next generation of welding engineers. Clay has established a preeminent welding program at BYU-Idaho, including the addition of a 4-year BS degree in Welding Engineering Technology, which has grown to over 180 students. His focuses include develop curriculum, lab exercises, evaluation criteria and a culture of problem solving and learning excellence. As well as cultivate industry relationships to foster job opportunities, provide industry focused learning and build University relationships for the long-term benefit of the students as well as mentor, guide and promote the professional welding industry to provide a better understanding of career opportunities. Mr. Rasmussen received his AAS in Welding Engineering Technology at Ricks College (now BYU-Idaho), his BS in Welding Engineering Technology at Utah State University and his MBA from The University of Iowa Tippie College of Business. His involvement with AWS began as a student member and currently serves on AWS D14 Committees, AWS ESC Committees, BYU-Idaho Student Chapter Advisor, and various roles within Idaho/Montana Section 185.
AWS NATIONAL AWARD WINNERS

DALTON E. HAMILTON MEMORIAL CWI OF THE YEAR AWARD

This award is sponsored by the American Welding Society in memory of Dalton E. Hamilton, who contributed greatly to the success of the Society’s Certified Welding programs. This award recognizes AWS members participating in the SCWI/CWI programs whose inspection, Society and civic activities have enhanced public awareness of the Society and the CWI program or who have otherwise made an outstanding contribution to the science of welding inspection.

Recipients of award:

Sanquini, E. V. (1990)  
Soref, E. (1991)  
Hoffman, J. J. (1992)  
Tuttle-Stewart, J. (1993)  
Kriger, G. D. (1994)  
Falbo, P. (1999)  
Timmerman, H. T. (2001)  
Hennessy, J. P. (2005)  
Kane, J. (2008)  
Zammit, P. (2009)  
Waite, R. F. (2011)  
Alston, J. (2012)  
No presentation (2013)  
No presentation (2014)  
No Presentation (2015)  
Griffith, B. (2016)  
Pariseau, J. (2018)  
Redding, J. (2019)  
Corbin, J. D. (2020)  
No presentation (2021)

No presentation this year.
AWS NATIONAL AWARD WINNERS

2021 PAPER | W. H. HOBART MEMORIAL AWARD

This award is presented in memory of William H. Hobart, Sr., and is sponsored by Hobart Brothers Company. It is awarded to the authors of the paper published in the Welding Journal during the previous calendar year that describes the best contribution to pipe welding, the structural use of pipe or similar applications, excluding the manufacture of pipe.

Recipients of award:

PROFESSOR DHEERENDRA KUMAR DWIVEDI obtained his BE (mechanical engineering), in 1993 from GEC Rewa, ME (welding engineering) from Univ. of Roorkee in 1997 and PhD in Met. Engineering from MNIT, Jaipur in 2003. He has about 9 years teaching experience at NIT Hamirpur and 18 years at IIT Roorkee in subjects related with manufacturing at UG level and welding engineering related subjects at PG level. He has published more than 120 research papers in SCI/SCIE indexed journals and undertaken 24 sponsored research and 55 industrial consultancy projects. He has authored three books entitled Production and Properties of Cast Al-Si Alloys with New Age International, New Delhi (2013), Surface Engineering with Springer, New Delhi (2018) and Fundamentals of Metal Joining with Springer, New Delhi (2022). His areas of interests are Manufacturing: Welding & Surface Engineering, Mechanical Behavior, Failure Analysis, Dissimilar Metal Joining, Friction Stir Welding, A-GTAW, Diffusion Bonding, and Weldability.

DR. ANUP KULKARNI is currently working as a Senior Engineer at Pratt and Whitney R&D center, Bangalore. He obtained a Ph.D. in Welding Engineering from Indian Institute of Technology Roorkee. During his Ph.D. studies, he worked on various facets of dissimilar steel welding used in thermal and nuclear power plants in close collaboration with IGCAR, Kalpakkam. Prior to that, he completed his postgraduate studies from National Institute of Technology Tiruchirappalli, India with a specialization in Manufacturing Technology. During his Masters program, he worked on the structure-property correlation and the corrosion aspects of duplex stainless steels joined by solid state welding. He completed undergraduate studies in Mechanical Engineering from Shivaji University Kolhapur, India. His research interests are welding, materials processing, modelling and simulations, additive manufacturing, and metallurgical and mechanical properties characterization.

DR. VASUDEVAN M. is a Scientific Officer ‘H’ and currently holds the position of Associate Director, Materials Development and Technology Group, Metallurgy and Materials Group, Indira Gandhi Centre for Atomic Research, Kalpakkam. His areas of research interest include structural materials development, welding, modeling and simulation and Mechanical Properties. He has published over 175 research papers in peer reviewed journals/books, 140 papers in conference proceedings, holds an international patent and delivered more than 65 invited lectures at reputed universities and conferences. His h-index is 37 and his research papers have already received over 3518 citations. His name appears in the world ranking of top 2 percent of scientists in Materials published by Stanford University USA & Elsevier publications during the years 2019 & 2020 in year wise and career wise ranking. He is an Editorial Board Member in International Journal of Pressure Vessels and Piping, and Editor, Trans IIM. He is an academic council member in Pondicherry Technological University, Puducherry. Dr. Vasudevan M. is also a council member for Indian Institute of Metals. He is Chairman IIM Kalpakkam Chapter. He has received several awards note able among them include SAIL Gold Medal (1993) from IIM; Group Achievement Award 2006 for Excellence in Science, Engineering & Technology from the Department of Atomic Energy, Govt. of India; Overall Best Paper Award from IIM Kalpakkam Chapter (2007); Indian Nuclear Society Gold Medal from INS (2008); Prof. Placid Rodriguez Memorial Award from IIW (2009); Overall Best Paper Award from IIM Kalpakkam chapter (2013); National Metallurgist Day “Metallurgist of the Year Award” from the Ministry of Steel Government of India (2016). He has been selected for Fellow of Indian Institute of Metals (FIIM) in 2021.
HONORARY MEMBERSHIP AWARD

This award is sponsored by the American Welding Society and is presented to a person of acknowledged eminence in the welding profession or who is credited with exceptional accomplishments in the industry.

Recipients of award:

Hinricks, J. F. (1990) 
Hemzacek, R. T. (1991) 
Bovie, D. F. (1992) 
David, S. A. (1992) 
Cable, H. H. (1994) 
Campbell, H. C. (1994) 
Christoffel, R. J. (1996) 
Liu, S. (1996) 
Slaughter, G. M. (2000) 
Baeslack, III, W. A. (2001) 
Sekely, J. J. (2001) 
Cieslak, M. J. (2002) 
DeFreitas, L. (2005) 
Nangle, D. J. (2006) 
Dammann, J. (2009) 
Kvidahl, L. G. (2009) 
Dilthey, U. (2011) 
DeRocco, E. S. (2012) 
McNelly, J. M. (2012) 
Alonso, Jr., O. (2013) 
Andringa, M. V. (2014) 
Yevick, E. G. (2014) 
Feng, Z. (2015) 
White, T. J. (2015) 
Kou, S. (2016) 
Purvis, R. F. (2016) 
Cook, M. C. (2017) 
No presentation (2019) 
Alford, D. (2020) 
Barbie the Welder (2020) 
Zhou, Y. N. (2021)

**RAE RIPPLE**, when it comes to educational and professional experience that brought me to where I am in my current career, my story is non-traditional. At 14, I was homeless. I struggled and bounced around from job to job. Waitressing, tow-truck driving, fighting fires, you name it – I tried it. Until I picked up a paintbrush and started painting, I could not find where I belonged. I felt lighter with each brush stroke. But I needed more of a release. I sketched, I bent wire, I cut sheet metal pieces with tin snips, and spent months cutting, wrapping, and joining pieces by hand. But nothing sufficed, until I picked up a plasma cutter and began welding. I finally found my purpose – to create and share art with the world. Skip to today, I create metal art sculptures all over the world, was a finalist on Netflix’s Metal Shop Masters, published in Welder magazine, and have been on the Down to Business podcast, and Monster Garage on Discovery Channel. In addition to that, I have partnered with companies like Northern Tool, Lincoln Electric, Harley Davidson, Hypertherm, Dovetail Workwear, FastCut CNC, AlumaReel, Benchmark Abrasives, Flame Tech and more.
INTERNATIONAL MERITORIOUS CERTIFICATE AWARD

This award is given in recognition of the individual’s significant contributions to the worldwide welding industry. This award reflects “service to the international welding community” in the broadest terms.

Recipients of award:


JOLENE (JO) BORRELLI is the Co-Founder and President of The Red Bench. Jo pursued her interest in trades and technology by becoming a horticulturist and later, a JavaScript programmer. With the dream of studying engineering always present in her mind, Jo chose to switch careers and enrolled in the Materials Engineering program at the University of Alberta in Edmonton, Alberta, Canada. Her fellow Co-Founder and CEO of The Red Bench, Mackenzi (Mack) Johnston, taught her how to weld which ignited her passion for welding and supporting women in technical fields. Jo was inspired to found The Red Bench to give women like herself the opportunity to carve a path in industry, on their own terms. Jo is currently a Materials Engineer in Training at Acuren Edmonton where she performs failure analysis and materials testing.

MACKENZI (MACK) JOHNSTON is the Co-Founder and CEO of The Red Bench. She is a trained welder out of the Southern Alberta Institute of Technology (SAIT) and a materials engineering undergraduate student at the University of Alberta, located in Edmonton, Alberta, Canada. With a plethora of experience in various welding processes and materials, as well as a passion for welding education, Mack has dedicated much of her life to teaching people, particularly women and diverse individuals, how to weld and use shop equipment. Teaming up with Jolene (Jo) Borrelli, Co-Founder and President of The Red Bench, they created a space for the people that historically experience barriers when entering and staying in the welding and metalworking industry in Alberta. The Red Bench is where they commit to changing the welding industry for good and with more than 60 members gained over 5 months of being open and operational, it is clear that The Red Bench is a much needed space in the community. Mack is currently a Materials Engineering Student interning with PCL Construction and plays a major role in PCL’s welding engineering team, working on procedure qualifications, quality control, and facilitating their FAB102: Introduction to Welding Processes course. Mack hopes to graduate in 2024 and enter the industry as a full-time engineer and educator.
AWS NATIONAL AWARD WINNERS

WILLIAM IRRGANG MEMORIAL AWARD

This award is sponsored by The Lincoln Electric Company to honor the late William Irrgang. It is awarded to the individual who has done the most to enhance the American Welding Society’s goal of advancing the science and technology of welding over the last five years.

Recipients of award:

- Manz, A. F. (1990)
- Goodwin, G. M. (1991)
- Olson, D. L. (1992)
- Mustaleski, T. M. (1994)
- Cieslak, M. J. (1997)
- Howden, D. G. (2001)
- Kvidahl, L. (2005)
- Babu, S. S. (2011)
- Mendez, P. (2013)
- Wei, P-S (2014)
- Landon, D. J. (2015)
- Lienert, T. J. (2016)
- Zhang, Y. (2017)
- Newell, Jr., W. F. (2020)
- Debroy, T. (2021)

DR. RICHARD D. CAMPBELL received a BS degree in Welding Engineering from LeTourneau University in 1978 and a PhD in Materials Engineering from Rensselaer Polytechnic Institute in 1987, being Doc Savage’s last Ph.D. student. Having joined AWS at age 17, Dr. Campbell is a Life Member. He holds a PE license in metallurgical engineering, is an AWS SCWI and CWE, a CWB Level 2 Welding Inspector, and an ASNT NDT Level III Visual Testing Inspector. He has taught AWS Certified Welding Inspector classes for over 25 years. Dr. Campbell is author of over 30 technical articles on welding or metallurgy. As an expert in stainless steel welding, he authored AWS’s The Professional’s Advisor on Welding of Stainless Steels and now authors the Stainless Q&A column in the AWS Welding Journal. Rich Campbell has been a welding engineer with Bechtel for over 15 years and was elected a Bechtel Fellow in 2011. Dr. Campbell represents Bechtel on many AWS and ASME welding code committees. With more than 40 years of welding engineering experience, he previously worked at Westinghouse Bettis Atomic Power Lab, Rockwell International/EG&G Rocky Flats, and Purity Systems. Dr. Campbell also had his own consulting business.
## 2021 Paper | Charles H. Jennings Memorial Award

This award is sponsored by the American Welding Society in honor of Charles H. Jennings, who served as AWS President during the 1951–52 year. This award is presented for the most valuable paper written by a college student or faculty representative published in the Welding Journal during the previous calendar year.

*Recipients of award:*

<table>
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<th>Name</th>
<th>Year</th>
<th>Name</th>
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<td>Lata, W. P.</td>
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“EFFECTS OF PROCESSING PARAMETERS ON WIRE ARC ADDITIVE MANUFACTURED INCONEL 718”

DR. DARYUSH AIDUN received his Ph.D. in Materials Engineering from R.P.I. in 1982. He was the Chairman of the Mechanical & Aeronautical Eng. Dept. of Clarkson University (CU) from 2005 to 2015. And is still a Professor at the University. As the MAE Dept. Chair he increased the MAE UG students from 550 to over 800, hired 12 Asst. Professors, and 1 Associate Professor in the area of Fluids; Nano-materials; Biomechanics and Aero, and prepared 7 successful tenure files that resulted in the tenure & promotion of the 7 faculty from Asst. Professor to Assoc. Prof. He also prepared 5 successful promotion files that resulted in the promotion of the 5 faculty from Associate Professor to Full Professor. He has received many awards including the AWS Charles H. Jennings Award in 2020, the AWS A.F. Davis Silver Award in 1985, 2017 & 2019. He also received the AWS Life Member Certificate in 2019. Dr. Aidun is an AWS Fellow as well as a Fellow of the American Society of Mechanical Engineers (FASME). He received his Professional Engineering (P.E.) License in Metallurgy & Materials Eng.

DR. FATEMEH HEJRIPOUR is currently an R&D heat transfer senior engineer at Carrier Corporation in Syracuse, NY, USA. Prior to joining Carrier, she was a postdoctoral associate at Binghamton University, NY. Her projects focused on non-destructive evaluation of thermal interface materials and investigation of anisotropic thermal conductivity of additive manufactured AlSi10Mg alloy. In 2019-2020, she was a staff scientist in the Metal Additive Manufacturing Laboratory at the University of Memphis, TN. In fall 2019, she received her Ph.D. degree majoring in Mechanical Engineering from Clarkson University, Potsdam, NY. Her studies lied in the field of additive manufacturing, mesoscale CFD simulation of the AM process, mass transport phenomenon and its effect on mechanical properties in the dissimilar metals welding and cladding processes. Her current research interests are including machine learning with a focus on data-driven and physics-informed deep learning for surrogate modeling, and application of additive manufacturing to fabricate the heat exchangers.
AWS NATIONAL AWARD WINNERS

2021 PAPER  I  JAMES F. LINCOLN GOLD MEDAL AWARD

This award is endowed by the late J. F. Lincoln, former Chairman of the Board of The Lincoln Electric Company. This award is presented for the paper with a single author that represents the best original contribution to the advancement and use of welding published in the Welding Journal during the previous calendar year.

Recipients of award:

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“ANALYSIS OF A HIGH-STRENGTH STEEL SMAW DATABASE”

DR. KRISHNASWAMY Sampath is very passionate about materials, welding, brazing, soldering and thermal spray technologies. Sampath started his welding career at India Welding Research Institute. He underwent UNIDO Fellowship training at Japan Welding Research Institute, where he specialized in vacuum brazing of aluminum alloys and alumina ceramic to kovar alloy. Sampath received his Ph.D. degree in Welding Engineering from The Ohio State University and MBA degree from Cornell University. His dissertation research under the eminent guidance of Provost W. A. Baeslack III evaluated the weldability of dispersion strengthened aluminum alloys and identified 3 different types of weld solidification behaviors based on welding process and conditions. This research was published in both AWS Welding Journal, November 1991 and in Volume 6, Welding, Brazing and Soldering, ASM Handbook, 10th Edition, 1993. Nearly 3 decades ago, Sampath was inspired by Dr. Howard A. Kuhn in pioneering a metallurgical model to consolidate existing knowledge and reach beyond existing knowledge in providing innovative, low-cost, low-risk and sustainable solutions. His constraints based model (CBM) eliminated traditional trial-and-error method used in electrode development, while avoiding rich and lean compositions, thereby leading to successful development of ER-100S and ER-120S GMAW electrodes for critical US Navy applications and an US Patent 5744782 award. Subsequently, Sampath used CBM with C++ algorithm to comparatively evaluate U.S. Patents 5,523,540 and 5,744,782 against AWS A5.28 (or MIL-E-23765/2) electrode specification requirements for chemical composition range of electrodes and mechanical properties of weld metal. Interestingly, such a comparative evaluation is possible only with the aid of CBM. Sampath also used CBM in mentoring 3 Richland High School (Johnstown, PA) Juniors in metallurgical designing of high performance GMAW Electrodes for HSLA-65 steels project that received the 2008 Regional Finalist Award at the Siemens Math, Science and Technology competition. Lately, Sampath reviewed Evans’ SMAW database, applied CBM to effectively organize and analyze the BIG DATA in gaining valuable insights and published the results in Welding Journal, December 2021. Sampath has published over 40 research papers in peer-reviewed journals, including AWS Welding Journal, ASM Source Books and Handbooks besides Conference Proceedings. He has been an AWS member for over 32 years and a member of AWS A5, A5A, A5O, A5T and C2 Committees for nearly 3 decades.
2021 PAPER I MCKAY-HELM AWARD

This award is sponsored by Hobart Brothers Company, to honor two pioneers of the welding industry. James C. McKay was the president of the McKay-Helm Company for more than 30 years, and Dr. David Helm occupied the McKay chair in welding metallurgy at the Mellon Institute in Pittsburgh from 1934 to 1973. It is presented for the best contribution to the advancement of knowledge of low-alloy steel, stainless steel or surfacing welding metals, involving the use, development or testing of these materials, as represented by articles published in the Welding Journal during the previous calendar year.

Recipients of award:

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“RESISTANCE OF Austenitic Stainless STEELS TO Ductility-Dip CRACKING: MECHANISMS”

SINDO KOU is Professor, Department of Materials and Engineering, University of Wisconsin. He received PhD in Metallurgy from Massachusetts Institute of Technology and BS in Chemical Engineering from National Taiwan University. He joined University of Wisconsin-Madison, became Professor in 1985 and Chair of Department of Materials Science and Engineering in 2000-2004. Kou worked on fundamental welding metallurgy and weldability, including solidification cracking, liquation cracking, and transport phenomena. His books Welding Metallurgy (3rd edition, 2020, John Wiley) and Transport Phenomena and Materials Processing (1996, John Wiley) are worldwide textbooks. The former is also a reference book, cited about 5,000 times. Kou is Fellow of the American Welding Society and recipient of: William Irfgang Award, Honorary Membership Award, Comfort A. Adams Lecture Award, Fellow, James F. Lincoln Gold Medal, William Spraragen Award, Warren F. Savage Award, Charles H. Jennings Award, A. F. Davis Silver Medal Award, and Adams Memorial Membership Award. Kou also received: 2017 Yoshiaki Arata Award from International Welding Institute, 2017 Light Metals Magnesium Best Paper from The Minerals, Metals & Materials Society (TMS), 2013 Bruce Chalmers Award from TMS, 1999 Chancellors’ Award for Distinguished Teaching from University of Wisconsin, 1998 Fellow of ASM International, and 1980 John Chipman Award from Iron and Steel Society.

DR. JUSTIN D. MORROW is an Applications Scientist in the advanced technology development team at Thermo Fisher Scientific. His aspiration is to accelerate critical research by partnering with scientific customers early in the development of transformative technologies. He is currently collaborating with the University of Cincinnati to apply early-stage spectroscopy hardware to real-world problems and will be presenting results at several 2022 conferences. Justin has published numerous papers and holds several patents in the areas of x-ray microanalysis and optical spectroscopy. He is passionate about professional community-building and is the Acting Secretary/Treasurer for the Tristate chapter of the Society for Applied Spectroscopy. Prior to joining Thermo Fisher Scientific Justin received a doctorate in Materials Science and Master of Science in Mechanical Engineering from the University of Wisconsin-Madison while advised by Professor Frank Pfefferkorn. His research work contributed to two patent applications and a Best Paper Award at the MSEC 2016 conference. He also holds a Bachelor’s degree in Materials Engineering from the University of Cincinnati and has professional experience in aviation research from GE Aviation and the Materials Directorate of Air Force Research Laboratories.

DR. PING YU received her M.S. and Ph.D. degree in Material Science and Engineering from Xi’an Jiao Tong University in China. She then worked for Advanced Technology & Materials CO., Ltd from 2007 to 2016. She was a visiting scholar at UW-Madison from 2014 to 2016. And she worked at UW-Madison as an assistant scientist from 2016-2018. She has 37 published papers and 1 patent. Her research works include flux cored wires for carbon steels and high strength steels, hardfacing by Nickel based WC flux cored wire, solidification cracking in stainless steels.
AWS NATIONAL AWARD WINNERS

PROFESSOR KOICHI MASUBUCHI AWARD

This award is sponsored by the Center for Ocean Engineering at the Department of Mechanical Engineering, Massachusetts Institute of Technology. It was established to recognize Professor Koichi Masubuchi, who has made significant contributions to advancing the science and technology of welding, especially welding fabrication of marine and space structures. This award is presented to an individual who has made significant contributions to the advancement of science and technology of materials joining through research and development.

Recipients of award:

- Cieslak, M. J. (1993)
- Buchmayr, B. (1994)
- Shinozaki, K. (1994)
- Grong, O. (1996)
- Kim, D. S. (1997)
- Robino, C. V. (1997)
- DuPont, J. N. (1999)
- Feng, Z. (2001)
- Kozeschnik, E. (2005)
- No presentation (2007)
- Sato, Y. S. (2009)
- Park, S.H.C. (2012)
- Gerlich, A. (2016)
- Mikami, Y. (2017)
- Pouranvari, M. (2019)
- Siefert, J. A. (2020)

DR.-ING. CAROLIN FINK is an Assistant Professor in the Department of Materials Science and Engineering at the Ohio State University (OSU). Prior to joining the Welding Engineering Program at OSU as the first female faculty member in 2017, she was a postdoctoral fellow in the program. Her research focused on the fundamentals of the metallurgical processes, material properties and failure mechanisms in metals joining and additive manufacturing. Dr. Fink is engaged in the NSF/IUCRC Manufacturing and Materials Joining Innovation Center (Ma2JIC) as principal investigator and thrust area lead. She is Editorial Board member of the Welding in the World Journal, and a member of technical committees in the American Welding Society (AWS) and the International Institute of Welding (IIW). Dr. Fink holds a diploma and doctoral degree from Otto-von-Guericke University in Magdeburg, Germany. She was awarded the IIW Henry Granjon Prize (2016), Category B: Materials Behaviour and Weldability in recognition of her doctoral research, and received the AWS Warren F. Savage Memorial Award in 2021. She is a certified International Welding Engineer (IWE), and passionate about empowering young females into the field of welding engineering.
AWS NATIONAL AWARD WINNERS

SAMUEL WYLIE MILLER MEMORIAL MEDAL AWARD

This award is sponsored by the American Welding Society to honor Samuel Wylie Miller, President during the 1921–22 years. It is awarded for meritorious achievements that have contributed conspicuously to the advancement of the art and science of welding and cutting.

Recipients of award:

- Parks, J. M. (1990)
- Dickerson, P. B. (1992)
- Webster, R. T. (1993)
- Alexander, Sr., L. N. (1999)
- No presentation (2006)
- Peaslee, R. L. (2009)
- Kotecki, D. J. (2010)
- Siewert, T. (2011)
- Devletian, J. H. (2014)
- Sparschu, T. M. (2019)
- Miller, D. K. (2020)
- Melfi, T. (2021)

DR. RICHARD D. CAMPBELL received a BS degree in Welding Engineering from LeTourneau University in 1978 and a PhD in Materials Engineering from Rensselaer Polytechnic Institute in 1987, being Doc Savage’s last Ph.D. student. Having joined AWS at age 17, Dr. Campbell is a Life Member. He holds a PE license in metallurgical engineering, is an AWS SCWI and CWE, a CWB Level 2 Welding Inspector, and an ASNT NDT Level III Visual Testing Inspector. He has taught AWS Certified Welding Inspector classes for over 25 years. Dr. Campbell is author of over 30 technical articles on welding or metallurgy. As an expert in stainless steel welding, he authored AWS’s The Professional’s Advisor on Welding of Stainless Steels and now authors the Stainless Q&A column in the AWS Welding Journal. Rich Campbell has been a welding engineer with Bechtel for over 15 years and was elected a Bechtel Fellow in 2011. Dr. Campbell represents Bechtel on many AWS and ASME welding code committees. With more than 40 years of welding engineering experience, he previously worked at Westinghouse Bettis Atomic Power Lab, Rockwell International/EG&G Rocky Flats, and Purity Systems. Dr. Campbell also had his own consulting business.
AWS NATIONAL AWARD WINNERS

NATIONAL MERITORIOUS AWARD

This award is sponsored by the American Welding Society and is given in recognition of good counsel, loyalty and devotion to the affairs of the Society; assistance in promoting cordial relations with industry and other organizations; and for the contribution of time and effort on behalf of the Society.

Recipients of award:

- Bertossa, D. C. (1990)
- Randall, M. D. (1991)
- Berger, D. S. (1992)
- Fassinger, C. R. (1992)
- Christoffel, R. J. (1996)
- Dammann, J. (1999)
- Carlson, N. M. (2001)
- Winsand, A. O. (2001)
- Bastian, B. J. (2002)
- Pierce, R. C. (2003)
- Franklin, J. R. “Rusty” (2005)
- Greer, J. E. (2007)
- Crichton, A. B. (2009)
- Albrecht, B. (2011)
- Stropki, J. M. (2011)
- DeCorte, D. B. (2012)
- McCall, J. (2012)
- Crisci, J. R. (2013)
- Houston, S. V. (2013)
- Raymond, S. L. (2014)
- Lienert, T. J. (2105)
- Stricker, J. (2016)
- Tumuluru, T. (2016)
- Knight, G. A. (2017)
- Perdomo, J. J. (2017)
- No presentation (2019)
- Deckrow, J. (2020)
- Witkowski, S. (2020)
- oling, B. E. (2021)
- DeCorte, D. (2021)
WILLIAM KOMLOS once said to my wife, “I sure wish I knew what I was doing on this job.” I was deep into data sheets and the Welding Handbook. She laughed and said with a smile, “You never know what you’re doing. The jobs you do change all the time!” I started Arc Tech, LLC in 1999 at the bottom of a coal mine looking at weld cracks. I had 20-yrs in welded fabrication and precision machining before that. One of those jobs, a $9.5M nuclear bomb simulator project I managed, became a cover-story for the Welding Journal. I went back to school part-time to learn why welds crack. My Master’s project was granted US Patent 7,690,553 for a method to stress-relieve structural welds cryogenically. Contracts back at Arc Tech included designing and qualifying flare-bevel groove welds for the Mars Rover Perseverance. There are no prescribed test specimens offered for that joint. Taking a lead from the AWS rebar welding code, I modified the indirect-butt qualification to test and qualify the AWS D17.1 Class B aerospace welds now crawling around the surface of Mars. I thought the mix of art and science profound. It wasn’t rocket science; just good welding engineering.

SHANEN ARANMÓR, MS, CWI/CWE, a strong advocate of the skilled trades, has devoted the last decade to building interest and credibility for American manufacturing and fabrication. Former college professor of wellness turned administrator, Shanen realized she wasn’t meant to push papers thus returned to school to earn degrees in welding and industrial technology. Her relationship with SkillsUSA began as a national welding fabrication competitor and evolved into the National Technical Chair for Welding Sculpture. Shanen’s passion for welding and quality control led her to Miller Electric, where she served as Western Regional Trainer for six years, teaching welding processes across North America. In 2017, Shanen founded Weld Like A Girl™ offering classes to the public, large-scale welding projects to benefit the community and welder qualification services. A member of Project MFG, Shanen is part of a team backed by the US DOD promoting manufacturing, inspiring youth and elevating trades to address our skilled trades crisis. As lead CWI, she helps grant cash awards in excess of $200K as featured on Clash of Trades on YouTube. As host of The Money Machine: It’s All About the Trades on the JUL-TV network, Shanen highlights various careers helping make the trades cool again.
2021 PAPER | ROBERT L. PEASLEE MEMORIAL BRAZING AWARD

This award is sponsored by the Wall Colmonoy Corporation and honors Robert L. Peaslee for his many years of dedicated service to the industry. This award recognizes the paper considered to be the best contribution to the science or technology of brazing published in the Welding Journal during the previous calendar year.

Recipients of award:

Sakamoto, A. (1992)  
Kang, S. (1993)  
Liu, S. (1994)  
Trevisan, R. E. (1994)  
Timsit, R. S. (1995)  
Humpston, G. (1997)  
Sangha, S. P. S. (1997)  
Headley, T. J. (1998)  
Yang, N. (1998)  
Rabinkin, A. (1999)  
Ribaudo, A. J. (1999)  
Hosking, F. M. (2000)  
Glass, S. J. (2001)  
Hosking, F. M. (2001)  
Stephens, J. J. (2001)  
Vianco, P. A. (2001)  
Yang, N. (2001)  
No presentation (2005)  
No presentation (2006)  
No presentation (2007)  
Wang, Y-M (2008)  
Elrefaei, A. (2009)  
No presentation (2010)  
Wang, H. (2011)  
Xue, S. (2011)  
Liu, X. (2011)  
Pan, J. (2011)  
Nasiri, A. (2012)  
Li, L. (2012)  
Kim, S. (2012)  
Zhou, Y. N. (2012)  
Weckman, D. C. (2012)  
Nguyen, T. C. (2012)  
Bachorik, P. (2013)  
Lee, N-C (2013)  
Nasiri, A. (2014)  
Weckman, D. C. (2014)  
Zhou, Y. N. (2014)  
Nasiri, A. M. (2016)  
Weckman, D. C. (2016)  
Zhou, Y. N. (2016)  
Grant, R. P. (2017)  
Kilgo, A. (2017)  
Kotula, P. M. (2017)  
McKenzie, B. M. (2017)  
Vianco, P. T. (2017)  
Fu, H. (2018)  
Leone, E. (2018)  
Grant, R. (2019)  
Kilgo, A. (2019)  
McKenzie, B. (2019)  
Vianco, P. T. (2019)  
Guerrero, E. (2020)  
Kilgo, A. (2020)  
McKenzie, B. (2020)  
Price, W. J. (2020)  
Vianco, P. T. (2020)  
Williams, S. (2020)  
Bo, J. (2021)  
Li, Z. (2021)  
Ma, L. (2021)  
Xu, Z. (2021)  
Yan, J. (2021)
“INTERFACE REACTIONS RESPONSIBLE FOR RUN-OUT IN ACTIVE BRAZING: PART 3”

RICHARD GRANT retired from Sandia National Laboratories at the end of 2021. He ran the EPMA/Microprobe Lab at Sandia for many years. During his career he enjoyed working on a variety of materials; metals, ceramics, glasses and a wide variety of minerals. His work also included analyzing many different joining techniques; brazes, welds, glass to metal seals, etc. Mr. Grant’s work frequently involved looking at diffusion profiles and analyzing intermetallic compounds.

DENNIS DE SMET is a Mechanical Technologist at Sandia National Laboratories in the Metallurgy & Materials Joining Department. He received an Associate of Applied Science from Central New Mexico Community College before being accepted into the Sandia National Laboratories Advanced Manufacturing Trades Training Program. Once completing the training program, Dennis was hired at Sandia and worked in the Advanced Prototyping S & T Department where he spent 7 years working with Low Temperature Co-Fired Ceramics. For the past 12 years Dennis has been engaged in conventional and active brazing, materials joining in vacuum, hydrogen or inert gas environments, and heat treating.

ALICE KILGO was a distinguished Technologist at Sandia National Laboratories for over 33 years, focusing on Metallography, Failure Analysis, and Image Analysis. She is now retired.

BONNIE B. MCKENZIE retired from Sandia National Laboratories as a Distinguished Technologist in the Materials Characterization and Performance department. Her career at Sandia spanned over 34 years working as a scanning electron microscopist. She enjoyed experiencing the evolution of the SEM and its associated analytical techniques while analyzing a huge array of samples from across the labs.

DR. PAUL T. VIANCO received a Ph.D. degree in Materials Science from the University of Rochester (New York) in 1986. He joined Sandia National Laboratories, Albuquerque, New Mexico in 1987 until his retirement as a Senior Engineer following a 35-year career there. Dr. Vianco has been involved in all aspects of Sn-Pb and Pb-free soldering technologies, including alloy and process development as well as both empirical and computational modeling approaches for predicting thermal mechanical fatigue reliability and solid-state intermetallic compound layer growth. Dr. Vianco has held several positions on the SMTA Board of Directors; he is also a Fellow of the American Welding Society and ASM, International.

CHARLES WALKER
PLUMMER MEMORIAL EDUCATION LECTURE AWARD

This award is sponsored by the American Welding Society to recognize Fred L. Plummer’s service to the Society as President from 1952 to 1954 and Executive Director from 1957 to 1969. This award recognizes outstanding contributions to the national education lectures presented at the AWS Annual Welding Show and Convention.

Recipients of award:

- Swannell, P. (1989)
- Sabo, R. S. (1992)
- Levert, Sr., E. D. (2005)
- Greer, J. E. (2006)
- Compton, J. D. (2009)
- Madigan, R. B. (2010)
- Lawrence, T. W. (2011)
- Adonyi, Y. (2012)
- Polanin, W. R. (2013)
- Vetter, L. (2014)
- Burdge, S. L. (2016)
- Cotner, D. R. (2017)
- Baber, T. (2018)
- No presentation (2020)
- Colton, J. N. (2021)

“THE WRITTEN PROJECT PORTFOLIO: BENEFITS TO PRACTICAL WELDING TRAINING”

PROFESSOR JEFFREY CARNEY started his welding career in 1978 at a technical vocational school in Royal Oak, MI. During high school and after graduation, he was employed as a welder’s helper at Doorman Manufacturing until his enrollment in the Welding Technology (WELT) AAS degree program at Ferris State University in 1983. In 1987 he graduated with a Ferris State Welding Engineering Technology (WELE) BS degree and entered the welding supply business providing welding services, equipment, and consumables to manufacturing companies in metro Detroit. From 1994 to 1996, he was employed by AAB Flexible Automation in Auburn Hills, MI. Since 1996, he has been on the faculty of the Ferris State Welding Technology and Welding Engineering Technology programs, serving as Program Faculty Coordinator for 12 of those years. He holds Master of Science degrees in Curriculum Development and Career & Technical Information. He has been married for 35 years to Jodi and they have three sons and two grandchildren.
# AWS NATIONAL AWARD WINNERS

## PRIVATE SECTOR INSTRUCTOR MEMBERSHIP AWARD

This award was established by the AWS Board of Directors as a means of honoring educators in the welding community who teach in private facilities. These individuals, in the opinion of the AWS Education Committee, have advanced the knowledge of welding to their students through apprenticeship programs, internal corporate training programs, and similar nonpublic educational activities.

*Recipients of award:*

<table>
<thead>
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**DR. JESSE A. GRANTHAM** received his Ph.D. in Engineering from The Ohio State University (OSU), Columbus, OH in 1992, his M.S. in Welding Engineering from OSU, Columbus, OH (1988), an M.B.A. from the University of Southwestern Louisiana, Lafayette, LA (1982); and a B.S. in Industrial Engineering and Management from Oklahoma State University, Stillwater, OK (1969). He is a recognized Forensic Welding Expert, currently a Fellow #597 and past Treasurer of the National Academy of Forensic Engineers (NAFE), an affiliate of the National Society of Professional Engineers (NSPE). He is a Registered Professional Engineer in Colorado and other states. Dr. Grantham is the Owner and Principal Investigator at Welding & Joining Management Group, an independent metals/weld testing laboratory. Since 1978, he has specialized in welding code consulting and contract compliance, welding process applications, forensic investigations of weld regions, failure analysis of weld regions, welding metallurgy, underwater welding, and welding inspection and testing for onshore oil, gas and mining industry and offshore equipment in marine environments. He is also an active author and teacher.
2021 PAPER  |  WARREN F. SAVAGE MEMORIAL AWARD

This award is endowed by former associates of Professor Warren F. Savage to honor his dedication and accomplishments in the field of welding metallurgy. This award recognizes the paper published in the Research Supplement of the Welding Journal during the previous calendar year that best represents innovative research resulting in a better understanding of the metallurgical principles related to welding.

Recipients of award:

Cieslak, M. J. (1990)  
Frank, R. B. (1990)  
Headley, T. J. (1990)  
Koo, H-H (1993)  
Yoshimoto, O. (1995)  
Radhakrishnan, B. (1996)  
Thompson, R. G. (1996)  
Itsukaichi, T. (1997)  
O’Kane, I. (1997)  
Kotecki, D. J. (2001)  
Butler, D. J. (2003)  
Headley, T. J. (2004)  
Robino, C. V. (2005)  
Mizia, R. E. (2005)  
Cao, G. (2006)  
Andrén, H-O (2007)  
Yang, Y. (2008)  
Yang, Y. (2009)  
Dong, H. (2009)  
Cao, H. (2009)  
Chang, Y. A. (2009)  
Kou, S. (2009)  
Caron, J. L. (2011)  
Heinze, C. (2011)  
Schwenk, C. (2011)  
Rethmeier, M. (2011)  
Babu, S. S. (2011)  
Lippold, J. C. (2011)  
Limmaneevichitr, C. (2012)  
Wei, P-S (2012)  
Yue, X. (2013)  
Alexandrov, B. T. (2013)  
Babu, S. S. (2013)  
Caron, J. L. (2014)  
Babu, S. S. (2014)  
Lippold, J. C. (2014)  
Bundy, J. (2015)  
Najafabadi, H. I. (2015)  
Lippold, J. C. (2016)  
Lienert, T. J. (2017)  
Liu, S. (2017)  
Tate, S. B. (2017)  
Kannan, R. (2018)  
Li, L. (2018)  
Wang, Y. (2018)  
Zhang, L. (2018)  
DuPont, J. (2019)  
DuPont, J. N. (2020)  
Kant, R. (2020)  
Alexandrov, B. T. (2021)  
Fink, C. (2021)  
Penso, J. A. (2021)  
Wang, H. (2021)
“SILICATE ISLAND FORMATION IN GAS METAL ARC WELDING”

RICHARD DERRIEN started his professional career at Air Liquide as an R&D Engineer after a master in science at the Colorado School of Mines. Between 2011 and 2014, he mainly worked for research projects aiming to develop welding consumables, from the design up to the realization and associated tests. From 2014, he was involved in new R&D projects linked to the welding process itself rather than the welding consumable. It was a great opportunity for him to develop his welding knowledge especially on the definition of welding procedures and effects of shielding gasses in welding. With the emergence of additive manufacturing topics and based on these strong welding expertises, Richard had the chance to work on WAAM subjects which allowed him to gather a lot of knowledge on the subject at the beginning of the development of the technology in Europe. Richard had therefore gained competences in the WAAM process by following different research projects linked with this technology where he works as a welding and welding gas expert.

DR. STEPHEN LIU currently holds the title of Professor Emeritus and Research Professor in Metallurgical & Materials Engineering at the Colorado School of Mines. He is Director Emeritus for both the Center for Welding, Joining and Coatings Research and the NSF-Manufacturing & Materials Joining Innovation Center Mines Site. With a three decade long, vigorous research program in brazing, soldering, welding and additive manufacturing, Professor Liu has actively participated in AWS, ASM, ASME and IIW activities. For his over 400 technical publications and reports and active involvement in the different professional societies, Prof. Liu has received many prestigious honors. In 2015, Prof. Liu was honored with the prominent Fulbright Distinguished Chair in Oil and Gas Award. Also in 2015, Prof. Liu was the inaugural American Bureau of Shipping Endowed Chair at Colorado School of Mines. Throughout his career, Prof. Liu has received the Comfort A. Adams Lecturer Award, Warren Savage Memorial Award, William Spraragen Award, Charles Jennings Award, McKay-Helm Award, Robert Peaslee Brazing Award, Honorary Membership Award, Plummer Education Lecture Award, Adams Memorial Membership Award, and International Meritorious Award from the American Welding Society. Prof. Liu has received from the International Institute of Welding the Jaeger Lecture Award, Halil Kaya Gedik Award and the most prestigious Yoshiaki Arata Award. Prof. Liu was also the recipient of the Ralph Teetor Award from the Society of Automotive Engineering (SAE). Dr. Stephen Liu holds five fellowships, FAWS from the American Welding Society, FASME from the American Society of Mechanical Engineers, FASM from ASM International, FIMMM from the Institute of Materials, Metallurgy & Mining, and FIIW from the International Institute of Welding.
DR. ETHAN M. SULLIVAN received his bachelors in Nanosystems Engineering from Louisiana Tech University in 2017 and went on to pursue a PhD in Metallurgical and Materials Engineering at Colorado School of Mines. There he researched laser- and electron-beam additive manufacturing of aluminum metal matrix composites formed by reaction synthesis for the production of aerospace components including microstructural and mechanical property characterization. His PhD work was sponsored by NASA, the National Institute of Aerospace, and the NSF IUCRC consortium Ma2JIC. He received his PhD in 2021 and is currently a postdoctoral researcher at KTH Royal Institute of Technology in Sweden, where he is researching electron beam-powder bed fusion of hot-work tool steels and copper.

FRANCIS BRIAND works at Air Liquide.

ELODIE MOINE works at Air Liquide.
## 2021 PAPER | WILLIAM SPRARAGEN MEMORIAL AWARD

This award is sponsored by the American Welding Society and honors William Spraragen, a founding member of the Society and the first Editor of the Welding Journal, serving from 1922 to 1954. It is presented for the best paper published in the Research Supplement section of the Welding Journal during the previous calendar year.

**Recipients of award:**

<table>
<thead>
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<th>Year</th>
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<td>Aidun, D. K.</td>
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</table>
ALEJANDRO HINTZE CESARO started his studies at the University of Buenos Aires, Mechanical Engineering school, to rapidly apply, in 2012, to an elite program in Materials Science Engineering at the Instituto Sabato, in the National Commission of Atomic Energy (CNEA) in Buenos Aires, Argentina. In 2016, he finished his bachelor’s degree in Materials Science specially focused in Metallurgy. Immediately after his bachelor’s, he continued his studies as an MS student at the same institution. In 2017, he had the unique opportunity to start his Ph.D. program at the Canadian Centre for Welding and Joining (CCWJ) at the University of Alberta (UofA). In 2022, while finishing the Ph.D. program at UofA, he joined EVRAZ North America as a welding research engineer in the Research & Development department.

PROFESSOR PATRICIO F. MENDEZ is the Weldco/Industry Chair in Welding and Joining and Director of Canadian Centre for Welding and Joining at University of Alberta. His teaching and research focus on physics and mathematics of welding and materials processing, including heat transfer, magnetohydrodynamics, arc plasma, thermodynamics, and kinetics. Applications include wear protection for mining, and oil extraction, alloy development, procedure development, new welding processes such as laser cladding, casting, solidification, and direct metal additive manufacturing using semi-solid processing. Before joining the University of Alberta in January 2009, he taught and researched at the Colorado School of Mines. Before that, he was a consulting engineer at Exponent Inc. In 1995 Dr. Mendez co-founded Semi-Solid Technologies Inc. in Cambridge, MA. Prof. Mendez holds a Ph.D. and a M.S. degree in Materials Engineering MIT, and a Mechanical Engineer degree from the University of Buenos Aires. He is a Fellow of the AWS and the CWA. Awards include, UofA Outstanding Mentorship in Undergraduate Research, AWS William Irrgang Award, IIW Kenneth Easterling Award, the ASM Brian Ives Award, the NSF CAREER Award, the MIT Rocca Fellowship, and UBA Research Fellowship. He has 88 indexed publications and 9 patents.
AWS NATIONAL AWARD WINNERS

R. D. THOMAS MEMORIAL AWARD

This award was originally sponsored by the Arcos Co. and its president, R. D. Thomas, Jr. It honors the late R. D. Thomas, an AWS charter member and the AWS Representative to the first organization meeting of the International Institute of Welding (IIW). This award is presented to a member of the American Council of IIW or to an AWS member who has made a substantial contribution to the activities of the IIW.

Recipients of award:

- Culbertson, R. P. (1992)
- Fink, D. A. (1999)
- Rabinkin, A. (2000)
- Prager, M. (2002)
- Dong, P. (2005)
- Shaw, Jr., R. E. (2007)
- Milewski, J. (2011)
- Miller, D. R. (2016)
- Grewell, D. (2021)

DR. STEPHEN LIU currently holds the title of Professor Emeritus and Research Professor in Metallurgical & Materials Engineering at the Colorado School of Mines. He is Director Emeritus for both the Center for Welding, Joining and Coatings Research and the NSF-Manufacturing & Materials Joining Innovation Center Mines Site. With a three decade long, vigorous research program in brazing, soldering, welding and additive manufacturing, Professor Liu has actively participated in AWS, ASM, ASME and IIW activities. For his over 400 technical publications and reports and active involvement in the different professional societies, Prof. Liu has received many prestigious honors. In 2015, Prof. Liu was honored with the prominent Fulbright Distinguished Chair in Oil and Gas Award. Also in 2015, Prof. Liu was the inaugural American Bureau of Shipping Endowed Chair at Colorado School of Mines. Throughout his career, Prof. Liu has received the Comfort A. Adams Lecturer Award, Warren Savage Memorial Award, William Spraragen Award, Charles Jennings Award, McKay-Helm Award, Robert Peaslee Brazing Award, Honorary Membership Award, Plummer Education Lecture Award, Adams Memorial Membership Award, and International Meritorious Award from the American Welding Society. Prof. Liu has received from the International Institute of Welding the Jaeger Lecture Award, Halil Kaya Gedik Award and the most prestigious Yoshiaki Arata Award. Prof. Liu was also the recipient of the Ralph Teetor Award from the Society of Automotive Engineering (SAE). Dr. Stephen Liu holds five fellowships, FAWS from the American Welding Society, FASME from the American Society of Mechanical Engineers, FASM from ASM International, FIMMM from the Institute of Materials, Metallurgy & Mining, and FIW from the International Institute of Welding.
ELIHU THOMSON RESISTANCE WELDING AWARD

This award is sponsored by the Resistance Welding Manufacturing Alliance and was established in conjunction with the 100th anniversary of the invention of resistance welding. This award is presented for an outstanding contribution to the technology and application of resistance welding, including equipment innovations, unique applications in production, a paper published in the Welding Journal or other prestigious publication, or other activity of merit.

Recipients of award:

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<tr>
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<tr>
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<td>Wei, P. S.</td>
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</table>

MENACHEM KIMCHI is an associate professor in the Department of Material Science & Engineering, Welding Engineering Program at The Ohio State University. He worked on Resistance Welding process development projects most of his career. Previously, Menachem was a principal research engineer, technology leader, and business development manager for EWI. Menachem has been involved extensively with development projects for the Automotive and Steel industries and published over 100 technical papers in area of Resistance and Solid State Welding processes of advanced materials. Currently he is teaching the Non-arc welding processes course and the Advance Resistance Welding course at OSU. He has been a part of the AWS C1.1 and D8.9 committees, and also served as the AWS delegate to IIW Commission III for many years. Recently Menachem coauthored and published the book “Resistance Spot Welding - Fundamentals and Applications for the Automotive Industry.”
AWS NATIONAL AWARD WINNERS

GEORGE E. WILLIS AWARD

This award is sponsored by The Lincoln Electric Company to honor George E. Willis. It is presented to an individual for promoting the advancement of welding internationally, by fostering cooperative participation in areas such as technology transfer, standards rationalization, and promotion of industrial good will.

Recipients of award:

- Thomas, Jr., R. D. (1992)
- Timerman, R. (1994)
- Kotecki, D. J. (1995)
- Kvidahl, L. G. (1997)
- Cable, Sr., H. E. (2004)
- Tsai, C-L (2008)
- Scotchmer, N. (2010)
- Sindel, A. W. (2011)
- Chin, B. A. (2012)
- Bernasek, M. (2014)
- Perdomo, J. J. (2017)
- Davis, A. (2018)
- No presentation (2019)
- Melfi, T. (2020)
- Henson, R. M. (2021)

DONALD DECORTE graduated from RETS Electronics School in Detroit as a Certified Electronic Technician. He is also an AWS-CRWT (Certified Resistance Welding Technician). He has spent the last 43 years working in all aspects of the resistance welding industry. He worked as an Electronic Service Technician, Service Manager, Application Engineer, Field Sales Engineer, Sales Director, Sales V.P., Marketing Director, and Owner/Partner over the same 43 years. He joined the AWS at the age of 19, in Oct. 1980. Through the encouragement of several awesome members/mentors in the Detroit Section, Don worked his way up, eventually becoming AWS Detroit Section Chairman in 2005. Don was nominated and voted onto the AWS National Board in 2009 as an AWS Director at Large. Don has also participated in numerous AWS and RWMA committee’s including the AWS CRWT development committee and RWMA Chairman 2020/21. Over his career, Don traveled extensively across the USA and 41 other countries. During his “worldly” travels Don has constantly spread goodwill on behalf of the welding industry. He has trained over 3,000 individuals in various aspects of resistance welding. He has recruited hundreds of individuals to take part in the welding industry and recruited many to join the AWS and the RWMA. He also served as an international liaison on behalf of the AWS in several different capacities when called upon to do so. Don continues to work part time as a strategic consultant and technical trainer for RoMan Mfg. Inc. and also offers independent consulting to other welding companies worldwide.
The American Welding Society is the worldwide authority in the development of standards, certifications and educational programming for the welding community. We are committed to connecting the welding industry to our extensive collection of resources, informing our members of technological advancements, and developing the next generation of welding professionals.