Q&A WITH CHAIRMAN GLENN S. DAEHN

TAKing INTO account aLl of tHe FounDaTion’S wOrk in 2019, wHeT are y ou mOST pRoUD oF, sPecIfically?

I am proud that our programming continues to grow in quality, scale and influence. There are so many important elements, driven by our awesome full-time staff, that contribute to this. Probably most visible of the events over the last year is our 20th Anniversary of the Eisenman Materials Camp. Many influential practicing professionals have been trained and motivated by this program. Our tremendous public celebration was a fitting tribute to this great program.

What excites you most about the Foundation’s future? And in what ways does the Foundation continue to build a sustainable organization?

The Foundation’s most important asset is the small army of committed, talented and passionate allies that we have developed. Our Master Teachers are the most visible and critical part of this. Our volunteers and allies develop, vet and deliver our content to other teachers and to students. Through these mechanisms we influence literally millions of students every year. This leads to more students enrolling in the full spectrum of STEM careers, from engineering students to those learning essential skills in community colleges. In the coming years we hope to deepen our engagement with all our stakeholders through improved content and enhanced ability for remote engagement.

WHy, in yoUr MInd, iS tHe FounDaTion’S MiSSion SO criticaL?

In 2020, the COVID-19 pandemic has shown the importance of nations being able to produce what they need including advanced fabrics for personal protective equipment, ventilators or drugs and their precursors. This self-reliance starts with the talented people who can develop materials, optimize processes and build the industries of today and tomorrow. Because of its scale and demonstrated impact, the ASM Materials Education Foundation’s Materials Camp® for Teachers is arguably the most effective program going to engage the next generation in these important areas.

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2019 HIGHLIGHTS

ENDOWMENT FOR SMST FOUNDERS’ GRANT FOR EXPLORATORY RESEARCH

One of the shape memory alloy pioneers and a founder of the International Organization on Shape Memory and Superelastic Technologies (SMST) has given back to help the next generation of researchers advance the industry. Thomas W. Duerig endowed the SMST Founders’ Grant to support young researchers. Duerig is shown with his wife Jill at the 2019 ASM Awards Dinner, where he was inducted as a Fellow of ASM.

20TH EISENMAN MATERIALS CAMP CELEBRATED

2019 marked the 20th Eisenman Materials Camp and a special celebration was held. Past campers, mentors, board members and other donors were invited to celebrate at the Dome.

Many Eisenman campers from the past shared their memories:

“I was already set on entering Engineering as a career after school at the time I attended, but the discussions I was able to have with the facilitators have stuck with me to this day. The lessons and approaches to problem solving I learned there were used through my education and into the work I do now.”

“I was not sure exactly what science I wanted to go into as an adult. I am now positive that I want to go into Materials Engineering. I am so excited for my future and learning more about the subject I love.”

“Eisenman Materials Camp has allowed me to find a potential career major/path. Prior to this camp, I knew nothing about Materials Science and the opportunity available within the field. Now, I am looking to study Materials Science Engineering at the University of Pittsburgh.”
ASM MATERIALS CAMP® PROGRAM

MATERIALS CAMP® - TEACHERS
CUMULATIVE SINCE 2002

“10,000 TEACHERS ... 10 MILLION MINDS*”

11,412 TEACHERS ... 11.4 MILLION MINDS!


MATERIALS CAMP® - STUDENTS
CUMULATIVE SINCE 2000

“The ASM Materials Camp® was such a pleasant PD that allowed me to leave knowing I can implement some of the activities right away into my classroom. The enthusiasm of the Master Teachers was contagious and made learning new information seamless! I cannot express enough how great this camp was balanced, being education-focused and science-focused in a way that I feel benefited everyone who attended.”

- Materials Camp for Teachers Attendee
THE ASM MATERIALS EDUCATION FOUNDATION TOUCHE D MANY LIVES DURING THE PAST YEAR, IN THE FORM OF MATERIALS CAMPS, GRANTS, SCHOLARSHIPS AND GENEROUS DONATIONS. WHAT IMPACT MADE BY THE FOUNDATION IN 2019 ARE YOU MOST PROUD OF?

2019 was special as an opportunity to celebrate 20 years of the Eisenman Materials Camp and Materials Camp® program. This Camp is special because it is our flagship event, but also because it started all the rest that have grown into the many programs provided around the country each year. After 20 years, it is incredible to think of the number of professionals who have been touched and excited by the Materials Camp® programming. Having this celebration gave us an opportunity to hear from our past participants and where they are now. Truly inspiring!

HOW IS THE FOUNDATION POSITIONED TO HELP GROW K-12 STEM PROGRAMMING NATIONWIDE?

The ASM Foundation staff and board created strategic goals to expand the reach of the Foundation’s programming over the next five years. Much of our planning and new resources will be aimed at growing the Foundation’s footprint to reach more teachers and students, particularly in areas where we have not previously had Materials Camp® or other programs.

HOW CAN A FOUNDATION SUPPORTER OR DONOR GET MORE INVOLVED IN OUR MISSION?

We are always happy to hear from people interested in getting involved with the Foundation’s mission. In the coming months, we will be creating online packages that individuals can use with students as a classroom demonstration or at a local STEM or other event. Individuals are welcome to contact the Foundation office or their local chapter to see how they might get involved with local Materials Camp® activities, or those taking place at the Dome. Any opportunity to reach out to more students to share the excitement of Materials Science & Engineering is always welcome! Of course, we are also grateful for those who help to fund all of our work through personal, corporate, and Foundation donations!

HOW DO WE CONTINUE TO GET BOTH TEACHERS AND STUDENTS EXCITED ABOUT MATERIALS SCIENCE?

The way we get students and teachers excited about Materials Science is through the hands-on methods that we use to allow students to dig in and see for themselves rather than reading in a book or hearing a teacher talk about it. The other way is to show students and teachers that Materials Science is all around us, in our everyday lives. Once that message is out and students can see materials choices and processes throughout their houses and neighborhoods, the interest and excitement grows to learn more.

HOW DOES THE FOUNDATION WORK IN CONCERT WITH ASM INTERNATIONAL TO BUILD MATERIALS SCIENCE AWARENESS?

The ASM Foundation fits perfectly into the circle of membership life of an ASM International member. The Foundation provides educational programming for high school and college students to help them learn about and get excited by a career in the Materials Science & Engineering field. Throughout an individual member’s career and post-career, the Foundation is an excellent way to give back to the field and ensure that there will be new professionals entering. Both the Foundation and ASM International staff and boards understand the close connection of the organizations and consistently work to ensure cooperation and mutual benefit.
2019 AWARDS

2019 KISHOR M. KULKARNI DISTINGUISHED HIGH SCHOOL TEACHERS AWARD WINNER

MARGARET SHOWALTER, MATERIALS SCIENCE TEACHER
LA ACADEMIA DE ESPERANZA CHARTER SCHOOL, NEW MEXICO

After graduating from ASM Materials Camp®, Teachers herself, Margaret has been instrumental in developing and sustaining the Albuquerque ASM Materials Camp® since 2003. As a spin-off of ASM Materials Camp®, Margaret teamed with her colleagues to develop a novel standards-based chemistry course that draws on examples from the world of Materials Science. The course was initially adopted by five high schools in Albuquerque and stands as a model for a national curriculum initiative. Margaret’s involvement with ASM has radically changed the way she teaches traditional science. She integrates solid materials into her curriculum; her students learn about redox and reduction of metals from ore via raku pottery; her students learn about chemical and physical changes by casting metal instead of melting ice cubes. Margaret now teaches at a charter academy that focuses on a very at-risk student population — most of the students have failed out of, dropped out of, or been expelled from traditional schools. Among her proudest accomplishments is the recent design and implementation of a Maker Space at her current school. Largely through Margaret’s efforts, the school has acquired over $75,000 in tools and equipment for the space to train students on 3D printers, laser cutters, lost wax casting, and CNC routers.

2019 GEORGE A. ROBERTS AWARD WINNER

MR. ANDREW NYDAM

Mr. Andrew Nydam has 30 years of teaching in high school material science and community college automotive apprentice programs. Nydam has been an integral part of the development, adoption, and implementation of Material Science at the state and national level, beginning with the Department of Energy in 1986. Since retiring from Olympia High School in Olympia, Washington, Nydam has been active with ASM International, NACE International, ACS, Polymer Ambassadors, and numerous industry/higher education/STEM collaborations. Nydam has been a master instructor for Material Science instructors and week-long summer camps as well as hundreds of state and national presentation at conventions for science, STEM, industry, and education reform, as well as MSP (math, science, partnerships) and CORE+ (curriculum designed to blur the lines between shop, science, and math in a high school curriculum designed to develop technical employment skills).

2019 PACESETTER AWARD WINNER

THERMO-CALC SOFTWARE

Thermo-Calc Software is proud to support the ASM Materials Education Foundation and is honored to receive the 2019 ASM Pacesetter award. Since 2015, following a successful pilot program that commenced in 2012, Thermo-Calc Software has supported the ASM Materials Genome Toolkit Program Award which is partially supported by the NIST-funded Center for Hierarchical Materials Design (CHiMaD) as part of the national Materials Genome Initiative (MGI). This award, established by the ASM Materials Education Foundation and under a special arrangement with Thermo-Calc Software AB, is a competition open to U.S. undergraduate engineering programs to compete to receive licenses for the latest versions of Thermo-Calc, add-on modules and databases. This program has been instigated to promote science-based computational materials design and engineering in undergraduate curriculum.
2019 SCHOLARSHIP WINNERS

WILLIAM PARK
WOODSIDE FOUNDER’S
SCHOLARSHIP

MADILYN FESENMAIER
South Dakota School of Mines & Technology

THE LUCILLE AND CHARLES A. WERT
SCHOLARSHIP

HO LUN CHAN
California State Polytechnic University, Pomona

DAVID J. CHELLMAN
SCHOLARSHIP

ANNA PARK
Carnegie Mellon University

EDWARD J. DULIS
SCHOLARSHIP

RAMON PADIN-MONROIG
University of Puerto Rico, Mayaguez

GEORGE A. ROBERTS SCHOLARSHIPS

ANASTASIA JULY
University of Pittsburgh

EMILY PROEHL
University of Wisconsin-Madison

ALYSEN TOWNSLEY
University of Alberta

WILLIAM WELCH
University of California-Los Angeles

ACTA MATERIALIA SCHOLARSHIPS

SIMON MUNYAN
Penn State University

NATALIE WIEBER
University of Tennessee Knoxville

WALKER SILHA
University of Wisconsin-Madison

LADISH CO. FOUNDATION SCHOLARSHIPS

BAILY SYRING
University of Wisconsin-Madison

OUTSTANDING SCHOLAR AWARDS

WILLIAM CARPENTER
South Dakota School of Mines & Technology

JESSIE SCHWEITZER
Washington State University

XUEQIAO WANG
Georgia Institute of Technology

JOHN M. HANIAK
SCHOLARSHIP

ELIZABETH MOROZ
Drexel University
**2019 UNDERGRADUATE DESIGN COMPETITION**

**DESIGN** is a critical component for the much needed revitalization of engineering in materials education.

**THE COMPETITION** encourages the strengthening of design curricula in Materials Science and Engineering departments; the ASM Materials Education Foundation through its Action in Education Committee, introduced the Undergraduate Design Competition.

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**1. “COBALT REDUCTION IN TRIBALOY T-400”**

**FIRST PRIZE:** $2,000.00 + $ 500 travel assistance + $ 500 to the department for support of future design teams

**WINNER:** Michigan Technological University

**TEAM MEMBERS:** Kyle Hrubecky, Lucas Itchue, Jacob Thompson, and Erin VanDusen

**FACULTY ADVISORS:** Dr. Walt Milligan and Dr. Paul Sanders

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**2. “DESIGNING MICROSCALE TESTS TO VALIDATE MACROSCALE PLASTIC RESPONSE IN CUBIC (AL) AND HEXAGONAL (MG) LIGHTWEIGHT METALS”**

**SECOND PRIZE:** $1,500.00 + $ 500 travel assistance

**WINNER:** University of Nevada-Reno

**TEAM MEMBERS:** Skye Supakul, Tolin Skov-Black, Keenan O’Neil, Job Rodriguez, Scout Garrison, and Josiah Dowell

**FACULTY ADVISOR:** Dr. Siddhartha Pathak

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**3. “CORROSION STUDIES OF OPEN-CELL ALUMINUM 6101 FOAMS IN SIMULATED MARINE ENVIRONMENTS”**

**THIRD PRIZE:** $1,000.00 + $ 500 travel assistance

**WINNER:** California State Polytechnic University, Pomona

**TEAM MEMBERS:** Ho Lun Chan and Kevin Guo

**FACULTY ADVISOR:** Dr. Vilupanur A. Ravi

---

“My memories of these past 20 years are filled with moments of working together with exceptional mentors and the staff at the Dome. I’ve seen Eisenman students finish their degrees in Materials Science and Engineering and go onto to successful careers and start families. My most memorable moments are from the first Camp where we were trying to figure out how we were going to do this.”

- Eisenman Materials Camp Mentor

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“The camp exceeded my expectations. The master teachers are excellent teachers! My fellow teachers were an inspiration to work with. I enjoyed learning new things and doing the labs. I look forward to doing more hands-on science with my students.”

- Materials Camp for Teachers Attendee

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“I’ve been teaching for over 30 years and found this camp to be very good at showing me different ways to do some things I have done before. One that stands out is the much-improved way (especially safety) for the bronzing of a penny and then also looking at things in a NEW and different way to introduce the world of materials to my students.”

- Materials Camp for Teachers Attendee
FINANCIALS

STATEMENT OF FINANCIAL POSITION (AUDITED)
DECEMBER 2019 & 2018

### ASSETS

<table>
<thead>
<tr>
<th>CURRENT ASSETS</th>
<th>2019</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>CASH AND SHORT-TERM INVESTMENTS</td>
<td>$10,674.45</td>
<td>$17,437.67</td>
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<tr>
<td>ACCOUNTS RECEIVABLE ¹</td>
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<tr>
<td>Receivables</td>
<td>$40,505</td>
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<tr>
<td>Prepaids</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Inventory</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL CURRENT ASSETS</td>
<td>$51,180</td>
<td>$123,698</td>
</tr>
</tbody>
</table>

| INVESTMENTS AT MARKET VALUE | | |
| CAMP 1 Funds (fixed interest) | $20,733.90 | $50,931   |
| Balance of Funds            | $14,645,725 | $11,047,273 |
| TOTAL PORTFOLIO AT MARKET VALUE ² | $14,666,456 | $11,098,204 |

| Debit Owed by ASMI ³ | 0 | 0 |
| Life Insurance Cash Surrender Value | $8,042 | $6,919 |

Fixed Assets - Fundraising Software

Accumulated Depreciation - Fundraising Software

**TOTAL ASSETS** | $14,725,681 | $11,228,821 |

### LIABILITIES & ASSETS

<table>
<thead>
<tr>
<th>CURRENT LIABILITIES</th>
<th>2019</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounts Payable and Accrued Expenses</td>
<td>$1,146</td>
<td>$19,489</td>
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<tr>
<td>Borrowings Under the Line of Credit</td>
<td>$460,707</td>
<td>$460,707</td>
</tr>
<tr>
<td>Deferred Revenue (Future Camps)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Debt Owed to ASMI ⁴</td>
<td>$892</td>
<td>$129,242</td>
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<tr>
<td>TOTAL CURRENT LIABILITIES</td>
<td>$462,744</td>
<td>$609,437</td>
</tr>
</tbody>
</table>

| LONG-TERM LIABILITIES | | |
| Long-Term Liabilities: | $67,882 | $58,054 |
| Deferred Interest Income | 0 | $6,049 |

| NET ASSETS | | |
| Unrestricted Net Assets | $365,594 | $1,131,744 |
| Operating | $2,032,700 | $86,075 |
| Unrealized gain (loss) on investments ⁵ | $2,282,269 | $675,194 |
| TOTAL UNRESTRICTED NET ASSETS | $4,680,564 | $1,893,013 |

| RESTRICTED NET ASSETS | | |
| Temporarily Restricted | $1,145,605 | $1,099,825 |
| Permanently Restricted (Adjusted) ⁶ | $2,071,287 | $1,008,521 |
| Board Designated Restricted | $6,297,599 | $6,553,921 |
| TOTAL RESTRICTED NET ASSETS | $9,514,491 | $8,662,267 |

**TOTAL NET ASSETS** | $14,195,055 | $10,555,279 |

**TOTAL LIABILITIES & NET ASSETS** | $14,725,681 | $11,228,821 |

### FOOTNOTES:

¹ Accruals of contributions and pledges.
² Market Value of the Investment Portfolio, variance to statement due to rounding.
³ ASMI debt to ASMMEF - See #4 and #5 below.
⁴ ASMMEF Debt to ASMI - Payments processed quarterly. Do not anticipate a balance here until after Summer Camp programs are complete.
⁵ This represents difference between market value and cost value of the investment portfolio reflecting the overall market growth in the portfolio.
⁶ Permanently Restricted Funds - Adjusted for Shortfalls
“Our instructors were absolutely awesome and their passion really came through making learning exciting and inspiring. This is how we keep students in the classroom and coming to school every day!”

- ASM Materials Camp for Teachers Attendee
### DIAMOND ($1 Million)
- ASM International
- Tom Duerig

### TITANIUM ($25,000+)
- Carpenter Technology Corp.
- Desert Sands School District
- Foundry Education Foundation
- The Keough Family Foundation
- NACE International Foundation
- Northwestern University, CHiMaD Project
- Henry M. Rowan Family Foundation

### PLANTINUM ($10,000+)
- ASM Materials Camp Canada
- Devon Brenner
- Case Western Reserve University
- Chevron
- Stephen Copley & Judith Todd
- Leigh Duncan
- Edouard Duval
- Forging Industry Educational
- James D. Graham
- George Gray III
- Griffiss Institute Inc.
- Ivy Tech Community College
- The Martha Holden Jennings Foundation
- David Kaplan
- Ladish Company Foundation
- Missouri University of Science and Technology
- Sandia National Laboratory
- University of Alabama

### GOLD ($5,000+)
- Chicago Regional Chapter
- Element Materials
- Technology Wixom Inc.
- Honda R & D
- Peggy E. Jones
- Don Lewon
- Julio G. Maldonado
- Nordson Corporation
- Pittsburgh Chapter
- QuesTek Innovations LLC
- Alton D. Romig, Jr.
- Larry Somrack
- St. Mary’s University
- Robert J. Torcolini
- The University of Akron

### SILVER ($1,000+)
- AIST
- American Chemet Corp.
- John V. Andrews
- Diran Apelian
- Aizil Asphahani
- Busch LLC
- Cargill Incorporated
- The Ceramic and Glass Industry Foundation
- Dianne Chong
- Craig D. Clauser
- Michael B. Connelly
- Corning Inc. Foundation
- John Drozdak
- Diana M. Essock
- Eaton Corporation
- Eurofins EAG Materials Science LLC
- David Furrer
- Thomas K. Glasgow
- Larry D. Hanke
- Sheila Harper
- Kathy L. Hayrynne
- Frauke Hogue
- International Symposium On Superalloys
- Rowdy L. Joseph
- Serope Kalpakjian
- Stephen L. Kampe
- Lee Knauss
- Edward H. Kottcamp Jr.
- David Krashes
- Kishor M. Kulkarni
- David E. Laughlin
- David K. Matlock
- Nicholas P. Milano
- Steven Milano
- Don Muzyka
- NACE New Orleans Section
- Andy Nydam
- Gregory B. Olson
- Lisa Oxendine
- Joe H. Payer
- Richard K. Pittler
- Pratt & Whitney
- Puget Sound Chapter
- Sue Redington
- Lyle H. Schwartz
- William Shropshire
- Daniel E. Sonon
- David Spencer
- Gerardo Valero
- George F. Vander Voort
- John H. Weber
- Carrie Wilson

### BRONZE ($500+)
- Rick Alexander
- Booz Allen Hamilton
- Glenn S. Daehn
- George E. Dieter
- Darcy A. Hughes
- Guiru Nash Liu
- Bhakta B. Rath
- Roch E. Shipleyn
- Mark F. Smith
- Lisa Haniak Surbey
- Paul W. Trester
- Timothy P. Williams

### STEEL ($100+)
- Dale E. Alexander
- Charles W. Allen
- John E. Allison
- Iver E. Anderson
- Kevin R. Anderson
- Thomas Auten
- Chris Bagnall
- Ian Baker
- Peter C. Bauerle
- Bezd B. Bavarian
- Veronica Becker
- Larry Berardinis
- John C. Bierlein
- James M. Boileau
- Gary Bray
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- James A. Clum
- Sunniva R. Collins
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- Jack Crane
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- Roberto Darocha
- Sheldon W. Dean
- Jeane Deatherage
- George E. Dieter
- Dennis Dimiduk
- Kate Doman
- Mary Anne Fleming
- James Foley
- Jude R. Fouls
- Anna C. Fraker
- William Frazier
- Robert L. Freed
- Jack B. Freeman
- Marc Fry
- Joseph P. Gallagher
- Laura Garfinkel
- William D. Gaw
- General Metal Heat Treating Incorporated
- Dale A. Gerard
- Anthony Giamei
- Jeffery C. Gibeling
- Paul S. Gilman
- Emily Glorioso
- Nicholas A. Gollmer
- Diane Goodman
- Michele Guzman
- William L. Hamm Jr.
- John C. Harkness
- Robert W. Hayes
- Thomas Henriksen
- Scott Henry
- John P. Hirth
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- Christine Hoover
- Gerald L. Houze
- Darcy A. Hughes
- Caryn Jackson
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- Mary Anne Jerson
- Henry G. Kammerer
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- John Keough
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- Gerald A. Knorovsky
- Steven E. Knudson
- Carl C. Koch
- L.D. Kramer
- Joan M Ladd
- Hannah Lin
WHO WE ARE

For over 65 years, the ASM Materials Education Foundation has been devoted to promoting Materials Science education and career opportunities to both students and teachers. The Foundation funds undergraduate scholarships and numerous educational outreach activities, supplies grants to teachers for classroom projects, and operates our signature program — ASM Materials Camp® for both students and teachers.

OUR MISSION

Develop and deploy materials science content and hands-on, minds-on, instructional strategies to inspire, engage, and empower future generations to create STEM solutions for 21st century challenges.

WHO WE IMPACT

Today, America faces a shortage of workers in highly skilled jobs, and that shortage is projected into the next ten years. The ASM Materials Education Foundation provides the base knowledge in STEM to illuminate career pathways, which address that projected shortfall in Materials Science & Engineering.