REBECCA TAYLOR JOINS IMSI BOARD OF DIRECTORS

Rebecca Taylor, Senior Vice President, NCMS

Intelligent Manufacturing Systems International, Inc. (IMSI) is pleased to announce that Rebecca Taylor of the National Center of Manufacturing Sciences (NCMS) has joined the IMSI Board of Directors.

The IMSI Board of Directors unanimously voted to extend an invitation to Ms. Taylor during the November 14, 2019 meeting.

The addition of Ms. Taylor to the IMSI board follows a strong relationship between IMSI and NCMS. In May, the two organizations signed a Memorandum of Understanding to help further the relationship between the two organizations and foster collaboration.

Ms. Taylor is the Senior Vice President of NCMS, the largest not for profit research and development consortium in North America focused on Manufacturing. In her role as Senior Vice President she is responsible for the operation of the organization’s government efforts, for liaison with Members of Congress and the Administration, oversight of all government programs, as well as overall management of the Washington, DC and Bremerton, WA offices. She also brings vast experience from previous time spent as an International Trade Analyst for the US Department of Commerce.

In addition to her role at NCMS, Ms. Taylor is on the Board of the National Advanced Mobility Consortium and is a member of the National Academy of Engineering Committee on Manufacturing, Design, and Innovation. She also serves on the Executive Committee of the National Defense Industrial Association’s Manufacturing Division, the NASA Marshall Partnership Forum Steering Council and the International Women’s Forum. Ms. Taylor is also a member the Advisory Board of the Commission on Innovation, Competitiveness and Economic Prosperity at the Association for Public and Land Grant Universities.

NCMS and IMSI recently collaborated for the World Manufacturing Forum Technical Day where Ms. Taylor and NCMS provided content through a keynote address on cybersecurity and moderated a panel on standards. Additionally, Ms. Taylor also served as an advisory board member for the 2019 World Manufacturing Forum Report.

Ms. Taylor’s participation in IMSI’s Board of Directors will help to provide great insight and leadership given her impressive contribution to the manufacturing community. She joins other manufacturing leaders Jack Harris (IMSI and Rockwell Collins), Dan Nagy (IMSI), Bill Mahoney (ASM International), Atul Kelkar (Clemson University), Robert Mansfield (USAF and Solomon Bruce Consulting), Dean Bartles (NCDMM), and Jack Todd (MARPAN) on the board.

The National Center for Manufacturing Sciences (NCMS) is a cross-industry technology development consortium, dedicated to improving the competitiveness and strength of the U.S. industrial base. As a member-based organization, it leverages its network of industry, government, and academia to develop, demonstrate, and transition innovative technologies efficiently, with less risk and lower cost. For more information on NCMS, visit www.ncms.org

IMSI CHAIR SPEAKS AT ASM GLOBAL MATERIALS SUMMIT

Jack Harris, Chair of IMSI, spoke at ASM’s global materials summit in Marco Island, Florida on December 3-5, 2019.

The ASM Global Materials Summit is a unique opportunity to connect with visionaries in the materials community in an interactive environment about the future of the materials world. This exclusive executive summit is open to FASMs and executives in the materials industry only, and will provide a platform for our distinguished leaders to have meaningful discussions and develop tangible solutions to the biggest challenges facing the materials community.

Mr. Harris spoke on a panel of experts at the summit. The panel focused on the current Materials 4.0 landscape and efforts and how Materials 4.0 aligns with the needs of Manufacturing 4.0. The panel was moderated by David Furrer, FASM, Senior Fellow Discipline Lead, Pratt & Whitney. Other panelists included: Ellen Cerreta, FASM, Deputy Division Leader for The Explosive Science and Shock Physics Division, Los Alamos...
National Laboratory; Lt. General Michael G. Dana
Director, Marine Corps Staff, United States Marine Corps; Anthony Dawson, Senior Director of Product Operations and General Manager, Materials Business Unit, ANSYS, Inc.; Frank W. Gayle, Deputy Director, Office of Advanced Manufacturing, National Institute of Standards and Technology; Amy Heintz, Technical Fellow, Materials Science, Battelle Memorial Institute; Nabil Nasr, Chief Executive Officer, REMADE Institute; Gregory Olson, FASM, Wilson-Cook Professor of Engineering, Northwestern University; QuesTek Innovations LLC; Linda Sapochak Division Director for the Division of Materials Research National Science Foundation; James Warren, FASM, Technical Program Director, Materials Genomics, Materials Measurement Laboratory, National Institute of Standards and Technology (NIST).

More information on ASM and the Global Materials Summit can be found at: https://www.asminternational.org/web/asm-global-materials-summit/event-info

CALL FOR ABSTRACTS FOR ASM IMAT 2020 CONFERENCE

ASM and IMSI will collaborate for the IMAT 2020 conference from September 14-17, 2020 in Cleveland, Ohio. IMAT 2020 is ASM’s re-imagined Annual Meeting. A diverse group of materials experts, including the ASM Programming Committees, AeroMat Committee, and all six of ASM’s Affiliate Societies, are heavily involved in building the technical symposiums, which will have a strong focus on application-oriented, real-world technologies that can be put to use today.

IMSI will organize a World Manufacturing Forum (WMF) Regional Technical event during the conference. Additionally, there will be a large technical program along with exhibition space.

Abstracts are being called for in the following areas by February 14, 2020: Additive Manufacturing; Characterization of Materials and Microstructure through Metallography, Image Analysis, and Mechanical Testing - Fundamental and Applied Studies; Corrosion and Environmental Degradation; Emerging Technologies; Failure Analysis; Functional Materials and Structures – Solving barriers to adoption; Joining of Advance and Specialty Materials (JASM XXII); Materials 4.0: Materials Information in the Product Life Cycle; Materials Behavior & Characterization; Materials for Energy & Utilities; Medical / Biomaterials: Driving for delivered patient value; Materials & Processes for Automation; Metals, Ceramics and Composite Materials (raw materials, processing, manufacturing methods, applications, environmental effects); Processing and Applications; PSDK XV: Phase Stability and Diffusion Kinetics; Sustainable Materials & Processes.

To submit an abstract and learn more about IMAT 2020 please visit: https://www.asminternational.org/web/imat/cfp

IMSI AT CAM-I TEMPE, ARIZONA MEETING

Dan Nagy, Managing Director of IMSI, spoke at the CAM-I Tempe, Arizona meeting on Tuesday December 10, 2019. Mr. Nagy presented information on IMSI and the World Manufacturing Forum along with opportunities for involvement and outcomes of the 2019 WMF Technical Day. CAM-I is a partner under the IMSI ManuVation Program and specializes in Manufacturing costing and development for SMEs. To learn more about CAM-I please visit: https://www.cam-i.org/
UPCOMING EVENTS

May 4-6, 2020: AeroMat 2020
Palm Springs, California
For more information please visit: https://www.asminternational.org/

September 14-17, 2020: IMAT 2020
Cleveland, Ohio
For more information please visit: https://www.asminternational.org/

MANUFACTURING NEWS

Why U.S. manufacturing and services are moving further apart

(Axios -- Dion Rabouin 1-8-2020) While U.S. manufacturing has fallen into its deepest hole in a decade, the all-important services sector keeps chugging along.

What's happening: The Institute for Supply Management's gauge of the U.S. services sector yesterday produced a reading solidly in expansionary territory and above expectations. That was a far cry from the company's manufacturing index, which last week hit its weakest level since June 2009. The gap between the two indexes in December was the largest since November 2015 and the third largest differential in a decade, ISM data show.

Why it matters: The manufacturing industry is typically thought of as a leading economic indicator, and a sustained downturn in the sector has historically presaged turmoil and even recession. However, that does not look to be the case right now, ISM CEO Tom Derry tells Axios. What they're saying: "If we were having this conversation in 1965, it would’ve been a much more serious concern," Derry says of the low manufacturing numbers.

Looking Into the Crystal Ball for Manufacturing Tech

(Industry Week-- Peter Fretty 1-8-2020) In the new digital economy, technology touches every aspect of manufacturing from design, production, sales and service. And with each evolution or truly new innovation, manufacturers need to make strategic decision whether or not it is time to embrace what technology offers to remain competitive. As a result, manufacturers need to constantly keep their fingers on the pulse of technology -- even if the immediate goal is to make a determination between a real trend and hype.

How artificial intelligence is disrupting manufacturing

(Supply Chain Dive—Filemon Schöffer 1-7-2020) Rather than constantly innovating over the last half century, parts manufacturing fell into complacency, sidestepping rather than moving forwards. As a result, the sector is struggling to keep up with the rapid pace of digital transformation. With the growth of Industry 4.0 technologies, sluggish and inefficient traditional manufacturers are feeling the pinch; innovate or risk becoming outdated. This is accentuated by the speed at which digital manufacturing is growing.

5 MANUFACTURING TRENDS TO WATCH IN 2020

(Association of Equipment Manufacturers—1-2-2020) Both the immediate and long-term future of the manufacturing industry will be defined by the development of several ever-evolving and cutting-edge trends and technologies. Many of these trends and technologies are poised to have a significant impact in 2020 and beyond, so it’s critically important for manufacturers to develop a keen understanding of what they are, how they will grow over time, and how they will impact those within the industry – both this year and in the future.
Fiat Chrysler and Peugeot to Merge into $46 Billion Automaker

(Bloomberg -- Tommaso Ebhardt, Ania Nussbaum and Daniele Lepido: 12-18-19) PSA Group and Fiat Chrysler Automobiles NV agreed to combine in a deal that will create the world’s fourth-biggest auto manufacturer. The French and Italo-American carmakers signed a binding accord for a 50-50 merger of their businesses, they said Wednesday. The combined company will be led by PSA Chief Executive Officer Carlos Tavares with Fiat Chairman John Elkann holding the same role at the enlarged firm. The merger would forge a regional powerhouse to rival Germany’s Volkswagen AG and have a stock-market value of about $47 billion, surpassing Ford Motor Co. The tie-up also brings together two carmaking dynasties -- the billionaire Agnelli clan of Italy led by Elkann, and the Peugeots of France. The deal will give Peugeot-maker PSA a long-sought presence in North America and should help Fiat gain ground in developing low-emission technology where it’s lagged rivals. Yet the company will still be heavily reliant on Europe’s saturated auto market, and poorly positioned in China, the world’s largest country for car sales.

Ford's Wayne and Dearborn Plants Get $1.45 Billion in New Tech

(IW – Laura Putre: 12-17-19) The only thing better than a plant investment to spice up the holidays? Two new (and futuristic) plant investments. Ford announced today that it would invest a total of $1.45 billion in two Southeast Michigan plants and create 3,000 union production jobs. The investment will go toward production of new hybrid and electric vehicles, a new electric battery assembly facility and a facility to modify Ford Bronco and Ranger trucks and SUV’s with self-driving technology and interiors compatible with autonomous driving. At its Wayne, Michigan assembly plant, Ford will invest $750 million in production equipment and an autonomous modification center and add 2,700 jobs over the next three years. The Wayne center “will be the first of its kind for Ford and will drive synergies with the company’s existing AV research functions in Dearborn and Detroit,” a Ford press release stated. At its Dearborn truck plant, which manufacturers F-150 and Raptor trucks, Ford will add 300 jobs and invest $700 million to manufacture electrified F-150s—both hybrids and full electric models. The investment includes a new facility to assemble battery cells into battery packs for the electrified vehicles.

Accountability is the Key to Ethical Artificial Intelligence

(CompterWeekly.com -- Sebastian Klovig Skelton: 12-16-19) Artificial intelligence (AI) needs to be more accountable but ethical considerations are not keeping pace with the technology’s rate of deployment, says a panel of experts. This is partly due to the “black box” nature of AI, whereby it’s almost impossible to determine how or why an AI makes the decisions it does as well as the complexities of creating an “unbiased” AI. However, according to panelists at the Bristol Technology Showcase, transparency is not enough, with greater accountability being the key to solving many of the ethical issues surrounding AI. “Meaningful transparency doesn’t simply follow from doing things like open sourcing the code, that’s not sufficient,” says Eamonn O’Neill, professor of computer science at the University of Bath. “Code and deep learning networks can be opaque however hard you try to open them to inspection. How does seeing a million lines of code help you understand what your smartphone’s mid-ware is doing? Probably not a lot.” O’Neill says that AI needs to be accompanied by a chain of accountability that holds the systems human operator responsible for the decisions of the algorithm.

Fewer Students Are Going to College … Here's Why That Matters

(NPR -- Elissa Nadworny and Max Larkin: 12-16-19) This fall, there were nearly 250,000 fewer students enrolled in college than a year ago, according to new numbers out Monday from the National Student Clearinghouse Research Center, which tracks college enrollment by student. "That's a lot of students that we're losing," says Doug Shapiro, who leads the research center at the Clearinghouse. And this year isn't the first time this has happened. Over the past eight years, college enrollment nationwide has fallen about 11%. Every sector — public state schools, community colleges, for-profits and private liberal arts schools — has felt the decline, though it has been especially painful for small private colleges, where, in some cases, institutions have been forced to close. "We're in a crisis right now, and it's a complicated one," says Angel Pérez, who oversees
enrollment at Trinity College in Hartford, CT. The biggest factor for the years of decline is the strong economy. The last time U.S. college enrollment went up was 2011 at the end of the recession. As the economy gets better, unemployment goes down — it's currently at 3.5% — and more people leave college or postpone it and head to work.

**ISM Forecasts Manufacturing to Expand in 2020**

(SME -- Bill Koenig: 12-11-19) Manufacturing should expand in the first half of 2020, including increased revenue for companies, the Institute for Supply Management said this week in a semi-annual forecast. “We think 2020 half-one going into half-two will be a better economic situation” than the second half of 2019, Timothy R. Fiore, chair of ISM’s Manufacturing Business Survey Committee, said on a Dec. 9 conference call. The forecast is based on a survey of purchasing and supply executives across 18 manufacturing industries. It’s the same group that ISM surveys when compiling its monthly manufacturing index. That index, known as the PMI, has indicated the manufacturing economy contracted for four straight months through November. However, the forecast for 2020 was more upbeat. The executives expect overall 2020 revenues to rise an average of 4.8 percent with increases spread across all 18 industries. Respondents also expect that growth will continue in the second half of 2020, Fiore said. “We think we’re going to have a fairly stable year at fairly moderate growth compared to the last three years,” he said. However, part of the forecast reflected some softening in the manufacturing economy.

**Taking Your AI Projects from Pilot to Production**

(IW – Greg Diamos: 12-10-19) The rise of AI has made it possible for automated visual inspection systems to identify anomalies in manufactured products with high accuracy. If implemented successfully, these systems can greatly improve quality control and optimize costs. Although many manufacturers try to implement such systems into their workflow, few manage to reach full-scale production. The disconnect occurs because proof of concept solutions are put together in a controlled setting, largely by trial and error. However, when pushed into the real world with real-world constraints like variable environmental conditions, real-time requirements, and integrations with existing workflows, proof of concept often breaks down. In a 2019 white paper, the Institute for Analytics estimates that less than 10% of AI pilot projects reach full-scale production. After multiple customer engagements, we have identified six practices that can help your machine learning projects succeed. Data is crucial for any AI project so be ready to collect a first version of the dataset, then iterate rapidly since the first version will never be perfect. Remember that the more diverse and closer to the real operative conditions your data is, the larger the chances of your project’s success will be.

**American Factories Demand White-Collar Education for Blue-Collar Work**

(WSJ – Austen Hufford: 12-9-19) College-educated workers are taking over the our factory floors. New manufacturing jobs that require more advanced skills are driving up the education level of factory workers who in past generations could get by without higher education, an analysis of federal data by The Wall Street Journal found. Within the next three years, U.S. manufacturers will be on track to employ more college graduates than workers with a high-school education or less, part of a shift toward automation that has increased factory output, opened the door to more women and reduced prospects for lower-skilled workers. “You used to do stuff by hand,” said Erik Hurst, an economics professor at the University of Chicago. “Now, we need workers who can manage the machines.” U.S. manufacturers have added more than a million jobs since the recession with the growth going to men and women with degrees, the Journal found. Over the same time, manufacturers employed fewer people with a high-school diploma. Employment in manufacturing jobs that require the most complex problem-solving skills such as industrial engineers grew 10% between 2012 and 2018; jobs requiring the least declined 3%.

**MANUFACTURING FACT OF THE MONTH**

*There are over 12 million manufacturing workers in the U.S. accounting for 9% of the workforce.*

Additionally, each manufacturing job supports nearly three other jobs in the economy. In this sense, those 12 million manufacturing jobs are actually supporting a huge portion of the total U.S. workforce.

(Source: Supply Chain 247 and Economic Policy Institute)
For more information on IMS and its services please contact...

Dan Nagy, Managing Director • mobile: +1 913-461-4532 • e-mail: dnagy@ims.org
Jack Harris, IMS ISC Chairman • e-mail: jack.harris@ims.org

Intelligent Manufacturing Systems • IMS Inter-Regional Secretariat
4601 North Fairfax Drive, Suite 1200 • Arlington, VA 22203 USA • website: www.ims.org

Please refer to www.ims.org for a current listing of contact information for all IMS global representatives and IMS projects.