



CIVS Newsletter

April 2025

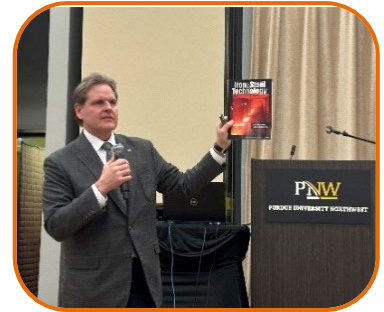
"Where Ideas Become Reality"

Issue 39



Ashburn's Keynote Highlights the Steel Industry Future at PNW

On April 9, Ron Ashburn, Executive Director of the Association for Iron and Steel Technology, delivered a compelling keynote on *"The Iron and Steel Roadmap"* at the SMSVC Meeting dinner, which was followed by a lively Q&A session with over 80 attendees. "Ron emphasized the needs for steel to embrace and adopt new technologies to set the industry on the right path for decades to come. Our industry must also encourage and support those engineers who will help usher in the next steel era." said John Lowry, Melt/Cast Metallurgist, Nucor Steel [Read More...](#)



CIVS
CENTER FOR INNOVATION THROUGH
VISUALIZATION & SIMULATION

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Dr. Sara Hornby Delivered Award-Winning AIST Lecture at CIVS

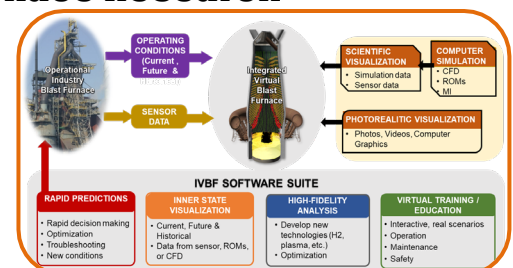


On April 8, around 150 people gathered at CIVS for Dr. Sara Hornby's lecture on *"The Green Steel Revolution"*. Dr. Hornby is the 2024 recipient of the AIST John F. Elliott Lecture Award. "Dr. Hornby's talk was an insightful overview of the many approaches to advanced steelmaking. From modernizations and improvements to existing technologies to fill the interim through advanced new processes that promise improved efficiency." [Read More...](#)



9th Best Paper Award for CIVS Blast Furnace Research

CIVS Blast Furnace research received the 2025 AIST Josef S. Kapitan Award – Ironmaking for the paper titled *"The Integrated Virtual Blast Furnace: Enabling Physics-Based Operational Guidance."* This is the 9th best paper received in the last 20 years in this research topic. [Read More...](#)



Dr. Okosun Awardee of Purdue's Researcher Recognition Program

Congratulations to CIVS Associate Director for Research, Tyamo Okosun, for being a 2025 awardee of Purdue University's Researcher Recognition Program. He was awarded as the Principal Investigator for \$7.2 million project on "Technical Development and Industrial Demonstration of Net-Zero Carbon EAF Steelmaking with Alternative Injection and Stirring Technologies" funded by DOE Office of Energy Efficiency and Renewable Energy. [Read More...](#)



Dr. Zhou Had a Productive Trip to Taiwan

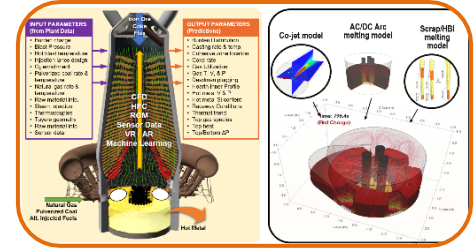


CIVS Director Chenn Zhou was invited to visit Taiwan for Keynote and other technical presentations for steelmaking process simulation and visualization. During the trip, potential collaboration opportunities on research and education were discussed. She was very impressed by the steel research activities and roadmaps in Taiwan. [Read More...](#)



Keynote Presentation on BF & EAF at AIST Ohio Valley Chapter

CIVS Associate Director for Research Tyamo Okosun and CIVS Research Scientist Orlando Ugarte were invited to present a Keynote on Blast Furnace and EAF research at the AIST Ohio Valley Member Chapter Dinner Meeting in Florence, IN. [Read More...](#)



CIVS Director Presents at AIST and TMS Conferences

CIVS Director Chenn Zhou gave a lecture at the AIST Steel Mill Combustion and Thermal Systems Training course. [Read More...](#)

She also presented 2 papers on Secondary Lead Reverberatory Furnace and Continuous Casting at TMS 2025 Annual Meeting & Exhibition. [Read More...](#)



VR-FUTURES Presented at a NWI Summit

"Virtual Reality For Understanding Trauma and Utilizing Regulation When Experiencing Stress (VR-FUTURES)" was presented by CIVS Senior Research Scientist Jack Moreland at the NWI Child Trauma Summit. A live demo of the VR



intervention was made, followed by guided focus groups to gather insights on customizing the VR practice environments and situations for youth. [Read More...](#)

CIVS Staff and Industry Collaborator Present Keynote at AIST Midwest Chapter

A keynote on "Development and Implementation of Digital Technology Solutions for Safety and Training in the Ironmaking and Steelmaking Industry" was presented by CIVS staff Kyle Toth (Senior Research Engineer) and Jack Moreland (Senior Research Scientist), Jeffrey Maxfield (U.S. Steel) and Conrad Fisher (Steel Dynamics), at the AIST Midwest Chapter Dinner at Avalon Manor in Merrillville on April 8th. [Read More...](#) CIVS faculty, staff, and students also attended AIST Midwest Chapter Monthly Dinner Keynotes in January, February, and March. [Read More...](#)



CIVS RA Xipeng Guo Successfully Passes Ph.D. Dissertation



Congratulations to Xipeng Guo, on successfully passing his Ph.D. in ME dissertation exam on Feb. 5 at Purdue Univ. West Lafayette. His research is entitled “Modeling of Flow Field, Inclusion Removal, Arc Heating and Hot Metal Desulfurization in the Gas Stirred Ladle” under the supervision of CIVS Director Chenn Zhou. He has conducted research projects at CIVS for 8 years since his senior year. [Read more...](#)

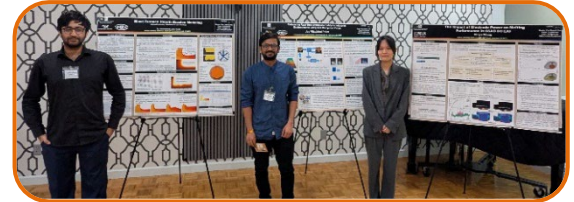
Presentation at AIST Continuous Casting Meeting

CIVS research on “CFD Modeling of Twin-Slab Caster” was highlighted at AIST Continuous Casting Spring Meeting. CIVS RA & Ph.D. student Dianzhi Meng made the presentation in Louisville, KY. [Read More...](#)



CIVS Student Awards

Congratulations to 3 CIVS Graduate Research Assistants on their poster awards selected by industry professionals at the



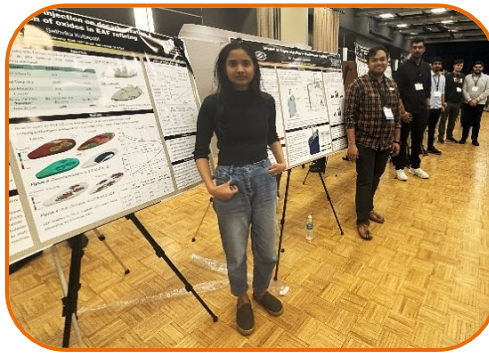
SMSVC meeting on April 9. The Shiyu Wang–1st place (EAF), Jay Polra–2nd place (AI Safety), and Omer Raza–3rd place (Blast Furnace) [Read More...](#)

Three CIVS senior design projects received grants from PNW; “Design of Diluted Combustion for Greenhouse Gas Emission Reduction”, “Exploration of Oxygen Blast Furnace Operation with CFD Models”, “Virtual Crane Simulation” [Read More...](#)



33 CIVS Research Students Participated at PNW Days of Discovery

On April 19, 33 CIVS graduate and senior design students participated the 2025 PNW Day of Discovery in Alumni Hall. CIVS showcased 17 graduate research posters and 7 senior design posters. [Read More...](#)



Student Success Story: Abhishek Kolakotla



Congratulations to CIVS RA Abhishek Kolakotla, who will receive his MSME degree with Thesis Option in May 2025. He has accepted a position as Assistant Project Manager at ACMS Group starting after graduation. At CIVS, his research project is on “Investigation of Dual Fuel and Flameless Combustion in Reheat Furnaces”. This project challenged him to think critically, solve real-world problems, and apply knowledge in meaningful ways. “My time at CIVS has been one of the most impactful parts of my academic journey. Over the past two years, I’ve had the chance to work closely with Prof. Chenn Zhou and Nick Walla, whose mentorship played a huge role in both my technical and personal growth. Through their guidance, I developed not only engineering skills but also valuable soft skills like communication, time management, and adaptability”. [Read more...](#)

Successful SMSVC April Semi-Annual Meeting

On Apr 9-10, Steel Manufacturing Simulation and Visualization Consortium (SMSVC) had a productive semi-annual meeting at CIVS with over 80 attendees from 15 member companies and PNW. The events included 1) presentations by CIVS researchers in 6 topics (Safety, Ironmaking, EAF, Continuous Casting, Ladle, and Reheating Furnace), 2) A Dinner Keynote by AIST Executive Director Ron Ashburn 3) Project Technical Committee meetings, and 4) Board Meeting. [Read more...](#)



SMSVC NOTES

Annual Meeting
November 5-6, 2025

If interested in becoming a member, please contact steelcons@pnw.edu, or visit steelconsortium.org.

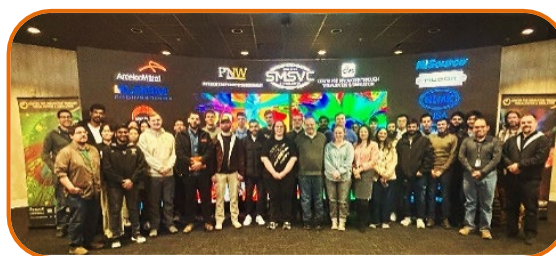
CIVS Research Highlighted in Manufacturing x Digital & Northwest Business Magazine

CIVS research was recently featured on MxD (Manufacturing x Digital) website with an article titled “How Digital Twin Technology — and a Virtual Blast Furnace — Are Helping to Bridge the Manufacturing Skills Gap”. [Read More...](#) In the April issue of Northwest Indiana Business Magazine, CIVS research was highlighted in the article on “Future of Energy is Bright”: “The center collaborates with energy providers and industrial partners to improve energy efficiency, reduce costs and enhance workforce training. It uses advanced simulation, visualization, AI tools and 3D digital twins. [Read More...](#)



CIVS Hosts External Speakers at Friday Seminars

CIVS welcomed steel industry professionals to give seminars to CIVS staff, students, and PNW College of Engineering students and faculty. On February 21, Joe Morey of Morey Industrial Consulting presented “Do Better Things! – What we all can do to help in the difficult steel transition”. [Read More...](#) On March 7, Steve Ryan from NLMK presented “Electric Steelmaking”. [Read More...](#) On April 18, Randy Beardsley from NLMK presented “Ladle Metallurgy Furnace and Casting Processes”. [Read More...](#)



Facts and Impacts

- \$40+ million savings for companies
- \$53+ million in external grants and contracts
- 180+ external organizations collaborated with CIVS
- 460+ projects
- 700+ national and local news
- 2,250+ students employed and mentored
- 11,600+ students used CIVS for virtual labs
- 200+ Purdue faculty and staff collaborators
- 345+ student awards and grants (globally since 2011)
- 44,000+ local, national, and international visitors