

# STUDENT PLAYBOOK

## The 2023-24 Bronco Challenge for Sustainable Impact

...an opportunity (nationally recognized for innovation in sustainability education) for all WMU students to compete for financial rewards by doing original work in inter-disciplinary and cross-functional teams to solve problems that challenge the survival of civilization

<https://wmich.edu/sustainability/initiatives/broncochallenge>

The Bronco Challenge is only possible through the generous contributions of the following sponsors

		
		
		

October 31, 2023  
Office for Sustainability

**Western Michigan University**  
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# STUDENT PLAYBOOK

## The 2023-24 Bronco Challenge for Sustainable Impact

September 18, 2023

### INTRODUCTION

#### What is the Bronco Challenge?

The Bronco Challenge is a WMU initiative launched in Fall Semester 2022 to provide students with an opportunity to have a sustainability-related problem-solving experience. The Challenge is an optional, co-curricular opportunity open to all WMU students across all majors. Students will work competitively throughout the academic year in self-selected, 4-person teams on a sustainability project of their own design. Projects must propose solutions to issues raised by one or more of the United Nations' 17 Sustainable Development Goals (SDGs) described below and incorporate applicable issues related to diversity equity and inclusion (DEI). Projects may be an idea for a product, a service, a business or a public policy.

Sustainability has many definitions, but all relate to the 1987 book Our Common Future which concluded that global patterns of using non-renewable resources and working at cross purposes against nature set the stage for the demise of civilization as we know it. The prescription for avoiding that consequence is pivoting to a world more responsible in the use of resources and more symbiotic with nature. The proposed pathway was a world growth scenario that “meets the needs of the present without compromising the ability of future generations to meet their own needs.” Those few words are a very tall order in that they call for the transformation of global, interconnected, social, environmental and economic systems and that they are intended to apply in perpetuity. WMU students have grasped the urgency of the needed transformations and are looking for opportunities within their academic programs to be actively involved.

To organize discussion and work pertaining to sustainability the UN published in 2015 goals and associated targets for achievement by 2030. These goals and targets are the previously referenced SDGs and are grouped in 17 topical areas as follows:

No Poverty	Reduced Inequality
Zero Hunger	Sustainable Cities and Communities
Good Health & Well Being	Responsible Consumption and Production
Quality Education	Climate Action
Gender Equality	Life Below Water
Clean Water and Sanitation	Life on Land
Available and Clean Energy	Peace, Justice and Strong Institutions
Decent Work and Economic Growth	Partnerships to Achieve the Goals
Industry, Innovation and Infrastructure	

In each of these 17 topical areas, detailed goals and targets are provided which constitute the scope within which Challenge projects must be designed ( [https://sdgs.un.org/sites/default/files/2020-09/SDG%20Resource%20Document\\_Targets%20Overview.pdf](https://sdgs.un.org/sites/default/files/2020-09/SDG%20Resource%20Document_Targets%20Overview.pdf) ). Challenge projects should also include DEI issues that may be embedded in the SDGs associated with a given project.

Unless prescribed as a course requirement, there will be no academic credit for participating in the Challenge but there will be financial rewards for teams judged to be best performers.

Benefits of participating in the Challenge for all students are the opportunities to earn Signature credit and for business students to earn SPURS credit.

Students are encouraged (but not required) to register their participation in the Challenge which will put them on a list to receive information pertinent to the Challenge as it develops. See Appendix A for instructions on how to register your participation.

The Challenge is an opportunity for students to do original work in inter-disciplinary and-cross functional teams to solve problems that challenge the survival of civilization.

### **Why the Challenge?**

WMU strives to prepare students to be leaders in their life's work and to be responsible citizens at large. However, when it comes to matters of sustainability, a complicating factor is that academic structures such as majors, minors, departments, etc., and associated academic rules, often work against students' efforts to gain an inter-disciplinary and cross-functional component of their education.

A student might major in economics and perhaps do a minor in psychology, and maybe even a second minor in geography, but adding ingredients about business or politics, for example, is typically beyond reach in four years. However, such diversity in one's education is valuable when trying to solve sustainability problems that by their very nature span broad circumstances. Critical issues embedded in the SDGs such as climate change, gender discrimination and public health are not recent developments and do not persist for lack of work by dedicated people and institutions. They persist because they are difficult to solve. To convey associated difficulties and solution barriers they have been labelled "wicked problems". Literature exists on the nature of wicked problems and why they are difficult to solve. Often cited is the failure of problem solvers to view their work through a sufficiently diverse lens of expertise and a tendency to make convenient but wrong assumptions regarding the ease of implementing solutions.

At the risk of oversimplification, the Challenge offers WMU students the unique opportunity to work with a team of peers on a wicked problem and hopefully develop a solution that will advance world progress. An additional consideration is that many recruiters visiting campus have expressed interested in students' knowledge and problem-solving experience with sustainability matters, regardless of their major.

### **How Will the Challenge Work?**

The Challenge is open to all full time WMU students in all majors and all level from freshman thru post-graduate.

To participate in the Challenge students must

- Work in self-selected teams that contain 4 people that collectively represent expertise in at least two, and desirably three, disciplines
- Plan to be enrolled for both Fall and Spring semesters, and
- Must design a project that solves a problem or that mitigates an issue defined by one or more of the SDGs for which the team members share a passion and demonstrate relevant expertise.

The end result of a Challenge project may be an idea for a product, a service, a business, or a public policy. Beneficiaries of a project may range from local to global stakeholders. It will not be necessary for the project solution to be implemented for a project to be considered complete, such as if a device or a structure is called for. However, the project team must describe in detail whatever implementation is

intended including for example, potential barriers and solution pathways, economic, political and considerations, and timelines. The financial rewards referenced above are funded by contributions from the University, corporate sponsors, and individual donors. The total amount of money allocated for the awards is \$ 19,000. These funds will be distributed as follows:

First Place Team:       \$ 10,000

Second Place Team:     \$ 6,000

Third Place Team:       \$ 3,000

Members of teams that receive awards will share awards equally.

Solutions will be judged by panels of judges consisting of WMU faculty and external subject matter experts.

### **Solution and Project Selection**

In addition to their own knowledge and interests, students will have an additional resource to guide to selection of the problem they want to solve and the solution they will design. Challenge sponsors have the option to identify one or two project ideas that align with issues and problems facing their organization and that align with the Challenge guidelines.

Sponsor suggested projects were submitted with the following information.

- A descriptive, action-oriented project title
- A summary that specifies the desired outcome and how or why the suggested work is of interest to the sponsor
- Specification of which SDG or SDGs pertain to the suggested project

Sponsors know there is no guarantee that a suggested project will be selected by a Challenge team, and there is no expectation that all sponsors will submit project suggestions. Suggested projects are contained in Appendix B of this Playbook.

Only ONE Bronco Challenge team may work on a given sponsor-submitted project. This is to minimize the burden on the sponsor in supporting the team throughout the project.

When a team has decided they want to select a sponsor-submitted project as their Bronco Challenge project, the team should advise Neil Drobny via email to determine whether any other team has selected that project. When a team is advised that a sponsor-submitted project is available, and the team commits to that project, the team will be required to work on that project for their Bronco Challenge project. If the team subsequently drops that project, they will be disqualified from the Bronco Challenge.

If you are going to use a sponsor-submitted project please complete the above steps by October 16, 2023.

### **Schedule for the Challenge**

The schedule for the Challenge is organized in three Phases.

#### **Phase 1**

Phase 1 begins with the start of the 2023 Fall semester. The opportunity to participate in the Challenge will be promoted to students through many communication channels including social media, print

material, in-class announcements, student organizations and information meetings. Project proposals will be due November 10, 2023. Project teams will be notified by November 17, 2023, if their project is accepted or not.

### **Phase 2**

In January 2023, a semi-finals competition will be held in the form of written progress reporting by all teams. Progress reports will be due January 22, 2024. Teams selected to continue in the Challenge, and those not selected, if any, will be notified January 30, 2024.

### **Phase 3**

Teams selected to compete in the final competition will present their proposed solution in written and oral form in late Spring 2024. Written reports will be due April 3, 2024, and the oral presentations will be held April 17, to also include announcement of the Challenge winners.

### **Signature and SPURS Credit**

Students participating in the Challenge may use their work to earn credits for two WMU programs that provide experiential learning experience designed to build skills that will be important in their post-academic lives. The Signature Program (<https://wmich.edu/signature>) is open to all students and SPURS (<https://wmich.edu/business/academics/spurs>) is open to business students.

## **CHALLENGE DELIVERABLES**

Prepare written deliverables for all 3 phases on 8.5" x 11" paper with 12 pt Times New Roman font, single spaced with 1-inch margins, and submit in pdf format.

Use graphics to convey points that may be difficult to explain or where a visual image may have greater impact than words. If a video is needed to complement the report, include a hyperlink and keep the video to 3 minutes or less.

### **Phase 1 – Solution and Project Description** – Due November 10. 2023

Limit your document to 7 pages. Organize your document in accord with the numbered paragraphs below and include the following information.

1. **Project Scope and Objectives.** Describe the scope and objectives of your project including the UN SDGs that reference the needs to which your solution is directed. As applicable, describe the how social concerns of diversity, equity and inclusion will be included in your project. As previously noted, the objective of a Challenge project may be creation of a product, service, a business, or a public policy.
2. **Project Inspiration.** Explain how and why you selected your Challenge and the design of your project. Help the judges understand your view of the pressing environmental, social and /or environmental issues that have captured your attention.

3. Solution Vision. Describe your vision of the solution you have in mind. Who will be the beneficiaries and how will they use or benefit from it? What barriers do you anticipate and why do you think you can solve them?
4. Solution Advantages Discuss how your solution is a significant improvement over existing solutions and why you think it may not have been tried previously. How does the value of your solution exceed the cost? Were the reasons economic, technology, cultural or social factors or something else?
5. Project Management. What are the key ingredients of your project management plan? Will one of your team members serve as your project manager? Identify key milestones and associated target dates. How will you measure, document and communicate progress among team members? Consider using a Gantt chart.
6. Solution Implementation. Would any form of pilot-scale implementation be needed to test your solution? For, example, would there be a need to build a device or structure. Do you have a plan for covering associated costs and post-project disposition if there are such needs?
7. Supporting Resources. In what aspect of your work might you need help? Have you identified mentors or subject matter experts that you can tap into for guidance? Have you secured their agreement to work with you?
8. Team Member Profiles. Include a ¼- page summary identifying for each member of the team: academic major and standing, prior work or personal experience that created the team member's passion for working on the project, and contact information. Designate one team member as the point of contact for your team.

Evaluation of the Phase 1 document will entail verification that the above 8 items have been fully and thoughtfully addressed. Documents of 3-4 pages and/or that omit any of the above 8 items will not be accepted into the Challenge competition.

Your Phase 1 document is due November 10, 2023 by 5 pm via email to Professor Neil Drobny, PhD: [Neil.Drobny@wmich.edu](mailto:Neil.Drobny@wmich.edu). Project teams will be notified by November 17, 2023 if their project is accepted into the Bronco Challenge or not.

### **Phase 2 – Progress Report** – Due January 22, 2024

Limit your document to 7 pages. Organize your document in accord with the numbered paragraphs as outlined below and include the following information.

1. Solution Summary. Provide a clear and concise description of your solution and how it has evolved since submitting your proposal. Mention any adjustments you made since submitting your application and why you made them. Did the adjustments compromise benefits of the solution? If so, do you feel these compromises were significant, and why or why not?
2. Project Drivers. Discuss prevailing social, environmental or economic conditions that will be relieved or mitigated by your solution. Upon what evidence or assumptions do you base your claim? For your selected solution indicated what stakeholders will be benefited and to what degree. How do you know?

3. Improvements. Describe how your solution is an improvement over existing or previously attempted solutions. Why do you think yours will be successful and why did previous attempts fail? Consider social, political, environmental and economic factors.
4. Solution Detail. Describe how your solution “works.” Does it depend on the cooperation of people other than the beneficiaries (such as government officials) or on the reliable function of other systems (power generation and distribution). How certain are you that the other connections can be implemented smoothly and why?
5. Implementation Testing. Describe any implementation testing that you are planning. What barriers and difficulties do you anticipate and what are your contingency plans?
6. Supporting Resources. Have you received support from mentors or industry experts on any aspect of your project? What are the highlights of any advice you chose to follow and/or not follow and why?
7. Priority Tasks. As you proceed to the final phase of your work what are the two or three high priority remaining issues you need to resolve or firm up?

Evaluation of the Phase 2 document will be based on how fully and thoroughly the above 7 items have been addressed which will be used to judge whether you are on track to be competitive in Phase 3. In that sense Phase 2 is not only a progress report but also a semi-finals report.

Your Phase 2 document will be due January 22, 2024 by 5 pm via email to Professor Neil Drobny, PhD: [Neil.Drobny@wmich.edu](mailto:Neil.Drobny@wmich.edu). Project teams will be notified on January 30, 2024 whether or not they have been selected to continue with Phase 3 of the Challenge. There is no pre-determined administrative requirement as to how many teams will be selected to move on to Phase 3. All teams judged to be competitive will be invited to participate in Phase 3.

### **Phase 3 – Final Evaluations**

#### **Written Report**

Limit your document to 5 pages. Organize your document as outlined below and include the following information.

1. Detailed Solution Description. Describe in detail the issue or problem your solution is designed to eliminate or mitigate. Indicate where in the SDGs the problem or issue is embedded and what elements, if any, in your solution also deal with diversity, equity or inclusion. Compared to existing solutions or prior attempts, what are the innovative elements of your solution? Did you have a way to test the idea of your solution with prospective beneficiaries? Is there a business case for your solution?
2. Path of Inquiry. Describe the path of inquiry that you employed to select the topic for your project. What criteria did you employ to “rule in” and “rule out” possibilities that you considered? How much weight did you give to your passion for the topic vs. the expertise among team members?



3. Business Plan. What are the highlights of the business plan for taking your solution to the next step, e.g. the problem being solved, costs to implement, value to be created, and pathways to implementation/commercialization? Is more analysis needed? Share the analysis evidence, and critical thinking that make you believe there is a market for your solution. Would you do a pilot scale version? What if any type of business partners would be needed? What scale, schedule and source of funding would be needed? What skills, beyond those of the project team, would be needed?
4. Lesson Learned. As a team what did you do well? What could have been done better? What contributed to both aspects of your work? What would you do differently if you had the project to do over?
5. Mentors and Experts. Where did you find mentors and subject matter experts to be most helpful? How did you recruit them?

Your Phase 3 document will be due April 3, 2024 by 5 pm via email to Professor Neil Drobny, PhD: [Neil.Drobny@wmich.edu](mailto:Neil.Drobny@wmich.edu). The document will be used to determine if your team will be selected to make an oral presentation to a panel of live judges on April 17, 2024.

### **Oral Presentation**

Up to five or six teams will be selected to make an oral presentation. The selected teams will be announced on April 8 by email to all teams participating in Phase 3.

Oral presentations should be supported by a slide deck and delivered by one person who will also handle the Q&A with judges. The presentation will be on the WMU campus, and the presenter must be physically present. The presentation will be limited to 15 minutes and the Q&A will be limited to 10 minutes. The judges will have seen your final report in advance. In the presentation the judges will be looking for:

- A well-organized, convincing and clear summary of your solution
- Evidence of originality and that there is an economic, social, political and environmental pathway for implementation
- Prompt and thoughtful answers to questions

### **DESIRED RESULTS**

#### **We are looking for:**

- Creative ideas which demonstrate that sustainable approaches can solve wicked problems
- Ideas that integrate thinking across disciplines that rarely interact
- Solutions that will work across cultural boundaries
- Ideas that can arguably migrate from small to large scale
- Ideas that connect concepts, practices or systems that are normally in conflict
- Solutions for which there is a strong business case

#### **We are not looking for:**

- Solutions targeted on an unconfirmed need.
- Solutions confined to a narrow scope of application.

- Solutions built on the expertise of a single technology or discipline.
- Solutions that require an assumed behavior change or a required behavior change with unconfirmed potential
- Solutions that entail implementation of an idea developed by others, without additional innovation.

## **TERMS & CONDITIONS**

### **Eligibility**

Teams must have 4 members with skills in at least two and preferably three disciplines. To be eligible to participate, all team members must be full time students in good standing at WMU.

If a team member becomes ineligible the team member will be dropped from the competition and the remaining team members will have one opportunity to recommend to the Challenge Committee another eligible student to take the vacated position. The Challenge Committee will have 10 days to accept or reject the recommendation. In the case of rejection the team will be dropped from the Challenge. Similar terms will apply if a team member voluntarily withdraws from the competition.

If a second team member becomes ineligible or withdraws from the Challenge, the team will forfeit its participation in the Challenge.

If loss of a team member is occasioned by an act of God, the Challenge Committee will waive the above requirements and will work with the affected team to arrive at a fair and equitable path forward.

### **Financial**

There is no fee to participate in the Challenge, but teams are responsible for any costs that may be incurred in creating and submitting required materials.

Cash awards will be divided equally among team members. All winners of cash awards are solely responsible for applicable income taxes.

Winners of cash awards will be required to complete and sign documents affirming eligibility, release of liability and granting public release of the Challenge results. Required documents must be signed and returned within 7 days of the date of notification. A parent or guardian of cash reward winner less than 18 years of age will be required to ratify and sign required documents.

### **Intellectual Property**

Written and supporting material submitted as part of the Challenge Competition will remain the intellectual property of the team members that submitted them and may be developed and promoted at their sole discretion. However, by submitting such materials as part of the Challenge Competition, WMU is accorded the right to use such material and the educational background of the students in non-commercial institutional promotion.

## RESOURCES

### Videos

- The Next Industrial Revolution tells the story of architect William McDonough's and chemist Michael Braungart's work to redesign the industrial material economy to "work with Nature, not against it. <https://vimeo.com/20372160> (54 min.)
- Reinventing Fire explains how replacing fossil fuel can be cheaper than mining and burning them as outlined by Amory founder of the Rocky Mountain Institute <https://www.youtube.com/watch?v=u-Kq89M0t18> (22 min).
- The Business Logic of Sustainability presents Ray Anderson, founder and CEO of Interface Carpets, on how his company increased sales and doubled profits by moving away from the take-make-waste business model to one that conserves and reuses resources. [https://www.ted.com/talks/ray\\_anderson\\_the\\_business\\_logic\\_of\\_sustainability?language=en](https://www.ted.com/talks/ray_anderson_the_business_logic_of_sustainability?language=en) (15min.)
- See also the set of videos associated with book Drawdown listed in the books section below.

### Books

A sampling of books that discuss sustainability from various perspectives is as follows:

- Chief Sustainability Officers at Work - How CSOs Build Successful Sustainability and ESG Strategies. Chirssa Pagitsas. (2022).
- Net Positive -: How Courageous Companies Thrive by Giving More Than They Take. Paul Polman & Andrew Winston. (2021).
- Exploring Wicked Problems – What They Are and Why They Are Important. Joseph Bentley & Micael Toth. (2020)
- Green Swans - The Coming Boom in Regenerative Capitalism. John Elkington. (2020).
- Full-Spectrum Thinking - How to Escape Boxes in a Post-Categorical Future. Bob Johansen. (2020).
- Drawdown - The Most Comprehensive Plan Ever Proposed to Reverse Global Warning. Paul Hawken. (2017). A related set of 10-30 min videos is available at <https://drawdown.org/climate-solutions-101>
- Doughnut Economics - 7 Ways to Think Like a 21<sup>st</sup> Century Economist. Kate Raworth. (2017).
- How Culture Shapes the Climate Debate – Andrew J. Hoffman (2015).
- The B-Corp Handbook – How to Use Business as a Force for Good. Ryan Honeyman. (2014).
- Nature's Fortune – How Business and Society Thrive by Investing in Nature. Mark R. Tercek and Jonathan S. Adams. (2013).

- The Responsible Company – What We have Learned from Patagonia’s First 141 Years. Yvon Chouinard and Vincent Stanley. (2012).
- The Third Industrial Revolution - How Lateral Power is Transforming Energy, the Economy, and the World. Jeremy Rifkin. (2011).
- Business Lessons from a Radical Industrialist - Ray C. Anderson. (2009).
- The Triple Bottom Line – What it is and Why it is Important. Andrew Savitz. (2006)
- The Necessary Revolution – Working Together to Create a Sustainable World. Peter Senge et. al. (2008).
- Thinking in Systems - Donella H. Meadows. (2008).
- Cradle to Cradle – Remaking the Way We Make Things. William McDonough & Michael Braungart. (2002)
- Biomimicry – Innovation Inspired by Nature. Janine Benyus. (2002).
- Our Common Future – The World Commission on Environment and Development Ed: Gro Harlem Brundtland. (1987).

### **Linked In**

- Many LinkedIn members actively discuss sustainability problem solving on LinkedIn. Membership in LinkedIn is free.

### **Wege Prize Resources**

- The Wege Prize is a sustainability-based competition similar to the Bronco Competition. Key differences are that the Wege Prize is international in scope and the topical focus is the circular economy, a major thrust in sustainability. The Wege Prize is organized by the Kendall School of Design at Ferris State University in Grand Rapids, Michigan.
- The Wege Prize website offers a large listing of sustainability-related information resources: <http://www.wegeprize.org/resources>.
- As a point of interest, a WMU team won first prize in the 2015 Wege Prize competition.

## **CHALLENGE SPONSORS**

The Challenge is sponsored by the following organizations:

### **Greenlink Engineering**

GREENLINK Engineering was established to discover innovative solutions to high performance, sustainable construction materials. GREENLINK has pioneered a range of successful products including, for example:

- Improved rooftop support systems that contribute to longer lasting roofs and more efficient and sustainable construction.
- Filter gaskets that improve the performance and economics of controlled environments.
- Seals which prevent cleanroom contamination resulting from mechanical penetrations.

GREENLINK is an idea company dedicated to the continuing development and manufacture of stronger, safe and more durable architectural products. Company employees are driven by their commitment to each other and by teamwork, the force that allows common people to produce uncommon achievements. GREENLINK is based in Kalamazoo. Website: <https://www.greenlinkengineering.com>.

### **Greif**

Greif (rhymes with life) is a publicly traded manufacturing company that provides packaging solutions for life's essentials. We have a global footprint of 200-plus locations on 5 continents. Our manufactured products include fiber, steel, and plastic drums, industrial IBCs, small plastic containers, timber, 100% recycled fiber products, and more. Our services include fiber recycling, industrial packaging collection and reconditioning services, container filling services, land management, and more. Our vision is to be the best performing customer service company in the world. We are considered both internally and externally as a leading sustainability player in the global economy and plan to continue this path forward. Find our most recent sustainability report on our website at [www.greif.com](http://www.greif.com).

### **Kalsec**

Kalsec products, derived from natural herbs, spices, vegetables, and hops, are translated into easy-to-use liquid extracts ideal for most formulations to meet challenges faced by food and beverage manufacturers throughout the industry and around the world. At Kalsec's location near Denver City Texas, it specializes in the cultivation, harvesting, dehydration and extraction of paprika, rosemary and carrot, as well as specialty herbs and spices. Kalsec also processes a line of solvent-free extracts that are ideal for supporting their green and sustainability platform.

Kalsec is registered B-Corp, a rigorous certification that must be renewed periodically, that attests to the company's sustainable performance in its relationship with all stakeholders. Kalsec is based in Kalamazoo and has operations in several international locations. Website: <https://kalsec.com>.

## **Meijer**

Meijer is a Grand Rapids, Mich.-based retailer that operates more than 500 supercenters, neighborhood markets and Express locations throughout Michigan, Ohio, Indiana, Illinois, Kentucky and Wisconsin. A privately-owned and family-operated company since 1934, Meijer pioneered the "one-stop shopping" concept and has evolved through the years to include expanded fresh produce and meat departments, as well as pharmacies, comprehensive apparel departments, pet departments, garden centers, toys and electronics. For information on Meijer's sustainability work, please visit <https://meijercommunity.com/sustainability>.

## **Owens Corning**

Founded in 1938, Owens Corning (NYSE: OC) is a global building and construction materials leader committed to building a sustainable future through material innovation. The company's three integrated businesses – Composites, Insulation, and Roofing – provide durable, sustainable, and energy-efficient solutions that leverage its unique material science, manufacturing, and market knowledge to help customers win and grow.

Owens Corning is a global leader in sustainability with a two-decade track record of global impact and an unrelenting commitment toward its goals to increase the positive impact of its products, reduce the negative impact of its operations, and help employees and the communities in which they live and work thrive. The company has earned a place on the Dow Jones Sustainability World Index for 12 consecutive years. In 2022, it earned the top spot on the 100 Best Corporate Citizens list for an unprecedented fourth year in a row in recognition of its outstanding environmental, social, and governance performance and transparency.

Headquartered in Toledo, Ohio, USA, Owens Corning has approximately 20,000 employees in 33 countries.

## **Pfizer Inc.**

Pfizer Inc. is a research-based, global biopharmaceutical company. We apply science and our global resources to bring therapies to people that extend and significantly improve their lives through the discovery, development and manufacture of medicines and vaccines. Guided by our values and our commitments to long-term sustainability, Pfizer's environment, social and governance (ESG) approach informs how we can advance our purpose - Breakthroughs that change patients' lives - in a responsible and sustainable way that takes accountability for the impact we make on society. By taking proactive, collaborative steps to advance ESG at Pfizer, we can help improve health outcomes, build trust, create shared value, and make a positive impact on society for years to come. Our ESG strategy includes six priority areas: product innovation; equitable access and pricing; product quality and safety; diversity, equity and inclusion; climate change; and business ethics. These priorities represent the areas of most significance to our business and stakeholders. Website: <https://pfizer.com>.

## **WMU Office for Sustainability**

The mission of the Office for Sustainability is to guide and assist the University community in fulfilling and growing its sustainability commitments. Through building a diverse and flourishing learning

community around sustainability, we continually explore and develop new opportunities to create a culture of sustainability and improve quality of life for all.

The Office for Sustainability offers a range of ways to get involved with campus sustainability. Opportunities, in descending order of time commitment and responsibility, include:

- Graduate and Doctoral Assistantships
- WeSustain Internship
- Part-time student jobs
- Volunteering

Website: <https://wmich.edu/sustainability>.

### **WMU Haworth College of Business**

WMU's Haworth College of Business is the academic home to more than 3,500 undergraduate students majoring in 17 specialized areas. An additional 300 graduate students study business administration and accountancy. The college offers certificate programs in supply chain and cybersecurity.

WMU Haworth is among an elite group of fewer than 5 percent of business schools worldwide that are accredited at both the undergraduate and graduate levels by the AACSB International -The Association to Advance Collegiate Schools of Business. Website: <https://wmich.edu/business>.

Haworth is seeing a growth of nearly 20% in the Master of Business Administration program. WMU Haworth's new HyFlex program has been a major factor that is encouraging more graduate students to pursue an MBA at WMU Haworth. The HyFlex MBA program is a course model that presents content in a flexible structure, giving students the option of attending sessions in the classroom, participating online or both.

Additionally, the College requires all undergraduate students to take a course in ethics and sustainability as a graduation requirement regardless of major.

### **FOR MORE INFORMATION**

For more information about any aspect of the Challenge, consult the web page <https://wmich.edu/sustainability/initiatives/broncochallenge> or contact Professor Neil Drobny, PhD by email: [Neil.Drobny@wmich.edu](mailto:Neil.Drobny@wmich.edu).

## Appendix A

### Registering for the Bronco Challenge

Registration for the Challenge is a **non-binding expression of intent** to participate in the Challenge and may be withdrawn at any time.

The **advantage of Registration** is that you will receive a weekly email with “Challenge News” in the subject letting you know about new Challenge offerings such as information meetings, new information related to United Nations Sustainable Development Goals (SDGs), suggestions on how to find a team or how to find additional team members and reminders about Challenge milestones and due dates.

**To Register** (or to withdraw a prior registration) send an email to Neil Drobny, the Bronco Challenge Director, ([Neil.Drobny@wmich.edu](mailto:Neil.Drobny@wmich.edu)) with “Bronco Challenge Registration” in the subject line and the following information in the content of the email:

Name

Email address

Academic Major

Academic Level (e.g. freshman, sophomore, etc.)

SDG topic selected or of interest (if known)

Participation status:

On a team

Look for a team

Undecided

Other

Students may register for the Challenge up to November 10, the date by which Challenge proposals must be submitted.



## **Appendix B**

### **Projects Suggested by Sponsors**

As mentioned earlier in the text of this playbook, in addition to their own knowledge and interests, students will have an additional resource to guide to selection of the problem they want to solve and the solution they will design. Challenge sponsors have the option to identify one or two project ideas that align with issues and problems facing their organization and that align with the Challenge guidelines.

Sponsor-suggested projects were submitted with the following information

- A descriptive, action-oriented project title
- A summary that specifies the desired outcome and how or why the suggested work is of interest to the sponsor
- Specification of which SDG or SDGs pertain to the suggested project
- Contact information

This appendix contains the projects submitted by sponsors that chose to do so.

Only ONE Bronco Challenge team may work on a given sponsor-submitted project. This is to minimize the burden on the sponsor in supporting the team throughout the project.

When a team has decided they want to select a sponsor-submitted project as their Bronco Challenge project, the team should advise Neil Drobny via email to determine whether any other team has selected that project. When a team is advised that a sponsor-submitted project is available, and the team commits to that project, the team will be required to work on that project for their Bronco Challenge project. If the team subsequently drops that project, they will be disqualified from the Bronco Challenge.

If you are going to use a sponsor-submitted project please complete the above process October 16, 2023.

Projects submitted by companies that chose to do so are contained in the following pages.

## **Projects from Greif**

### **Paper Mill Waste Diversion**

Greif owns and operates 13 paper mills across the US. These paper mills send approximately 130,000 metric tons in total to the landfill annually, accounting for about 90% of Greif's total waste to landfill out of ~200 global facilities. Nine of these mills send 98-100% of its waste to the landfill because of the lack of known waste diversion opportunities. The waste generated is mostly sludge and "ragger tail" as well as other byproducts. Greif needs help in identifying sustainable waste management solutions for these materials to help them reach their goals of 90% waste diversion from all facilities by 2025 and 99.5% waste diversion at 97% of Greif facilities by 2030.

#### **Relates to the Following SDGs:**

12 Responsible Consumption and Production  
9 Industry, Innovation, and Infrastructure  
11 Sustainable Cities and Communities

#### **Greif Contact:**

Katherine Truax, Sustainability Data Analyst  
614-908-6023, [Katherine.truax@greif.com](mailto:Katherine.truax@greif.com)

### **Sustainability Report – Best Management Practices**

Greif has published a corporate annual sustainability report for the past 14 years. The report has evolved and grown over this time, but we want to know how to keep improving and staying competitive with peers. Greif's sustainability report's main audience is for third-party sustainability rating agencies, but recently other audience groups include internal colleagues, customers, suppliers, investors, community members, regulators, etc. What are other large, publicly traded, or manufacturing companies doing for their sustainability reports that Greif could replicate to improve our process?

#### **Relates to the Following SDGs:**

17 Partnerships for the Goals  
8 Decent Work and Economic Growth  
11 Sustainable Cities and Communities

#### **Greif Contact:**

Katherine Truax, Sustainability Data Analyst  
614-908-6023, [Katherine.truax@greif.com](mailto:Katherine.truax@greif.com)

## **Project from Meijer**

### **Project Proposal:**

#### **Goals & Objectives:**

Increase customer awareness of and participation in Meijer's plastic bag and film collection program.

**Significance:**

Meijer stakeholders have ranked plastic pollution as a number one sustainability concern. Across operations, customer collection bins, and a handful of third-party partnerships, Meijer collected approximately 8.4 million lbs. of plastic film (LDPE) for recycling during our 2022 fiscal year. In addition to plastic grocery bags made from this material, many products sold in Meijer stores and at other retailers come packaged in LDPE. This sort of packaging can be found as case overwrap, dry cleaning bags, salt bags, ice bags, packaging air pillows, bread bags, cereal liners, etc.

Most material recovery facilities (MRFs), including the City of Kalamazoo, do not accept plastic film, as it easily clogs their sorting machines. Consumers typically dispose of plastic film in one of three ways:

- 1.) Incorrectly dispose of this material in their single-stream recycling program,
- 2.) dispose of it in the trash, or
- 3.) properly dispose of the material in a [participating store drop-off collection bin](#).

This project aims to encourage consumers to responsibly recycle LDPE through Meijer's store drop-off program.

**Specific Activities:**

The project team will research and evaluate the effectiveness of marketing and communication strategies, including social media, to better engage customers. Based on their findings, the team should create an engagement strategy to be piloted in the Kalamazoo area. Students on this team will have the opportunity to speak with various Meijer internal stakeholders throughout the project process.

**Relevant Skills/Interests:**

Marketing, Communication, Education, Consumer Behavior, Recycling/Materials Management, Business Sustainability, Stakeholder Engagement, Packaging

**SDG Goal Alignment:**

12 – Responsible Consumption and Production

**Meijer Point of Contact:**

Primary: Annalise Steketee, Sustainability Manager, [Annalise.Steketee@meijer.com](mailto:Annalise.Steketee@meijer.com)

Secondary: Erik Petrovskis, Director of Environmental Compliance and Sustainability, [Erik.Petrovskis@meijer.com](mailto:Erik.Petrovskis@meijer.com)

### Projects from Pfizer

**DESCRIPTIVE TITLE – QUANTIFY MIDWESTERN US DEEP GEOTHERMAL POTENTIAL****SUMMARY**

- Deep geothermal, while not as easily accessible in the Midwest, may be a reliable, cost effective solution for the decarbonization of low-grade process and building heat. The production of low-

pressure steam and/or hot water would allow the Pfizer site to transition away from fossil fuels and finalize its journey to NetZero by 2040. Furthermore, establishing if deep geothermal is possible in the area may afford Pfizer and other large thermal load user a way to decarbonize while not adding immense electric loads to highly stressed, weather dependent, storage limited electrical grid.

#### **DESIRED OUTCOME**

- Desired outcome from the study:
  - Feasibility of accessing (is it possible with today's tech) the heat required to produce the below sources of heat generation for the Kalamazoo site
    - Depth required for:
      - 180 F heating water
      - Generation of 30 psig steam
      - Generation of 100 psig steam.
    - Estimated well depths, number of wells and underground field size required to support the above heat generation loads.
    - Cost estimate to establish N+1 utility grade heating solution.
    - Develop a cost per unit relative to using other forms of renewable energy to do the same heating. For example cost vs: RNG, Green Hydrogen, Electric boilers, ground source heat pumps.

#### **SUSTAINABILITY DEVELOPMENT GOAL (SDG)**

- Decarbonization, Non-fossil fuels

#### **CONTACT PERSON**

Contact: [kyle.w.overheul@pfizer.com](mailto:kyle.w.overheul@pfizer.com) (269)-665.0628, Pfizer Sustainability Manager

#### **DESCRIPTIVE TITLE – CONCENTRATED SOLAR POWER (CSP)**

**SUMMARY** *100-word summary that specifies the desired outcome and how or why the suggested work is of interest to the sponsor*

- Concentrating solar power (CSP) collectors receive large amounts of incoming solar radiation and concentrate this energy into a small area to produce high temperature heat (400-1000°C). This thermal energy can be used to produce steam to generate electricity thru a steam turbine or directly as heat (steam and/or hot water). Thermal solar is a renewable energy resource that should be explored to help us achieve our Net Zero 2040 goals, alongside deep geothermal. Parabolic troughs (majority of installations), linear Fresnel reflectors and solar power towers are of interest due to heat output, low maintenance and relative simplicity.

#### **DESIRED OUTCOME**

- Desired outcome from the study:
  - Feasibility (months of year applicable, percent of existing heat generated by natural gas that could be eliminated)

- Storage options
- Project options (size and CSP type)
- Dollar cost (investment) of project options
- This project eliminates fossil fuel combustion and carbon emissions into the atmosphere at a percent equal to the thermal energy captured and converted into hot water or steam.

**SUSTAINABILITY DEVELOPMENT GOAL (SDG)**

- Decarbonization, Non-fossil fuels

**CONTACT PERSON**

Contact: [gary.walker@pfizer.com](mailto:gary.walker@pfizer.com) (269)-833-7026, Pfizer Global Sr. Sustainability Engineer