



# SHPEtech

INNOVATING THE FUTURE

DESIGNING FOR A VUCA WORLD COMPETITION

## RLDC 1-2-3 Problem Statements

1. How may we leverage the advances in Virtual Reality technology in Education?
2. How could we increase the availability/solutions of battery charging technology across the US?
3. What is the best way to handle battery waste from electronic devices, knowing that electric vehicle usage is expected to grow a lot in the next several years?
4. What are the most impactful changes that should be made to the aviation industry during a pandemic to improve safety?
5. Methane hydrate, a greenhouse gas, has been successfully identified in Alaska North Slope. What sort of means is necessary to deploy for further study in characterizing this gas?
6. The tech world might be synonymous with Silicon Valley and San Francisco, and the development of a typical startup is broken into three stages: formation, validation and growth. Why might many tech companies branch out and set up shops in Reno, Nevada?
7. With the expected growth of remote work opportunities in the coming years, what are the best way to keep employees engaged, and for companies to continue to drive their cultures in such a virtual environment?
8. ASU is home to the largest Additive Manufacturing R&D center at a University in the Southwest. With an abundance of research opportunities and industries surrounding the institution, how might they continue to attract students to offer them something unique?

9. As engineering technologies continue to be developed at an accelerated pace, and with it the amount of knowledge/preparation required to be a top performer in many fields, how can we make sure that all communities are properly represented across all levels of the development/education processes?
10. Rural towns are usually the last to have access to the latest technologies and engineering developments across many fields. What are some ways to improve this situation and make sure rural areas are participate of the thought process during planning, and also benefit quickly from related advances?

### **RLDC 4-6 Problem Statements**

1. How might we support city metroplexes to continue business operations during COVID shutdowns?
2. How might we improve the cleaning system of New York City's subway system to prevent the spread of germs?
3. How might cities have better engagement with their citizens that are not regularly using smartphones or have access to internet?
4. How might we engage sports fans while games are happening in stadiums but fans are at home?
5. How might we reduce the violent crime rate in the Ohio State University off-campus area to address recent concerns surrounding student victims?
6. How might we work to reduce theft in off-campus housing and vehicles to create a more habitable space for students moving off-campus?
7. How might we better prepare first-generation students for professional opportunities and improve the 16% rate of first year first-gen students utilizing career services?
8. How might we better equip local vaccine distributors to optimize the vaccine distribution rate and ensure 0% losses of vaccines?
9. How might we address the fatigue from working remotely and successfully assimilating in our life balance?

## **RLDC 5-7 Problem Statements**

1. Electric cars have recently been in demand. How can we make a smooth transition with improvements from gas-powered vehicles to electric cars?
2. Space flights are lifting off from Earth but at the same time leaving debris in Earth's orbit. How may we approach eliminating leaving more waste in space and removing the debris already there?
3. The oil and gas industry creates high amounts of gas emissions. How many we control and reduce the amount of emissions from upstream and downstream operators?
4. Small towns have been struggling economically during the pandemic, in addition to having access to the latest technology. How may we improve technology access and strength rural regions?
5. How may we protect communities from earthquakes?
6. COVID-19 has an impact on businesses by reducing store hours or closing completely. How may we plan to aid brick and mortar stores that only offer in-store experiences?
7. Companies have been shifting to completing partial work from home and avoided going to the offices during the pandemic. How may we include the company's culture in a home setting and make sure employees are a part of the company's success?
8. How may we explore and discover more findings of the deep ocean, despite the high pressure?
9. Southern states across the country have been impacted by the winter storm recently in February. How may we improve for weather storms that don't occur often to reinforce safety measures?
10. COVID-19 has been difficult for everyone, especially for the elderly who have no control or access to technology. How may we assist the elderly to meet their needs?