

Climate Conversations Innovations

St Mark's Creation Care Ministry

February 2024



Agenda

- Land Acknowledgement
- Opening Prayer
- Framework

From data for farmers to improve crop yield and fabrics made of agricultural waste to electric ferries or planes and planet-friendly pet food, start-ups are developing highly innovative solutions that are good for people and the planet. Learn about everything from leading-edge innovations that are breaking technical boundaries to ones you can use every day. As a takeaway, we'll discuss how you can also help reduce climate change by using some of these ideas, as research shows that concerted efforts by early adopters may drive growth of new technologies.

- Discussion
- Actions
- Sharing and Q&A
- Closing Prayer

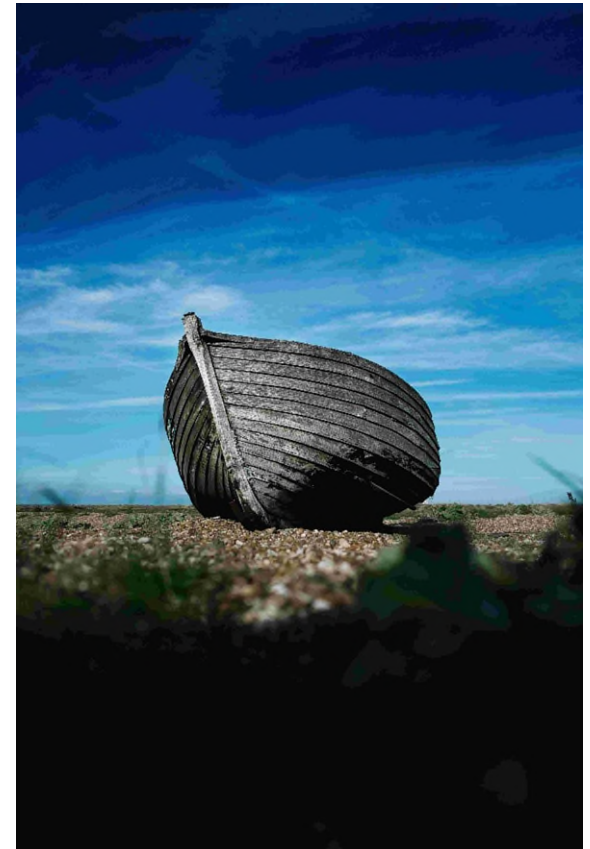
Opening Prayer

God, please ignite a fire in us to inquire of You when we face challenges that require breakthrough solutions that only You can provide. May we never rely on our own intelligence but seek first Your insight and wisdom which can protect us from needless failure, guide us into right solutions, result in gaining leadership credibility, and joy for our followers. For Christ's sake we ask these things, Amen.



Innovators Abound in the Old Testament

- Genesis 6 (Noah): “Build yourself a ship from teakwood. Make rooms in it. Coat it with pitch inside and out. Make it 450 feet long, seventy-five feet wide, and forty-five feet high.
- Exodus 35: Then Moses said to the Israelites, “See, the LORD has chosen Bezalel son of Uri, the son of Hur, of the tribe of Judah, and he has filled him with the Spirit of God, with wisdom, with understanding, with knowledge and with all kinds of skills - to make artistic designs for work in gold, silver and bronze, to cut and set stones, to work in wood and to engage in all kinds of artistic crafts. And he has given both him and Oholiab son of Ahisamak, of the tribe of Dan, the ability to teach others.



Innovation Uses God's Gifts

- 2 Chronicles 26: All the people of Judah took Uzziah, who was sixteen years old, and made him king. In Jerusalem he made devices invented for use on the towers and on the corner defenses so that soldiers could shoot arrows and hurl large stones from the walls.
- Ephesians 2:10: For we are God's handiwork, created in Christ Jesus to do good works, which God prepared in advance for us to do.
- 1 Peter 4:10: Each of you should use whatever gift you have received to serve others, as faithful stewards of God's grace in its various forms.



Innovations Create Hope for Net Zero

- What has brought us to this inflection point of hope edging out despair? Innovation - in institutions, understanding, technology, and leadership; economic understanding of climate change. Most dramatically, innovation has driven down costs and introduced new technologies (IMF)
- Global momentum is building to achieve net zero in greenhouse gas emissions - and to do so more quickly than previously envisioned. Getting there will require unprecedented levels of innovation. (BCG)



Types of Innovations

Individuals

- Energy
- Water
- Food
- Transportation and Mobility
- Fashion

Industry

- Energy
- Construction and buildings
- Manufacturing and materials
 - Plastic, steel, concrete
- Agriculture
- Transport



<https://zincovery.com/>

The Impacts of Innovation on Creation

- Reduction in CO2 and other greenhouse gasses
- Reduction in water usage
- Reduction in waste
 - Agriculture, construction, fashion +
- Ocean, lake and river health via plastic & pollution reduction
- Less deforestation for agriculture
- Care for wildlife and animals



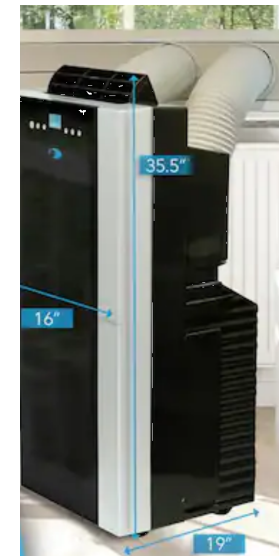
Renewable Energy Innovation Sources

- Solar energy
 - Perovskite or bifacial panels & bricks
- Wind energy
- Batteries
 - Sodium & potassium
- Nuclear fusion
- Hydro
- Tidal energy
- Geothermal
- Biomass



Energy Innovations for Everyday Life

- Credits for energy – the IRA, & WA
 - EVs
 - Solar, wind, geothermal & batteries
 - Home efficiency – audits, insulation +
- Solar panel efficiency
- Portable solar panel and battery
- Mini heat pump
- Backyard windmill
- Smart home electricity monitor



Water Innovations

Individual

- Filtration
- Water usage reduction
- Smart water management
 - Usage, detection, reduction

Industry

- Desalination
- Water reuse & wastewater treatment
- Digital water management for usage optimization
 - AI, sensors, advanced meters, satellites, digital twins



Water Innovations for Everyday Life

- Atmospheric water generator
- Microplastic filter (0.7 microns - 0.0007mm)
 - Drinking water & washing machines
- Smart sprinkler and sensor for gardens
- Smart sensors
 - Water leaks, houseplants
- Smart home water usage monitor
- Hydrogen water bottle



Sprout



Discussion & Breakout Session

Questions:

- What innovations have you seen that will make a difference in caring for creation?
- What sustainable technology needs or wants do you have?
- What is your role in innovation to mitigate climate change?



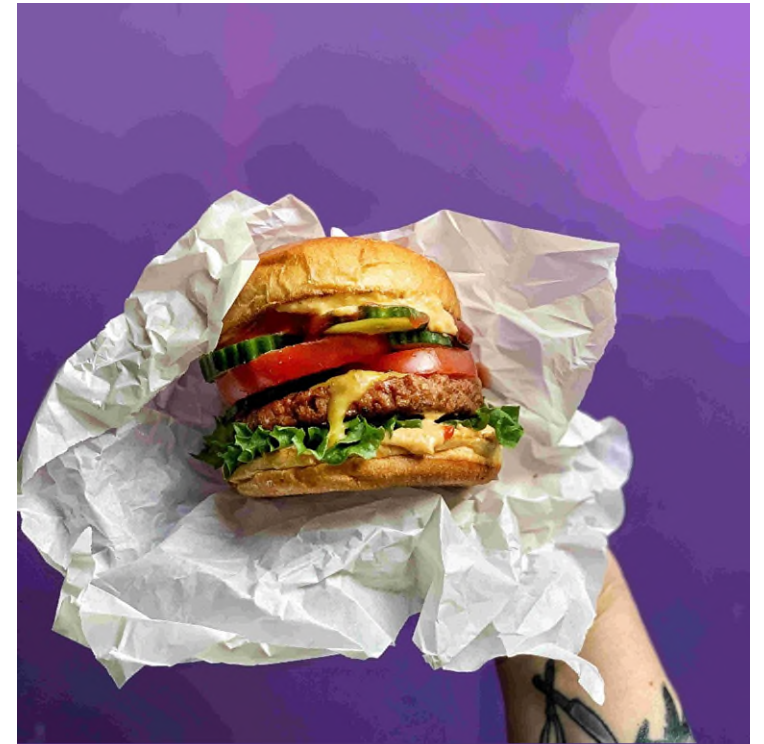
Innovation in Agriculture and Food

Individual

- Fermentation and cell-based meat and dairy
- Personalized nutrition
- Organic & local foods

Industrial

- Plant-based meat and dairy
- Ag-tech: soil, seeds & more
- GenAI for agriculture & farm management, marketplaces
- Regenerative, resilient & vertical farming
- Digital twins



Ag & Food Innovations for Everyday Life

Food

- Precision fermentation – dairy & meat
 - Steak and ribs (e.g., Juicy Marbles)
- Upcycled foods
 - Coffee (e.g., Atomo) and cocoa
- Apps for sustainability & nutrition



[Impact Score App](#)



Agriculture

- Vertical or hydroponic farming
- Precision farming
 - Smart indoor and outdoor gardens



<https://juicymarbles.com/collections/all-products>



Innovations in Transportation & Mobility

- EVs with greater range
- Electric planes and flying cars
- Micro-mobility
- Smart bus transport for cities
- EV, motorcycle and bike charging
 - Electric motorcycle battery swap
 - Electric bike detachable battery
 - EV sodium or potassium battery
- Electric boats and ships



Transport & Mobility in Everyday Life

- DrgnFly bike – detachable battery, 63 mi
- Cargo bicycles
- On-demand busses (Pantonium)
- Electric plane – Alice, by Eviation – WA
- Smart walker – stand assist (Nuvio)
- Electric boat engines
- Lucid Air (516-mile range)

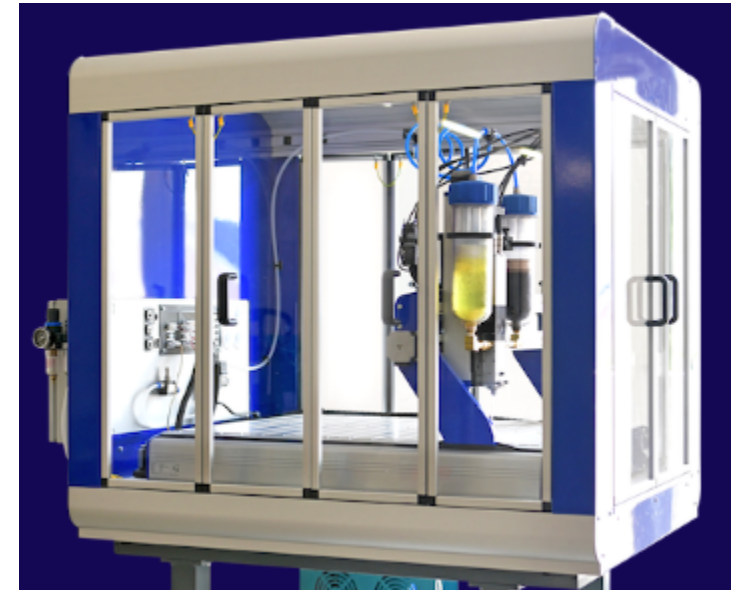


<https://pantonium.com/>



Innovations in Fashion

- Fabric and clothing recycling
- Clothes absorbing carbon dioxide
- Clothing from ag products or waste
 - Pineapple leaves, rose petals +
- Resale revolution
 - AI recommendation & smart shopping
 - AR for try-on
- Embedded commerce (shop in phone)
- 3D-printed clothing



Fashion Innovations in Everyday Life

- Bio-based polyester ([Kintra](#))
- CO2-absorbing fabric ([Cozterra](#))
- Cooling clothing ([Techniche](#))
- Fabric recycling ([Refiberd](#) and [Ravel](#))
- Marketplace (Vestiaire, Goodwill online)



Sharing, Discussion and Q&A

Questions

- How important are innovations we can use daily in caring for creation?
- What recent innovations are you using?
- What innovations would you like to see in the future?



Make a Difference

When enough people come together, then change will come and we can achieve almost anything. So instead of looking for hope - start creating it. Greta Thunberg

The work of preserving life that Noah undertakes is done under the direction of God; it requires planning and preparation; and it involves skillful labor, the use of human ingenuity and technology. – Douglas Moo

Closing Prayer

Lord, we thank You for Your gifts to us, especially our intellects, our imaginations, and our creativity. We pray that You will show us how to solve problems for people all over the world so that things like research and development will flourish, there will be an increase of small, innovative enterprises, and all life will thrive. Lord, use us in the answers to the problems that seem so large. Inspire our imaginations, our minds, and our wills. Amen.

