

THE FUTURE OF AGRICULTURE

Faster Science. Smarter Farms. Relentless Opportunity.

For more than three decades, Jim Carroll has helped farmers, growers, ranchers, agricultural companies, cooperatives, lenders and food organizations understand what comes next - and what to do about it.

30+

YEARS

2M+

PEOPLE

5

CONTINENTS

25-50+

HOURS OF CUSTOM RESEARCH

“The farmer of the future is part biologist, part data scientist and part roboticist, but is still 100% an optimist who plants a seed and believes in tomorrow.”



THREE DECADES INSIDE AGRICULTURAL CHANGE

A long record of deeply customized work across the agricultural value chain.

Jim's agriculture work reaches back to the mid-1990s: Internet disruption, biotechnology, e-commerce, precision farming, online activism and the early digital farm. By the 2000s came accelerating agricultural science, genomics and precision systems. Then drones, autonomy, connected livestock and AI.

The technologies changed. The central question did not: how does the farmer continuously adapt to a world that refuses to stand still?



THIS IS NOT GRANDDAD'S FARM.

Agriculture is already one of the world's most technologically sophisticated industries.

Artificial intelligence, robotics, machine vision, genomics, autonomous equipment, connected livestock, advanced weather intelligence, soil sensing and new production models are changing what it means to farm.



**Yesterday's farm ran on daylight.
Tomorrow's farm runs on data.**

ONE KEYNOTE. MULTIPLE WAYS INTO THE FUTURE.

These are not off-the-shelf speeches. They are directions selected and blended around the audience, event theme and strategic issues.

01

THE FUTURE OF AGRICULTURE

Faster science. Smarter farms. Relentless opportunity.

02

FARMING 2036

Resilience at the speed of change.

03

AGRICULTURE AT THE SPEED OF AI

What happens when intelligence comes to the farm.

04

24-HOUR FARMING

Robotics, autonomy and the intelligent farm.

05

THE FUTURE-POSITIVE FARMER

Innovation, opportunity and the world's oldest profession.

06

DESIGN FOR RESILIENCE, NOT JUST YIELD

Building the adaptive farm of tomorrow.

GROWTH. EFFICIENCY. NEW SCIENCE.

Three overlapping needs increasingly define agricultural innovation.

01

GROWTH

New markets, new crops, value-added products, new revenue models and new customer relationships.

02

EFFICIENCY

Automation, better data, precision inputs, smarter water use, predictive insight and intelligent operations.

03

NEW SCIENCE

Genomics, biology, artificial intelligence and rapidly evolving agricultural knowledge that must be absorbed faster than ever.

The future belongs to those who can learn faster than the world changes.

TWO FARMERS. SAME FUTURE. VERY DIFFERENT OUTCOME.

The difference is less about technology than mindset.

01

THE STUCK SKEPTIC

Protects yesterday's assumptions.
Waits for certainty before acting.
Sees new science and technology mainly as risk.
Defaults to familiar advice and methods.

02

THE FUTURE-POSITIVE FARMER

Experiments and learns continuously.
Builds optionality before it is needed.
Treats science and technology as tools.
Looks for growth, efficiency and new value.

The future doesn't happen to the future-positive farmer. They participate in building it.



THE FARM BECOMES AN INTELLIGENCE PLATFORM.

Technology does not replace agronomy, biology or judgement. It helps the farm sense change earlier, understand it faster and respond with greater precision.

01

AI + PRECISION AGRICULTURE

Sensors and drones feed AI systems that optimize fertilizer, pesticide, irrigation and field-level decisions.

02

PREDICTIVE CROPS + WEATHER

Weather, soil-quality and historical yield data improve crop planning, harvest timing and microclimate adaptation.

03

CONNECTED LIVESTOCK

Wearables provide early alerts for health, welfare, fertility and herd management.

04

AUTONOMY + 24-HOUR FARMING

Driverless tractors, weed-zapping robots and autonomous field systems address labour constraints and increase flexibility.

05

GENOMICS + CROP BREEDING

AI and genetics accelerate varieties adapted to specific climates, diseases and production goals.

06

WATER INTELLIGENCE

Soil-moisture and weather data optimize irrigation, reduce waste and manage agriculture's most precious input.



**Sense faster. Understand sooner.
Adapt earlier.**

24-HOUR FARMING

Farming no longer stops when the sun goes down.

Autonomous tractors, robotic field equipment, machine vision, precision spraying, drone scouting and robotic harvesting remove one of agriculture's oldest constraints: human operating time.

AUTONOMOUS TRACTORS

Continuous operations with less dependency on operator hours.

WEED-ZAPPING ROBOTS

Machine vision + targeted treatment reduce inputs and automate repetitive work.

DRONE INTELLIGENCE

Continuous scouting, stress detection and spatial crop analysis.

ROBOTIC HARVEST

Automation begins moving into one of agriculture's most labour-intensive phases.



Yesterday's farm ran on daylight. Tomorrow's farm runs on data.

DIRT BECOMES DATA. SCIENCE MOVES AT SOFTWARE SPEED.

Agriculture has always been science. Now the science is accelerating.

01

SOIL INTELLIGENCE

Moisture, organic matter, nutrient levels and microclimate conditions become measurable continuously.

02

PREDICTIVE IRRIGATION

Sensor and weather data help put water where it is needed, when it is needed.

03

GENOMICS

New seed varieties can be developed for specific climates, diseases and production goals.

04

BIOINFORMATICS

Data-intensive biology compresses discovery and improves the speed of agricultural R&D.

05

NEW CROP USES

Crops become feedstock for energy, materials, biomaterials and entirely new markets.

06

JUST-IN-TIME KNOWLEDGE

The pace of science makes specialized knowledge partners increasingly important.



Tomorrow's advantage might begin in a gene sequence rather than a field.

IF PEOPLE HAVE FITBITS, WHY NOT COWS?

Continuous livestock insight changes herd management.

Rumination collars and livestock sensors can provide continuous insight into individual animals and whole-herd performance.

HEALTH

Early signs of illness or distress.

ACTIVITY

Changes in movement and behaviour.

FERTILITY

Estrus and breeding-cycle insight.

NUTRITION

Feeding patterns and herd performance.

CALVING

Alerts when birth is approaching.

HERD INTELLIGENCE

Data across ages, stages and conditions.



Connectivity can restore the one-to-one relationship at scale.

RESILIENCE IS NOT RECOVERY.

It is the ability to continuously sense, adapt, learn and redesign before the next disruption arrives.

01

BIOLOGICAL

Soil health, biodiversity, crop diversity, genetics and managed grazing.

02

CLIMATE

Water intelligence, microclimate adaptation, drought and frost resilience.

03

OPERATIONAL

Automation, reliable labour substitutes, predictive maintenance and 24-hour farming.

04

INFORMATION

Sensors, decision systems, AI, predictive analytics and rapid knowledge access.

05

ECONOMIC

Input volatility, market optionality, new revenue streams and value-added models.

06

SUPPLY CHAIN

Traceability, logistics, regional resilience, inventory intelligence and food security.



07

HUMAN

Skills, curiosity, generational transition, collaboration and continuous learning.

THE RESILIENT FARM IS THE FARM WITH CHOICES.

DESIGN FOR RESILIENCE, NOT JUST YIELD

Optimize for the system, not simply the season.

01

HEALTHY SOIL

Cover crops, reduced tillage, organic matter and soil biology improve water retention, input efficiency and recovery.

02

CROP DIVERSITY

Diversity becomes a risk strategy across genetics, production models, markets, revenue streams and supply chains.

03

INTEGRATED LIVESTOCK

Managed grazing can improve root depth and nutrient cycling while connected livestock adds measurable insight.

04

AGROFORESTRY

Trees, shelterbelts, hedgerows and perennial buffers can strengthen erosion control, shade, biodiversity and microclimate.

05

WATER INTELLIGENCE

Moisture sensing, microclimate data and predictive irrigation make water management a strategic capability.

06

ECONOMIC OPTIONALITY

Value-added products, diversified markets, energy and new business models create choices when conditions change.



A system optimized only for maximum output can become fragile. A system designed for adaptability creates options.

WHY DO WE ASSUME FARMING HAS TO HAPPEN OUTDOORS?

When production becomes controllable, agriculture begins to look more like advanced manufacturing.

Indoor growing, hydroponics, LED systems, robotics, climate management and AI create year-round, programmable production. CEA does not replace conventional farming, but it changes what can be grown, where it can be grown and how consistently it can be produced.

When agriculture becomes controlled, predictable and programmable, it begins to look a lot like advanced manufacturing.

01

CONTROLLED ENVIRONMENT AGRICULTURE

Indoor structures provide the physical foundation for precision and control.

02

ROBOTICS + AUTOMATION

Autonomous systems manage tasks continuously, improving repeatability and scalability.

03

DATA SCIENCE + AI + IoT

Sensors and predictive analytics act as the central nervous system.

THE FARM BECOMES AN ENERGY PLATFORM.

Agriculture can increasingly produce, store and manage power.

Solar, storage, biogas, manure-to-energy, electrification and microgrids create a new role for agricultural operations in distributed energy systems.

01

PRODUCE

Solar, wind and biological feedstocks create distributed energy resources.

02

STORE

Battery systems add resilience, flexibility and new economics.

03

MANAGE

Microgrids and smart controls optimize when and how power is used.

04

CIRCULAR VALUE

Manure, waste and byproducts can become energy, fertilizer and new economic inputs.



**I found the future in manure in 2004.
Today, manure can literally become part
of the energy future.**

YOU CAN GROW THE PERFECT CROP AND STILL LOSE TO A BROKEN SYSTEM.

Resilience is increasingly measured from seed to shelf.

Trade, logistics, traceability, packaging, cold chain, retail, geopolitics and consumer expectations now sit inside the agriculture strategy. At the same time, farms are finding new ways to capture more value rather than simply produce more volume.

01

TRACEABILITY

Data and identity systems improve transparency across the agricultural supply chain.

02

TRADE + GEOPOLITICS

Tariffs, trade wars and market fragmentation can quickly rewrite demand and economics.

03

COLD CHAIN + LOGISTICS

Resilience depends on movement, storage, timing and the infrastructure beyond the farm.

04

DIRECT RELATIONSHIPS

E-commerce and social media can connect farmers more directly with customers.

01

VALUE-ADDED

Transform raw output into higher-value products.

02

SPECIALTY PRODUCTION

Use differentiated crops and production models.

03

NEW REVENUE STREAMS

Energy, biomaterials and agritourism add optionality.

THE RESILIENT FARM IS THE FARM WITH CHOICES.

DTN AGRICULTURE / THE PROGRESSIVE FARMER

Agriculture 2045.

700+ FARMERS & AGRICULTURAL PROFESSIONALS

The assignment: help a major agricultural audience understand what farming looks like when robotics, autonomy, drone intelligence and real-time spatial insight become routine.

The keynote explored weed-zapping robots, virtualized 24-hour farms, autonomous field operations and continuous crop intelligence - connecting big trends to the practical future of the farm.



CATTLECON 2024

3,000 ranchers. One rapidly changing industry.

3,000+ RANCHERS & INDUSTRY SUPPLIERS

AI. Connected livestock. Predictive herd management.
Automation. Consumer expectations. Information.

The keynote framed artificial intelligence and emerging agricultural technology as practical tools for the people who actually run livestock operations.

Ranchers are pretty conservative - but you were the best speaker we've ever had at our event!



THREE ROOMS. THREE STORIES.

The industry is agriculture. The keynote is never the same.



PURINA

500+ agricultural dealers

Precision agriculture, genomics, drones, generational change, data insight and the potential Amazonification of the dealer model.



SIMPLOT

400+ executives

Food, agricultural science, retail, consumer behaviour, marketing, product development and supply-chain change.



NORTHWEST FARM CREDIT

Farmers & producers

Genomics, intelligent packaging, drones, location intelligence and the financing implications of agricultural change.

THE PROOF IS IN THE ROOM.

Agriculture-specific feedback, plus broader comments on customization and delivery.

“You certainly challenged us as to the pace of change... at the same time that you inspired us to embrace its opportunities. You were outstanding!”

TEXAS CATTLE FEEDERS ASSOCIATION

“Ranchers are pretty conservative - particularly here in Texas - but you were the best speaker we've ever had at our event!”

TEXAS CATTLE FEEDERS ASSOCIATION

“We selected Jim because of his accessibility and passion to tailor his expertise to fit our vision. This combination produced exceptional results.”

AMSTEDRAIL

“I can think of no greater keynote speaker presentation through which I've sat... the thought leadership and action-provoking sentiments he evokes are truly remarkable.”

SAP

BUILT FROM YOUR INDUSTRY OUTWARD.

Not from a generic speech inward.

25-50+

HOURS OF CUSTOM RESEARCH

Client calls, industry reports, research papers, current news, agenda analysis, audience issues and sector-specific examples. No two presentations are the same.

**LISTEN → RESEARCH → MAP THE TRENDS → BUILD THE STORY → CONNECT
THE ROOM → LEAVE A PLAYBOOK**



DIRECT ACCESS TO JIM

You do not need a finished brief before getting in touch. Jim is always pleased to jump on a quick exploratory Zoom or phone call to learn about the audience and talk through possibilities.

CONTACT JIM

WATCH VIDEO

THINK BIG. START SMALL. LEARN FAST. SCALE WHAT WORKS.