



**APPLIED RESEARCH | PROJECT LEADERSHIP
PHYSICS & MECHANICS OF MATERIALS**

Jerome B. Johnson, Ph.D.

We cannot solve our problems with the same thinking we used when we created them.
– Albert Einstein

Dr. Jerome (Jerry) Johnson is the CEO of Coupi, Inc. with degrees in physics, mathematics, and geophysics (Ph.D.) and three decades of applied research experience as a senior engineer at Oceanographic Services, Inc., research scientist at the USACE-ERDC_CRREL, and research professor at the University of Alaska Fairbanks's (UAF) Institute of Northern Engineering (INE). Dr. Johnson solves problems related to Arctic infrastructure and engineering; military operations; space exploration and engineering; and improving resource utilization for government, academia, and the private sector.

Able to uncover solutions for complex problems facing today's businesses and institutions, Dr. Johnson has led teams on multi-phase, multi-disciplinary projects and contributed to developing exploration vehicles for NASA missions to asteroids and comets. He participated in the Mars Polar Lander Mission and was a participating scientist for the Mars Exploration Rovers Science Team. Dr. Johnson led the NASA Construction and Resource Utilization Explorer (CRUX) project, working with 60+ scientists and engineers from seven different organizations.

The Coupi Polyphysica discrete element method (DEM), a software product developed by Johnson and his business partner Anton Kulschitsky, is used to simulate interactions between micro-scale particles with natural and engineered objects to determine macro-scale processes that involve material failure, large-scale deformation, and bulk material handling. Focused on full-service solutions, Dr. Johnson and his team conduct experiments, data analysis, model development and simulation, instrument invention, and management to meet project needs. Through these methods, they can identify critical factors challenging project objectives and develop solutions to avoid, eliminate, and improve the process and outcomes.

Dr. Johnson has managed projects up to \$40M in size, working for seven different organizations and leading more than 60 scientists and engineers. His client list includes NASA, Dept. of the Army, Michelin Tire Company, Murdock Foundation, Honeybee Robotics, Alaska Dept. of Energy and Oceanographic services and many more. He has been contracted by pharmaceutical companies, and a variety of different industry manufacturers to improve process and engineering issues standing in the way of their product and process success, isolating factors with fluids, solids, granular materials, and surface properties, to optimize product development and profits.

A patent holder and published author, Dr. Johnson holds four patents, served as a scientific editor for the Journal of Glaciology, a reviewer for several scientific journals and research funding organizations and as a judge at Alaskan science fairs. He has been awarded a Department of the Army Research and Study Fellowship, numerous Department of the Army research commendations, Department of the Army Superior Civilian Service Award, induction into the CRREL Gallery of Distinguished Employees, and an ERDC team award for contributions to the National Missile Defense Technical Team. A recipient of the Haley Space Flight Award for the Mars Rovers Mission, Dr. Johnson also received a NASA (Langley Research Center) Director's Group Award for the Asteroid Redirect Mission concept study.

**Available as a keynote speaker and expert for media interviews on topics related to applied research, renewable energy, hydrokinetic research, particle dynamics, planetary surface exploration and solving complex engineering problems using simulation-based modeling. To discuss your need, contact Jerry at jbjohnson@coupi.us.*

HISTORY

CEO | FOUNDER

Coupi, Inc., Fairbanks AK

Providing unique consulting, simulation services and access to physics based Polyphysica particle dynamics CAE program, supporting customers by problem solving challenges related to manufacturing, processing, engineering, and optimization.

RESEARCH PROFESSOR

Institute of Northern Engineering University of Alaska, Fairbanks, AK

Conducted physical, thermal and mechanics studies on snow, ice, permafrost, granular media and space mission engineering and sciences.

FOUNDING DIRECTOR

Alaska Hydrokinetic Energy Research Center, Fairbanks, AK

Building applied research and engineering capacity, infrastructure, and technology to facilitate the use of river and tidal hydrokinetic power generating devices in Alaskan conditions.

GEOPHYSICIST

USA Cold Regions Research and Engineering Lab, Fairbanks, AK

Responsible for conducting physical, thermal and mechanics studies on snow, ice, permafrost, granular media, military engineering, and space mission engineering and sciences.

EDUCATION

PhD – Geophysics

University of Washington

Post-Graduate Study – Geophysics

University of Alaska

BA – Physics, Math

Central Washington State College