

Minimally Structured, Modular, Prefabricated Vertical Farm Designs 2.0

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Controlled Environment Agriculture Center, 1951 E Roger Rd

Joel Cuello PhD; Professor ABE, CEAC Faculty

College of Agriculture & Life Sciences & College of Engineering

The University of Arizona

He doesn't like walls, hunger or intolerance. He likes creativity, travel, communicating, learning, imagination, feeding the world, thinking about clean water! In short, Professor Cuello is a renaissance man. Joel Cuello has dedicated his career to finding ways to solve existential world problems before they become irreversible: food production and security, water purification, energy and environmental sustainability, eradication of thirst and hunger, and the fostering of cross cultural understanding. These are lofty, complex, and at first glance such enormous problems that one would think them to be unsolvable. But, Cuello is a pragmatist—he is after all an engineer. And so, he is addressing these issues bit by bit, corner by corner, eventually producing a mosaic of solutions. Energy conservation? Algae; Hunger mitigation? Bioproduction systems. Sustainability? recycling of water, nutrients, and the usage of novel lighting sources to sustain plant growth in controlled environments. Environmental degradation? Designing self-contained, portable environments for food production on earth and in Space. Needing creative minds to solve future engineering challenges? Teaching and fostering developing minds internationally.

These are some of the things that Joel Cuello has spent doing during his career, and today he will share with us his focused vision and engineering solutions to vertical farm designs as a solution to the impending, global food shortages.

"controlled environments are definitely going to be essential in..producing solutions for sustainable food production...we need...controlled environments where you regulate (environment) ...to produce crops in a very sustainable way...so nothing is wasted". Joel Cuello, PhD; Abu Dhabi, 2012

<http://www.tbp.org/pubs/Features/Sp13Cuello.pdf>

<https://www.youtube.com/watch?v=YNmUPHoU9lg>

<https://www.youtube.com/watch?v=IPjYyZoi3HU>



BioImaging: *Applying imagination to engineering solutions to address food and energy production world-wide through faculty research efforts from the University of Arizona.*