FAST FORWARD
INVENTING THE FUTURE

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MEET THE INNOVATORS, DISCOVER THE INNOVATIONS

Fast Forward … Inventing the Future showcases innovators and innovations from around the world, whose vision and initiative is reshaping our world.

Homaro Cantu, ***Chef and Inventor***
Moto Restaurant and Cantu Designs, Chicago, Ill.
Innovative chef Homaro Cantu, is executive chef at Moto Restaurant as well as founder of Cantu Designs, a firm looking to take the dining experience to a new level through design and engineering. Through this company, Cantu has filed numerous patents covering diverse fields such as dining items, cookware and edible surfaces. Cantu has also worked with NASA to develop a "food replicator"—a converted ink-jet printer that produces edible prints. On display is a case that he uses to conceal his patent-pending process for printing edible paper, as well as some of his innovative utensil designs. Cantu's radical notions of food could change the way we feed people in crisis, disseminate medicine to stem an epidemic and sustain astronauts on long missions.

Aubrey de Grey, ***Biogerontologist***
Methuselah Foundation, Cambridge, United Kingdom
Trained as both a computer scientist and a biologist, de Grey is conducting biological research in order to radically extend the human life span. He is the founder of the Methuselah Mouse Prize, a scientific competition designed to draw attention to the ability of new technologies to slow and even reverse the damage of the aging process.

Dickson Despommier, ***Microbiologist and Medical Ecologist***
Columbia University, New York, N.Y.
Despommier is leader of the visionary Vertical Farm Project that proposes to grow food in high rise buildings in urban centers, helping to feed increasing urban populations while also allowing sprawling farmland to be returned to nature. Inside the gallery, guests will see a large scale model of Despommier's vertical farm concept and also play an interactive game that will teach them more about the possibilities of urban agriculture.

Peter Diamandis, ***Commercial Space Entrepreneur***
X-Prize Foundation, Santa Monica, Calif.
As chairman and CEO of the X-Prize Foundation, Diamandis offers prizes of $10 million or more for projects that benefit humanity. He is also CEO of Zero Gravity Corporation, a commercial space company that launches FAA-certified parabolic weightless flights for the general public using a Boeing 727 aircraft. More recently, he co-founded the Rocket Racing League, a hybrid of Indy car racing and rocket-powered flight.

Steve Fambro and Aptera; The Aptera 2e
Carlsbad, Calif.
The three-wheeled Aptera 2e is one of the most advanced electric passenger vehicles in the world. The vehicle was created by Steve Fambro, co-founder of California-based Aptera Motors. The word "Aptera" is Greek for "wingless," a reference to the aircraft inspired design and construction of the two-door vehicle. The Aptera 2e is powered completely by electricity. It has a range of roughly 120 miles and recharges in eight hours using a standard 110 volt wall outlet. It can accelerate from zero to 60 miles per hour in under 10 seconds and can reach speeds of more than 85 miles per hour.

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Matt Fisher, ***Robotics Entrepreneur***; KumoTek KT-X:
Richardson, Texas
The *KT-X* bipedal robot is the latest robot to emerge from the creative lab of Matt Fisher and Texas-based KumoTek Robotics, and it's the first bi-pedal robot platform of its kind to be offered for sale in the United States. The *KT-X* stands 13 inches tall and has more than 75 preprogrammed acrobatic motions and was designed to offer an entertaining, low-cost alternative to high-end robotics, stylishly combining sleek design and cutting-edge robotics engineering. The robot is capable of walking, running, somersaulting and standing up from a face-up or face-down lying position. It can even be programmed to pull itself up autonomously after it has fallen over. Museum guests will see two robots perform and interact with each other.

Ryan Genz and Francesca Rosella, ***Interactive Fashion Designers;*** Galaxy Dress
CuteCircuit, London, United Kingdom
CuteCircuit's garments and accessories merge the fields of wearable computing and telecommunication technology, creating an exciting new interface for personal telecommunication. Their Hug Shirt allows a mobile phone to deliver "hug data" to a friend's phone that it is then seamlessly transmitted via Bluetooth to his or her shirt, resulting in the wearer getting an actual squeeze. On display in the exhibit is their "Galaxy Dress," the world's largest, wearable LED display.

Lonnie Johnson, ***Nuclear Engineer and Inventor***
Johnson Research and Development, Atlanta, Ga.
Johnson is best known as the rocket scientist that invented a toy—the Super Soaker® Water Gun—and he has more than 100 patents in his name. Guests will view Johnson's first prototype for the Super Soaker, made from a used water bottle, some plastic tubing and duct tape. With his start-up companies, Excellatron Solid State and Johnson Electro-Mechanical Systems, Johnson is now developing thin film batteries for cell phones and aerospace applications.

Ayanna Howard, ***Robotics Engineer***
Georgia Institute of Technology, Atlanta, Ga.
Howard is associate professor and founder of the Human-Automation Systems (HumAnS) Lab at Georgia Institute of Technology. Her goal is to make robots better at helping people—better at not only gathering information, but also evaluating it. Her work at NASA's Jet Propulsion Lab includes the SmartNav Mars rover, which is designed to be more independent in its explorations of the Red Planet. As well, her trio of Snomote rovers will collect data in regions of extreme temperatures like Antarctica, which will help develop solutions to climate change. A model of a Snomote rover is on display.

Sergi Jordà, ***Computer Scientist and Musician;*** The Reactable
Pompeu Fabra University, Barcelona, Spain
Jordà is part of the Music and Technology Group at the Pompeu Fabra University in Barcelona, where he directed the development of the Reactable, a multi-user, interactive, improvisational electronic musical instrument, now used in musician Bjork's world tour. The instrument offers seemingly infinite musical possibilities, and guests can try their hand at music making with Jordà's Reactable inside the *Fast Forward* gallery.

Zack Simpson, ***Software Engineer, Artist, and Molecular Biology Researcher***
Mine-Control, Austin, Texas
Simpson believes that art can be both playful and thought-provoking. Using unique technologies incorporating the entire body, a broad knowledge of science and a long history of game development, his company Mine-Control turns viewers into participants and teaches them something along the way. He is also a fellow at the Center for Systems and Synthetic Biology at University of Texas-Austin. In *Fast Forward* guests can experiment with Simpson's *Mariposa,* a wall projection interactive were they can see butterflies land on their shadows.

William Kamkwamba, ***Student and Entrepreneur***
Masitala, Malawi
It only took 20-year-old William Kamkwamba a library book, some blue-gum trees, discarded bicycle parts and an inspired idea to become a sensation in his home country. Kamkwamba, who lives in a small African village in Malawi, began building windmills at age 14, after he had to drop of out high school because his family could not afford the tuition cost of $80 a year. Now his family has three windmills on their property, supplying power to their home for the first time. Since then, Kamkwamba has offered his assistance to others, and has helped to build a windmill for his local school and worked on powering his entire village.

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