Ah-Hyung (Alissa) Park has been called the “Carbon Lady” for good reason. She is considered to be one of the leading experts in the many forms carbon takes as humans transform and move it through society and the environment, and her path-breaking work may very well help pave the way to a future in which society obtains energy from a wide range of sustainable sources and deals with its excess carbon in surprising ways.

“The future of humanity depends on our ability to use energy and materials with an eye toward environmental sustainability,” said Park, Lenfest Junior Professor in Applied Climate Science and associate director of the Lenfest Center for Sustainable Energy. “This will inevitably have to include efficient extraction of energy and materials from fossil resources, biomass, and municipal solid wastes.”

Whether carbon takes the form of a lump of coal or a used plastic soda bottle, or becomes the end result of carbon capture and sequestration, Park looks for methods to improve the ways that carbon circulates through the industrial and environmental processes. “The reason we take so much carbon out of the ground is because of our needs for energy and materials,” said Park. “If we can find a way to keep the carbon circulating above ground while providing energy and materials, we won’t have to take so much out of the ground.”

More than seven gigatons of carbon produced by human activity around the world ends up in the atmosphere each year, primarily in the form of the greenhouse gas carbon dioxide. Being able to manage our increasingly prominent role in the global carbon cycle is an important and innovative step toward the sustainable future of our society.

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