

VA Biofabrication Community of Science

Speaker Series: Dr. Y. James Kang

Wednesday, June 8, 2022, 2:30-3:30pm ET

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Y. James Kang, DVM, Ph.D.

Professor and Director, Regenerative Medicine Research Center at Sichuan University; Director and Chief Scientific Officer, Sichuan Regenerative Medicine Research and Technology Center; Professor and Chief Scientist, Tennessee Institute for Regenerative Medicine, Memphis, Tennessee

Research Interests: Regenerative medicine, focusing on target-specific tissue injury signaling and tissue repair mechanism activation.

Presentation Title: Bringing 3D Bioprinted Blood Vessels from Lab to Patient

Presentation Overview: Dr. Kang's research team has been engaged in 3D bioprinting and invented a living cell-based bioink, Biosynsphere, and developed a series of 3D bioprinters. Among these bioprinters is a vascular graft printer. Using this printer and bioink, Dr. Kang's team has created a novel cell-based vascular graft biofabrication technology. The product was successfully implanted as an abdominal aorta interposition replacement graft into Rhesus monkeys and miniature pigs. The bioprinted vascular grafts were composed of adipose-derived multipotent stromal cells, and once implanted into monkeys or pigs, a naturally identical blood vessel structure was quickly developed, performing the expected biological function in the monkeys. This novel cell based vascular graft is now undergoing clinical trials approved by Ministry of Health of China.

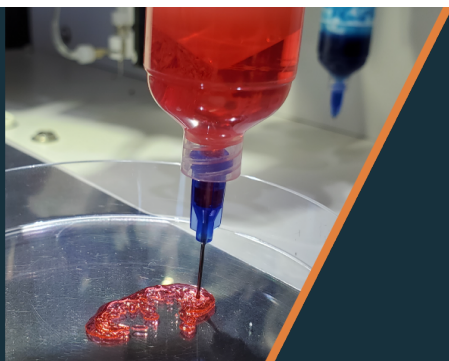
About: Dr. Kang received his Ph.D. in Toxicology and Cell Biology at Iowa State University and completed postdoctoral training in Biochemistry and Molecular Biology at Cornell University Medical Center. He served several NIH study sections from 1997 to 2006, and other federal agencies including USDA, US-EPA and VA from 1996 to 2005. He's made major breakthroughs in 3D bioprinting of cell-based vascular grafts for human implantation. He also works on cardiovascular regeneration, mineral manipulation of cardiovascular disease, liver fibrosis and cirrhosis, and non-human primate models of human diseases.

Biofabrication at VA:

- Biofabrication offers Veterans **point-of-care solutions** for the customized restoration of health.
- Through the VA Biofabrication Community of Science (BioFab CoS), VA is establishing an integrated infrastructure that aims to serve **Veterans first** with patient-matched biofabricated solutions.

Biofabrication CoS Provides:

- A **platform to connect** for internal and external stakeholders across the biofabrication continuum to learn, ideate, research, and build solutions for Veterans, together.
- A **set of practices** to develop biofabrication solutions across every stage of the development process and the eventual goal of first in-human clinical trials.
- **Regular touchpoints** to stay up-to-date on internal and external activity in the biofabrication space.



VA Biofabrication CoS Speaker Series

The VA Biofabrication CoS Symposium hosts a monthly speaker series to engage and highlight the work of biofabrication researchers, practitioners, visionaries, and innovators like you and engage in discussion to grow VA's biofabrication efforts. Contact us at: vahbiofabricationcos@va.gov if you are interested in sharing your work.

Learn more about the VA Biofabrication CoS by visiting the website: <https://www.va.gov/INNOVATIONECOSYSTEM/views/solutions/BioFab.html>



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