



## Company Overview

PolyAurum is a pre-clinical stage biotechnology company focused on developing and commercializing biodegradable gold nanoparticles (BGNP) for diagnostic and therapeutic indications including cancer. Enhancement of radiotherapy with BNGPs has the potential to increase cancer-free survival and improve patient quality of life.

## The Problem

Roughly half of all cancer patients receive radiotherapy resulting in \$5.8 billion spent on such treatments per year. However, the average 5-year survival rates are still too low for many cancers. The high doses of radiotherapy often needed to destroy a tumor can cause significant localized damage to nearby healthy tissue. The use of an adjuvant that increases radiation absorption selectively in tumors could allow lower doses of radiotherapy to have a good therapeutic effect with less harm to healthy tissue.

## The Solution

Gold strongly enhances the absorption of radiation. In the past, gold nanoparticles have been developed that specifically target tumors, enhance radiation absorption, and have an excellent therapeutic effect. However, these gold nanoparticles are large and cannot be excreted, leading to accumulation of gold in sensitive organs such as the kidneys and to potential long-term toxicity. Small gold nanoparticles that are easily excreted do not accumulate in the tumor long enough for a good therapeutic effect. PolyAurum utilizes the best of both and encapsulates small gold nanoparticles in a biodegradable polymer, allowing enough gold to accumulate in the tumor for a good therapeutic effect, but also allowing easy excretion in the urine as the polymer degrades. PolyAurum's BNGPs can also be used as contrast agents for diagnostic imaging techniques such as computed tomography or photoacoustics.

## Team Information

Debra Travers is President and CEO of PolyAurum LLC. She had a 30+ year career as a strategic healthcare executive and entrepreneur with diverse and progressive product development and commercialization experience in global pharmaceutical companies.

Dr. David Cormode is an Assistant Professor in the Department of Radiology. He has over 10 years of experience in the development of novel metal nanoparticles. He has published over 60 papers, primarily on the topic of nanoparticle contrast agents.

Dr. Rabe'e Cheheltani is a postdoctoral fellow in the Department of Radiology. Her research is focused on nanoparticles as contrast agents in medical imaging. Her previous experiences include nanoparticles for targeted drug delivery and imaging methods.

Dr. Jay Dorsey is an Assistant Professor of Radiation Oncology and physician-scientist. He is a board-certified Radiation Oncologist with expertise in CNS cancers and radiosurgery. He is PI of a translational research laboratory.

Prof. Andrew Tsourkas is a Professor of Bioengineering and the Associate Director for the Center for Targeted Therapeutics and Translational Nanomedicine. He has 15 years of experience in the development of nanoparticles for therapeutic and imaging applications.