



Actionable coagulation profiling at the point-of-need

## Precision Coagulation Profiling at the Point-of-Need: A New Era in Bleeding and Thrombosis Prevention





## Seemantini Nadkarni, PhD

Principal Investigator, Wellman Center for Photomedicine, Mass General Brigham; Associate Professor of Dermatology, Harvard Medical School snadkarni@mgh.harvard.edu

Impaired blood coagulation is a frequent cause of bleeding and thrombosis following acute trauma and surgery, and is a leading cause of preventable in-hospital death. Early identification and frequent monitoring of defective coagulation are essential to manage the delicate balance between bleeding and clotting in patients at risk. However, traditional laboratory tests are slow and reflect historic coagulation states at the time of blood collection – not real-time at the point of treatment. These delays can significantly increase mortality risks. The staggering impact of impaired coagulation on patient outcomes thus demands timely, decisive, and actionable coagulation profiling at the point-of-care to enable precise coagulation management and prevent fatal complications.

To address this gap, we developed iCoagLAB, a hand-sized coagulation profiler that rapidly delivers results at the patient's bedside. iCoagLAB works by measuring clot viscoelasticity from light scattering patterns (laser speckle) to comprehensively quantify the patient's coagulation function. Using just 25µl of blood, within 10 minutes iCoagLAB delivers comprehensive coagulation parameters and decisive scores for bleeding or thrombosis risk, enabling physicians to make timely, tailored and data-driven decisions. on transfusions or anticoagulant therapy.

Since its first demonstration in 2014, iCoagLab has been validated in over 2,500 patient samples, featured in 30+ peer-reviewed publications, and is protected with a robust IP portfolio. Now advancing toward scale-up manufacturing and regulatory approval by our new company, Coalesenz, Inc., iCoagLab addresses a growing \$6B global coagulation testing market. With rising cardiac interventions and an aging population, the cardiovascular segment alone is projected to grow ~10% annually. Given the critical need, high clinical impact, and market potential, our initial focus is on cardiovascular patients. Following clinical adoption in the cardiovascular market, we will expand into trauma, liver transplant, high-risk orthopedic and obstetric surgeries, stroke clinics, and neonatal cardiac units.

With a first-in-class solution, strong clinical data, and clear commercial traction, the iCoagLAB technology is poised to lead the future of precision coagulation diagnostics.