A whole new perspective on ultrasound.

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Vega® automated, hands-free, high-throughput ultrasound system

The world's first hands-free, preclinical automated high-throughput ultrasound system.

Designed with researchers in mind, our Vega® hands-free ultrasound system is the next generation of preclinical ultrasound imaging. It incorporates an innovative approach to ultrasound that produces high-resolution 2D and 3D images of multiple mice in just minutes.

This powerful ultrasound system gives you:

- Easy-to-use, hands-free transducers
- High-speed, high-throughput performance
- Widefield imaging
- Multiple modes for multiple applications
- Flexible visualization and analysis software
- Small benchtop footprint

Ultrasound without a sonographer.

A hands-free system delivers more consistent results because it removes the need for a handheld transducer. Unlike traditional ultrasound systems, the Vega system uses a bottom-up approach with the transducers located under the imaging stage.

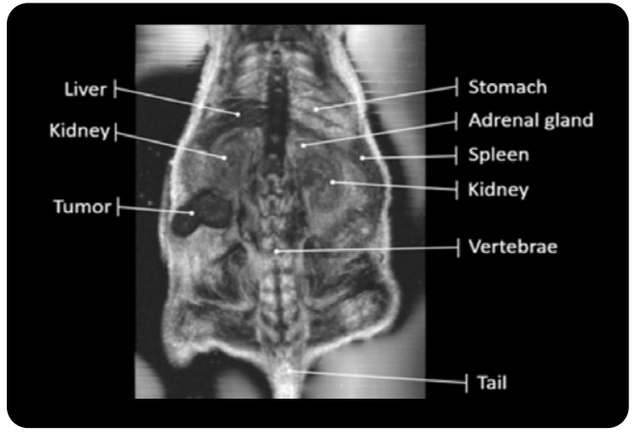
The automated positioning of the transducer enables you to scan across the whole body, producing high-resolution 3D data that looks more like MRI images than traditional ultrasound.

Vega hands-free ultrasound—fast, easy, reproducible

- **Easy to use** – Requires a minimal amount of training, with no dedicated sonographer required. Just place mice on the imaging stage and press Acquire.
- **Consistent results** – Removes operator variability, resulting in more consistent data.
- **More accurate data** – By removing physical contact between the transducer and the animal, tissues are not distorted or warped during 3D image acquisition.
- **Enables widefield imaging** – Allows whole-subject imaging for visualizing effects of disease or therapies on specific organs or surrounding tissues.
- **High speed** – Automated hands-free transducers enable fast, consistent scanning.
- **Streamlined workflow** – Users can prep the next set of subjects while the scanner is operating.

See more, get more with widefield ultrasound.

Unlike traditional ultrasound, the Vega system enables widefield imaging in a single scan—in less than a minute. This unique design is important for visualizing effects of disease or therapies on organs and surrounding tissues, reducing the risk of missing obscured pathologies as can happen with conventional handheld transducers. This gives more anatomical context to your ultrasound studies.



Example of Vega's widefield imaging capability showing detailed anatomy. Coronal plane image reconstructed from widefield 3D ultrasound data.

Fast, high-throughput ultrasound with the push of a button.

With its automated transducers integrated under the imaging stage, the Vega system is the fastest ultrasound scanner on the market—with most scans taking less than a minute. Its three-bay imaging stage enables sequential scanning of three mice at a time, accelerating your imaging studies even more. And while one set of subjects is being scanned, the next set can be prepped on the benchtop, further streamlining your imaging workflow.

Three-mouse imaging stage

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Many modes, many applications.

Created for maximum flexibility, the Vega system comes standard with two integrated transducers for various scanning modes:

- A high- and a high/low-frequency wobbler transducer for high-resolution scanning and acoustic angiography vascular imaging
- Linear-array transducer for fast deep-tissue imaging, elastography, and cardiac imaging

Detailed view

Transducer type	Imaging mode	Application(s)
Wobbler: high frequency	▪ B mode	▪ Tumors ▪ Individual organ systems
Wobbler: high/low frequency	▪ B mode ▪ Acoustic angiography (AA)	▪ Tumors ▪ Individual organ systems ▪ Vascular
Linear array	▪ B mode ▪ M mode ▪ 4D mode ▪ Shear-wave elastography (SWE)	▪ Tumors ▪ Cardiovascular/cardiac function ▪ Assessments of tissue stiffness

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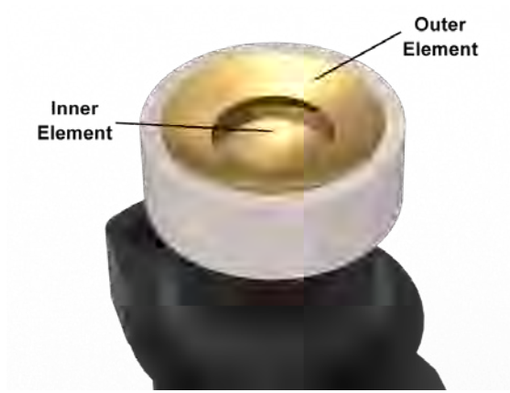
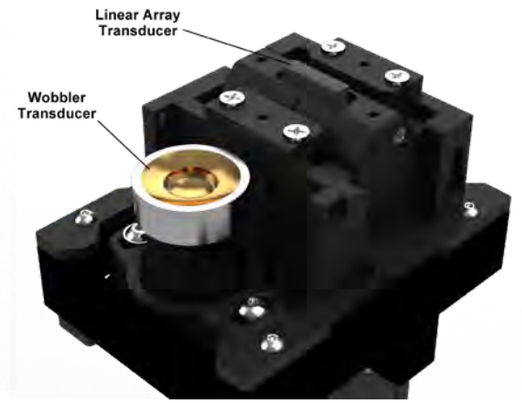
Detailed view of the transducers

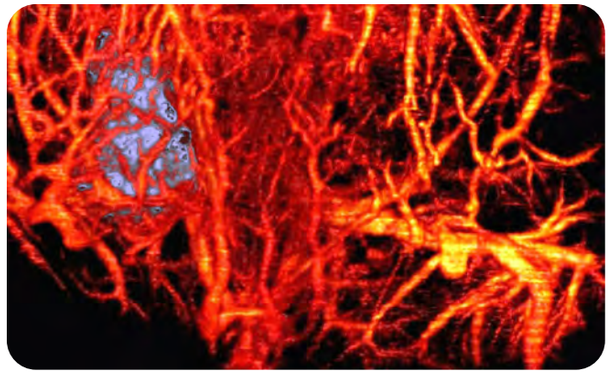




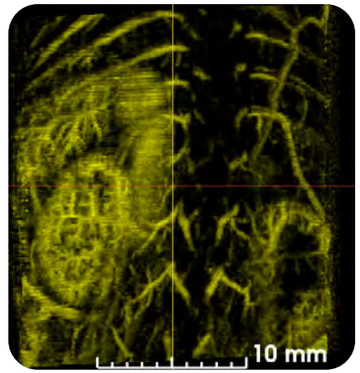
Close window

Explore microvasculature with acoustic angiography.

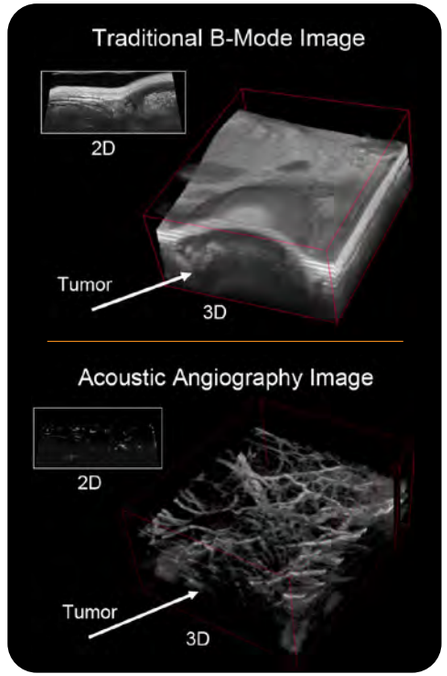
With acoustic angiography, you can visualize and quantify tumor vessel-network architecture and density or reveal response to therapy before tissue changes. Through use of injectable VesselVue® contrast agents, acoustic angiography with the Vega system enables high-sensitivity imaging of microvasculature, collecting images of 3D microvessel trees in minutes and 2D images in less than a second.



Acoustic angiography showing vasculature surrounding tumor.



Acoustic angiography capture of a mouse kidneys' vasculature and surrounding structures.



(Top) A traditional B-mode image showing 2D and 3D representations of a tumor. (Bottom) The same tissue as above imaged with acoustic angiography mode.

**Note that the only features seen are microvessels in and around the tumor, while all other tissue appears invisible. This allows tissue vascularity to be quantified.*

Measure tissue stiffness with shear wave elastography.

Tissue stiffness evaluated through manual palpation has historically been used as a marker to access disease states, but this technique is qualitative and doesn't provide any quantitative measurement behind the disease. Now researchers can assess tissue stiffness associated with liver fibrosis, renal disease, and much more noninvasively, in a matter of seconds, with the Vega ultrasound system's shear wave elastography (SWE) capability.

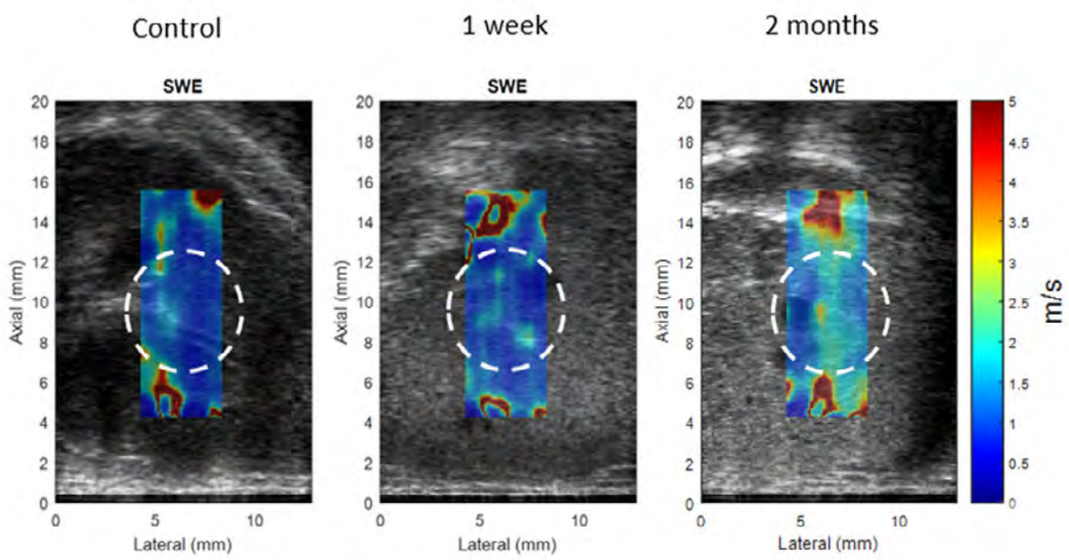


Image represents liver stiffness from a NASH mouse model. The SWE overlay on grayscale B-mode provides a window into the tissue's mechanical properties at that location.

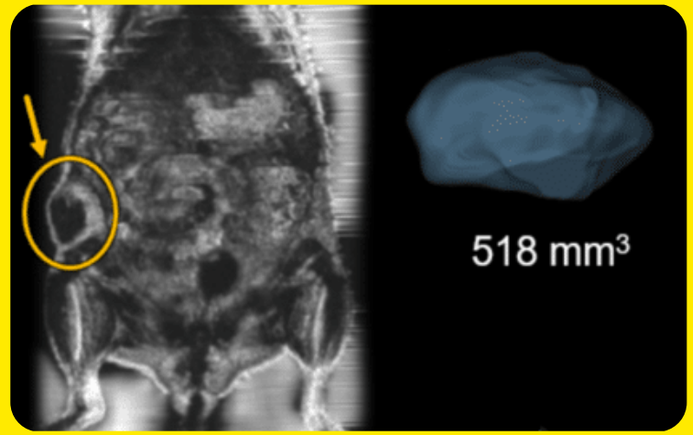
For the applications you're focused on.

With multiple scanning modes, the Vega ultrasound system delivers the flexibility you need to advance your research and drug development studies. Measure tumor volume, visualize microvasculature, quantify tissue stiffness, evaluate drug cardiotoxicity, and more. **Click the application for further insights.**

Oncology | Liver | Kidney | Cardiology | Radiation research | Regenerative medicine

Oncology

- Quantify tumor volume
- Visualize tumor in the context of broader anatomy
- Detect deep-tissue tumor and metastases
- Visualize tumor microvasculature



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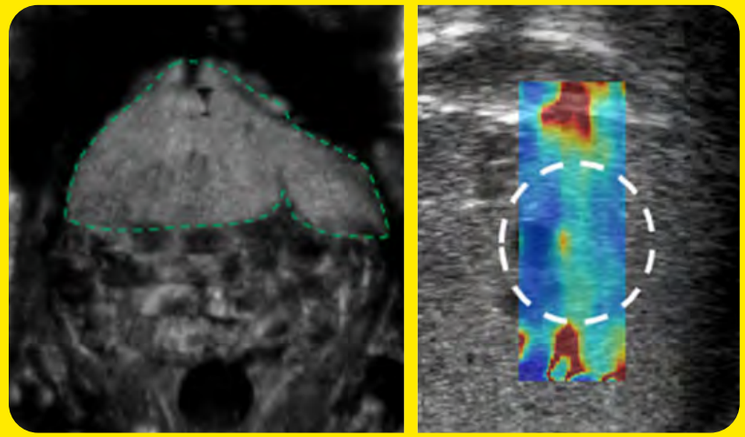
Liver

- Measure liver stiffness
- Quantify steatosis
- Evaluate liver tumors
- Visualize liver vascularity



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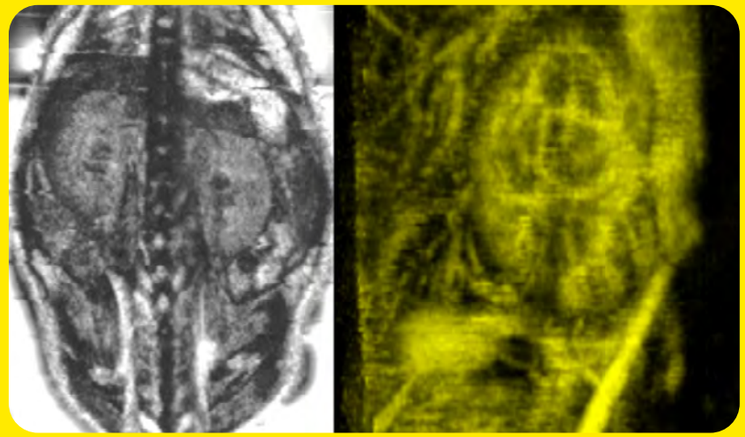
Kidney

- Quantify kidney volume
- Assess changes in kidney perfusion
- Study kidney microvasculature



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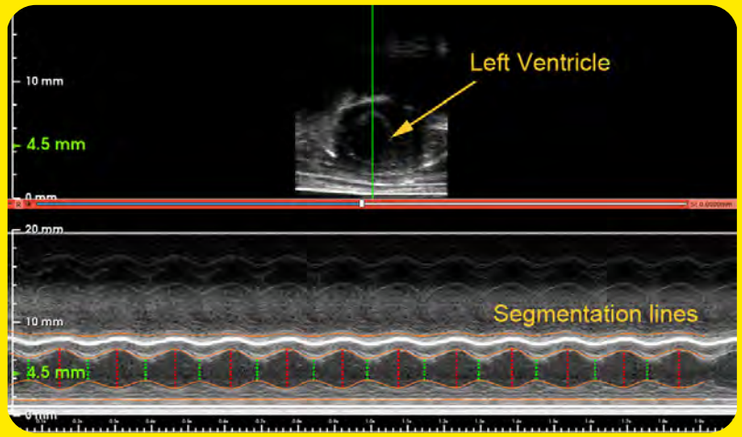
Oncology | Liver | Kidney | **Cardiology** | Radiation research | Regenerative medicine

Cardiology

- Evaluate global systolic function, including LV ejection fraction, stroke volume, and cardiac output
- Use cardiac heatmaps to easily locate the heart
- Perform 3D/4D reconstructions without ECG
- Assess drug toxicity



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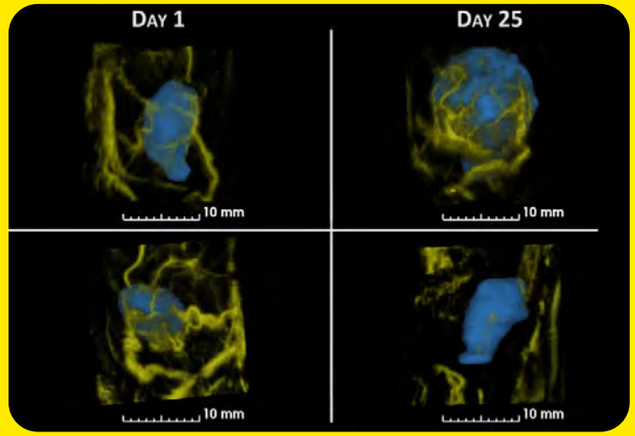
Oncology | Liver | Kidney | Cardiology | Radiation research | Regenerative medicine

Radiation research

- Noninvasively image radiation-induced changes to tissue
- Track volumetric tumor response
- Evaluate vascular remodeling



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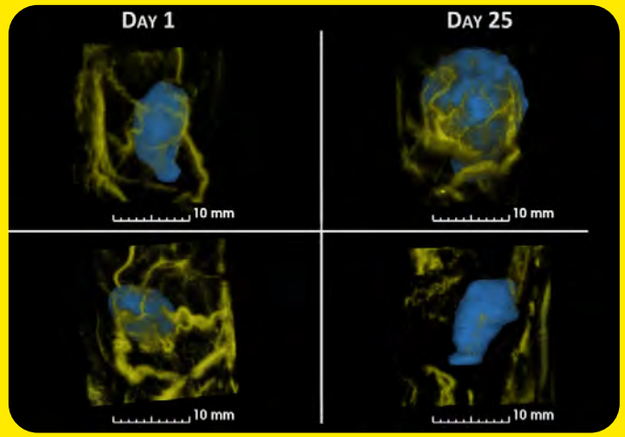
Oncology | Liver | Kidney | Cardiology | Radiation research | Regenerative medicine

Regenerative medicine

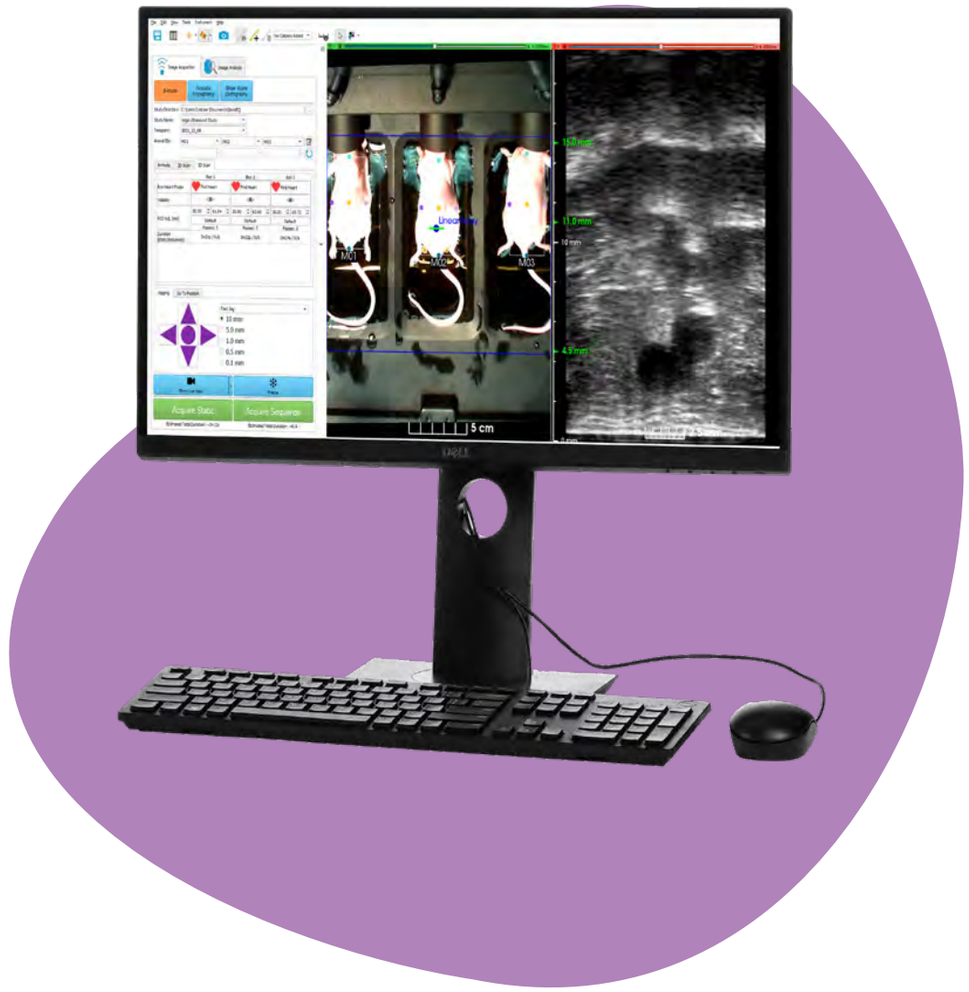
- Evaluate scaffold vascular
- Track cell seeding over time



Visualize, acquire, explore, quantify.

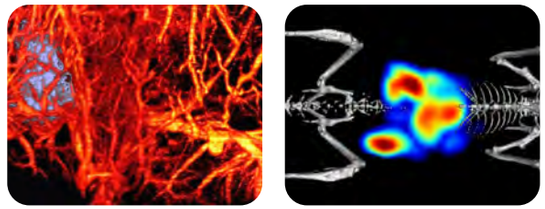
Built on 3D Slicer, an open-source software platform for image processing and 3D visualization, SonoEQ™ is highly intuitive with a user-friendly interface that's easy to learn and use. And it delivers:

- Quantification tools, including simple linear caliper measurements
- Complex geometrical contouring tools for abnormally shaped structures
- A site-wide license so researchers can analyze data from any location with their personal laptops
- Ability to export data in multiple formats, for better decisions across your lab



Discover our wide range of leading *in vivo* imaging solutions.

Imaging *in vivo* can have a profound effect on your understanding of molecular and physiological research across a broad range of disease models, as well as accelerating preclinical development of therapeutics noninvasively, in real time.



Instruments

Ultrasound

- Vega® hands-free, automated, high-throughput system

Optical

- IVIS® Spectrum 2 series 2D and 3D optical systems with integrated CT*
- IVIS Lumina S5 and X5 high-throughput, high-sensitivity benchtop 2D optical imaging systems with integrated x-ray**
- IVIS Lumina III series benchtop 2D optical imaging with integrated X-ray**

MicroCT

- Quantum GX3 high-speed, high-resolution, low-dose microCT system

Imaging reagents

Ultrasound Reagents

- VesselVue® injectable microbubble contrast agent for vascular imaging

Optical Reagents

- IVISbrite™ bioluminescent substrates and cell lines
- IVISense™ fluorescent probes, labels, and dyes

** Available on the IVIS SpectrumCT only. ** Available on the IVIS Lumina X5e and IVIS Lumina III XRMS only.*

Count on our support.

Our experienced scientists and support experts are here to help you. From application support, training, and troubleshooting to helping you select the best imaging system for your research, we have the resources you need to get the most out of your *in vivo* imaging studies.

Application support

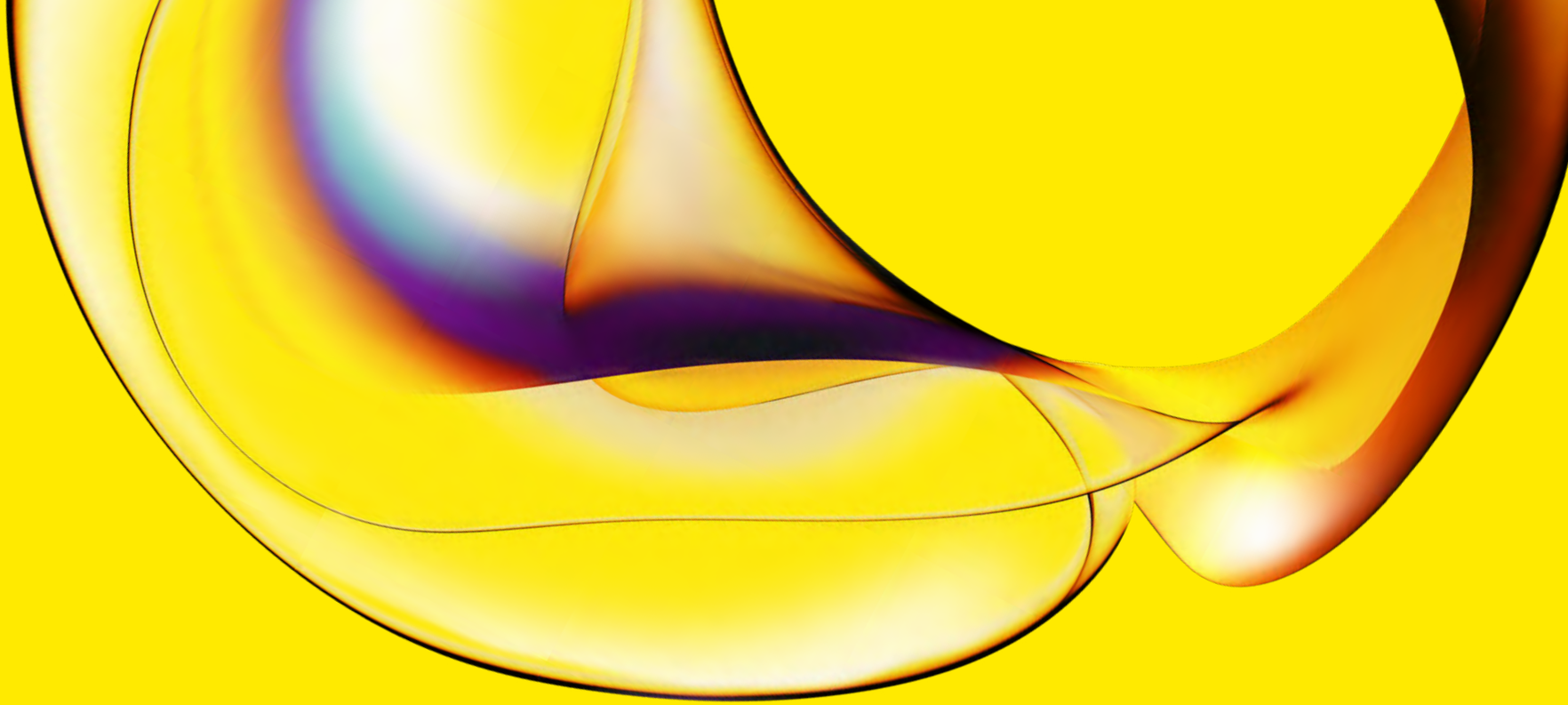
Offering worldwide support, our dedicated applications team, with their in-depth scientific knowledge, can help you achieve your research goals. By offering unmatched support, our application scientists are your main contact for issues ranging from development of imaging protocols to training and education.

Training and education

Get the most from your *in vivo* imaging instrument by learning from the experts. We offer basic and advanced training at your facility, as well as classroom training through *In Vivo* University, so you can broaden your knowledge, share with fellow researchers, and learn from field application scientists.

Service

Our global service engineers are available to help you with installation, preventative maintenance, technical guidance, and any repair services to ensure your imaging system operates as optimally as possible to meet your *in vivo* imaging research goals.



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