White Papers in Biophotonics

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There are many biophotonics devices and technologies that already contribute to understanding life and generating human wellbeing, and the future opportunities are great. The global community of biophotonics researchers continuing to advance these technologies year on year are in need of feedback on their efforts — direction, advice, and the pull of end users. We need guidance on what the problems to be solved look like in the first place, and then feedback on the usefulness of, or defects in, our devices and solutions. A select group of biophotonics world leaders gathered last year in Perth, Australia, to strategize, learn from each other, and plan for the future, with some of the lessons learned reported here.

The 5th International Conference on Biophotonics (ICOB) was held from 30 April to 2 May 2017. ICOB is a different sort of conference — as usual, there were technical talks, with associated papers published in SPIE’s Digital Library (http://doi.org/10.1117/1.JBO.23.2.021101) but, less usually, there was a focus on where the field is heading — on strategic roadmapping in biophotonics. This focus was ideally complemented by ICOB running back to back with the local annual Western Australian conference Science on the Swan — in large part, a meeting of potential — with a focus on models to promote translation and the challenges we face (http://doi.org/10.1117/1.JBO.23.2.021102). And lastly, with translation always high on the ICOB agenda, Jürgen Popp, the Director of the Leibnitz Institute of Photonic Technology, caps off the session led by Laura Marcu, from University of California, Davis (http://doi.org/10.1117/1.JBO.23.2.021104). Entrepreneurship leader and medical doctor Peter Santa-Maria led a brainstorming activity in teaching medical doctors and engineer/scientist entrepreneurs how to frame a research project around a clinical unmet need, and has produced a paper on biomedical device innovation methodology in biophotonics (http://doi.org/10.1117/1.JBO.23.2.021103). Entrepreneurship leader and medical doctor Peter Santa-Maria led a brainstorming activity in teaching medical doctors and engineer/scientist entrepreneurs how to frame a research project around a clinical unmet need, and has produced a paper on biomedical device innovation methodology in biophotonics (http://doi.org/10.1117/1.JBO.23.2.021103).

So, I commend to you this set of four perspectives on our field — each with a different focus and magnification, each providing a snapshot of the state of the art, and individual perceptions, issues, and roadmaps of where to go next.

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