

Microscopes are ubiquitous tools in science and medicine, providing an essential, visual connection between the familiar macro-world and the remarkable underlying micro-world. Our ultra-low-cost origami-based approach provides means for large-scale manufacturing of brightfield, darkfield, fluorescence, and projection microscopes. This design can provide over 2,000X magnification with submicron resolution in brightfield imaging for under \$1/unit. An important application for this work is global health diagnostics of diseases such as schistosomiasis, filariasis, hematologic diseases, and malaria. Another is science education, where a portable, rugged, easy-to-build, easy-to-use tool could spark the beginnings of amateur microscopy. Future work will consist of field testing this device for both diagnostics and education, and developing the scalable processes for manufacturing in high volumes.