The IEEE International Symposium on Biomedical Imaging (ISBI) is a scientific conference dedicated to mathematical, algorithmic, and computational aspects of biological and biomedical imaging, across all scales of observation. It fosters knowledge transfer among different imaging communities and contributes to an integrative approach to biomedical imaging. ISBI is a joint initiative from the IEEE Signal Processing Society (SPS) and the IEEE Engineering in Medicine and Biology Society (EMBS). The 2020 meeting will be held in Iowa City, Iowa, USA and will include tutorials, challenges and a scientific program composed of plenary talks, workshops, as well as oral and poster presentations of peer-reviewed papers. High-quality papers are requested containing original contributions to the topics of interest including image formation and reconstruction, image processing and analysis, dynamic imaging, visualization, image quality assessment, machine learning for big image data, and physical, biological, and statistical modeling. Accepted 4-page regular papers will be published in the symposium proceedings published by IEEE and included in IEEE Xplore. To encourage attendance by a broader audience of imaging scientists and clinical professionals and to offer additional presentation opportunities, ISBI 2020 will include workshops with specific clinical focus and it will continue to have a second track featuring posters selected from 1-page abstract submissions.