*Methods in Microbiology* is the most prestigious series devoted to techniques and methodologies in the field. Established over 40 years ago, Methods in Microbiology reviews the methodologies associated with areas of microbiology in which new and developing technologies are having the biggest impact. It also provides the reader with tried and tested, cutting-edge protocols.

The current volume, Imaging Microbial Cells, Structure and Molecules, is edited by a leading expert in the field, Dr Grant Jensen. It highlights the impact of imaging technologies on our understanding of the structure and functioning of microbial cells. Of increasing importance are technological developments that increase resolution while reducing the artefacts associated with more traditional approaches. This volume describes current methodologies for visualising cell structures, monitoring of dynamic processes such as cell wall synthesis and division, and creating and maintaining microenvironments using microfluidic devices. The combination of technologies discussed in this volume is already having a profound impact on our understanding of microbial cell structure and dynamics.

**Key Features:**

- Cryo-electron microscopy
- Cryo-electron tomography
- Atomic-force microscopy
- Fluorescence microscopy
- The design and fabrication of microfluidics devices
- Computational control of microfluidic systems
- Control of fluid flow
- General principles and design of the "mother machine"
- Biofilms and species-specific interactions
- Cell tracking
- The cell cycle and size homeostasis studies
- Identification of novel structures
- Strategies for imaging peptidoglycan
- Tools for studies of peptidoglycan synthesis patterning and dynamics
- Probing peptidoglycan synthesis
- Image analysis of single-cell traits



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