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## Robots in the vivarium

Automation is increasingly being used in science to manage important but mundane tasks. The vivarium is no exception. Cage cleaning is a necessity for both welfare and safety, but some animal facilities are questioning whether manually scrubbing endless cages is really the best use of their employees' time and efforts. Automation may offer a better way. With the help of robotic cage washers, vivariums are standardizing and streamlining the cleaning process. Cost, design, and implementation are important considerations, but the use of robotic systems can bring benefits to the animals in a vivarium and the people there to care for them.

See page 13

## Software for keeping cages straight

Managing a vivarium is an involved operation. Those responsible for the animals in their charge need to keep track of numerous tasks: Have all animals been fed and watered? When's the last time that cage was cleaned? Which animals require special attention before, during, or after experimental procedures? Accurate record keeping is vital for general welfare, regulatory compliance, and experimental confidence that protocols are being appropriately followed. Specialized software exists for vivarium management, but general database programs can also be adapted to fulfill the task. Marcus Muench describes how he customized a low-cost database software to help him manage his facility in a new Clinical Technique.

See page 17