

News & Tips on Microscopy

THE ZEISS CORNER

NUMBER 3

Changing Arc Lamps

Arc lamps in mercury and xenon burners work under high vacuum and high temperatures. These safety steps are highly recommended.

- Wear safety glasses.
- Wear lint-free gloves or use lens tissue when handling the bare bulb.
- Let the burner cool completely before removing the bulb.
- Unplug the power supply.

PROCEDURE

1. Move collector lens away from bulb (knob on lamp housing) or remove lens entirely. Separate socket from lamp housing (retaining screw).
2. Remove copper wire from post (thumb screw) then pull bulb upwards from socket (loosen lug nut at base; special wrench). Remove heat sink (silver cap on bulb; set screw).
3. Reverse steps 1-2 to reinstall new bulb, being careful not to put strain or stress on bulb when tightening fittings. (For 50W HBO burners, make sure flat sealed surface is facing to side.)
4. To align arc, remove an objective, rotate empty space into viewing position and place a white card flat on stage, revealing real and mirror arc images. Focus images using collector lens and align (see diagram) using centering screws on lamp housing.



(L) HBO 50
(R) HBO 100,
XBO 75

5. Defocus images to evenly illuminate field; reinstall objective.

TIPS

- For greater stability, run for one hour before using.
- Never switch high pressure burners on and off quickly.

Send us your ideas for future issues of The Zeiss Corner. And for all your microscopy needs, contact Zeiss today.

**SEE
WHAT
YOU'RE
MISSING**

ZEISS

Microscope Division
Carl Zeiss, Inc.
One Zeiss Drive
Thornwood, NY 10594
Call: 800-233-2343
Fax: 914-681-7446

Continued from page 1869

contend that an equally plausible explanation of the record is that EMF bioeffects are simply more subtle than those of many other environmental agents and that, as lines of inquiry and scientific tools are sharpened through further research, uncertainties about possible EMF hazards will likely be reduced. Indeed, EMF bioeffects research funded by the Department of Energy and the Electric Power Research Institute has become much more focused over the last 5 years, reflecting knowledge gained through the previous decade.

Even if one concludes, like Adair, that the specter of EMF hazard is imaginary, there are still good reasons for expanding both the depth and breadth of EMF-related research. First, if the research record is indeed contaminated by artifact, an expanded research program that concentrates on experimental quality control and replication of existing positive studies would set the record straight. Second, public concerns and ad hoc expenditures on mitigation are driven primarily by several dozen nominally positive epidemiological studies of the relationship between EMF exposure and cancer. Further epidemiological investigation might "explain" these positive studies as arising from some non-EMF cause such as a yet-to-be-identified confounder. Third, public and private officials faced with EMF risk-management decisions are more likely to delay spending on EMF mitigation if they believe that continuing research might reduce uncertainty in their decision. Finally, accelerated research on the public's need for EMF information, on fair ways to resolve powerline siting disputes, and on low-cost means for reducing EMF exposures can reduce both contention over powerline siting and the risk of product liability suits. This would save the costs of transmission project delays and courtroom battles and would go farther toward relieving public angst than would a halt to all research.

Adair's prescription for managing the EMF issue raises another broad problem that besets society today. In a democratic society, who should decide what fears are justified? Adair would vest that power in the scientific community (or more specifically in a small elite such as a National Academy of Sciences committee). Although the public and policy-makers depend on scientists for judgments about the probability and scope of possible EMF hazards, the legitimacy of the scientist's expertise stops there. Decisions about the appropriate level of funding for EMF research or about whether to control EMF exposures require making value judgments about willingness to pay, risk aversion, and equity among other things (1). Such decisions require input from all stakeholders.

H. Keith Florig
Resources for the Future,
1616 P Street, NW,
Washington, DC 20036

REFERENCES

1. H. Otway, in *Social Theories of Risk*, S. Krimsky and D. Golding, Eds. (Praeger, Westport, CT, 1992), pp. 215-228.

Brain Tumor Treatment: Significant Contributions

In our report of 12 June (p. 1550), "In vivo gene transfer with retroviral vector-producer cells for treatment of experimental brain tumors" (1), we cited, among others, the papers of M. P. Short *et al.* (2) and Z. D. Ezzeddine *et al.* (3), which described studies of in situ delivery of the lacZ gene into C6 gliomas and the effect of ganciclovir treatment on the growth of subcutaneously implanted tumors that bear a herpes thymidine kinase gene. We have received a complaint from X. O. Breakefield, a co-author of those reports, that our method of referencing did not give sufficient credit to their work.

It was the intent of the citations included in our manuscript to serve as an acknowledgement of the contributions of other workers reporting studies in this area of research. We regret that a more detailed description of the work contained in each of the cited papers was not possible within the space allotted by *Science* for the text of our report. The citation and terse description included were in no way intended to diminish the significance of contributions by any of the cited workers. We are pleased to again acknowledge that other investigators have suggested a similar strategy for the treatment of malignant tumors of the brain and note that none had reported the successful implementation of this strategy.

R. Michael Blaese
Kenneth W. Culver
Hiroyuki Ishii

National Cancer Institute,
National Institutes of Health,
Bethesda, MD 20892

Edward H. Oldfield
Zvi Ram

Stuart Wallbridge
National Institute of Neurological
Disorders and Stroke,
National Institutes of Health

REFERENCES

1. K. W. Culver, Z. Ram, S. Wallbridge, H. Ishii, E. H. Oldfield, R. M. Blaese, *Science* **256**, 1550 (1992).
2. M. P. Short, B. C. Choi, J. K. Lee, A. Malick, X. O. Breakefield, R. L. Martuza, *J. Neurosci. Res.* **27**, 427 (1990).
3. Z. D. Ezzeddine, R. L. Martuza, D. Platika, M. P. Short, A. Malick, B. Choi, X. O. Breakefield, *New Biol.* **3**, 608 (1991).