

has slashed its in-house staff and now routinely borrows grant managers from universities, says Liu. This creates a group of scientists-cum-managers with potential conflicts of interest.

MOST research managers wield significant power. Universities have long been engaged in *pao bu qian jin*, a pun satirizing the practice of “running to ministries to get money.” Professors’ incomes are often tied to how much grant funding they bring in; they may take up to 40% as commission, according to grant-management documents of several universities. Last year, MOST issued a directive forbidding the use of grant money as rewards, but it is not clear whether it will stop the linkage of salaries to grants.

In return for their largess, managers demand quick results to demonstrate *zheng ji*, or administrative achievements, to higher-ups. “If you don’t give them results in 3 to 5 years, your project is terminated,” grumbles Wang Yiqiu, a former vice president of Beijing University. And results are often measured in numbers. Tallies of citation-indexed papers, by individual and by institution, have become a national obsession. Nanjing University was the first to use the number of papers published in journals covered by the Science Citation Index (SCI) to evaluate faculty members in the early 1980s, and the practice has spread widely. (The Institute of Scientific and Technical Information of China publishes annual statistics ranking universities by the number of papers and by citation rates.) To earn a master’s degree, students at many universities must be first author of at least one SCI

paper, and Ph.D. students need two. Many institutions hand out cash rewards—hundreds of dollars, scaled by the journal’s reputation—for publishing an SCI paper (*Science*, 23 February 2001, p. 1477). The combination of pressure and incentives has nurtured an environment



No more Mr. Nice Guy. Chinese scientific leaders tolerate misconduct—and that’s a “serious problem,” says biophysicist Chen-lu Tsou.

that’s rife with simultaneous or serial duplicate manuscript submissions, self-plagiarized cookie-cutter papers, individual and institutional honorary authorship, and outright plagia-

rism, says Ouyang Zhongcan, director of CAS’s Institute of Theoretical Physics.

Not surprisingly, quality suffers. According to CAS, although China ranked ninth in the world in 2004 in the total number of science and technology publications, it ranked only 124th in terms of the average number of citations per paper. Former CAS president Zhou Guangzhao has long criticized an overemphasis on SCI papers, arguing that it discourages long-term or risky work. The problem, says Ouyang, is that no one seems to be listening to Zhou.

Higher political attention to a lab or a project raises the likelihood of securing ample funding. For example, in early 2000, biologist Cheng Jing gave a talk to the State Council, China’s cabinet, about the importance and applications of biochips, catching the interest of then-Prime Minister Zhu Rongji. The following September, Cheng founded a company, Capital Biochip Corp., with more than \$30 million from the State Development Planning Commission (*Science*, 15 December 2000, p. 2061). Ministries also chipped in non-peer-reviewed support, validating a popular saying among Chinese scientists: “Big grants, no review; small grants, big review.”

Crime Scene Investigation: How to Handle Misconduct

Chinese scientists aren’t the only ones who may find misconduct investigations a murky business (see main text): Confusion is the norm in much of the world, according to experts who are trying to raise global standards.

Most countries have taken an “ad hoc approach” to probing misconduct allegations, says Chris Pascal, director of the Office of Research Integrity (ORI), the overseer of investigations at biomedical labs and other facilities funded by the U.S. Department of Health and Human Services. A common experience, he says, is that officials “get an allegation and then try to figure out how to deal with it.” Without guidelines, “you don’t know what to do first, and you may end up violating legal norms.” The mistakes that often follow make it hard to reach a fair decision.

To help dispel some of the fog, Pascal and ORI consultant Nicholas Steneck, a historian at the University of Michigan, Ann Arbor, are leading a global effort to foster clear standards of conduct and encourage nations to adopt coherent policies. It’s critical, Steneck says, to create transparent systems and educate scientists and their bosses so that everyone understands where the community should draw the line. This week, ORI and the European Science Foundation (ESF)—a nongovernmental organization—announced that they will get the international ball rolling by cosponsoring the first “World Conference on Research Integrity,” scheduled for September 2007 in Lisbon, Portugal.

Interest in the project is surging, Pascal says, because of publicity over the South Korean stem cell research fraud, as well as recent news of misconduct allegations in China (*Science*, 19 May, p. 987), Japan (*Science*, 3 February, p. 595), and Norway (*Science*, 27 January, p. 448). “People used to fall asleep when I talked about educating scientists” on research integrity, Steneck says. Now they’re paying attention—and, critically, offering support. ESF adviser Anthony Mayer says the Lisbon conference got a boost from joining a new initiative proposed by Japan to compare national policies around the world, supported by the Paris-based Organisation for Economic Co-operation and Development. The European Union and others are on board.

Models of how to deal with scientific misconduct come in all shapes and sizes, Mayer says. One approach is to leave decisions to employers. The United States and the United Kingdom, for example, rely primarily on universities and research institutions for the first level of misconduct review, but the United States also has a national definition of misconduct and clear procedures for investigations, independent oversight, and appeals. The U.K. in March created a national Research Integrity Office that intends to establish guidelines and give advice. Elsewhere in Europe, Denmark has what may be the most centralized system, in which a judge oversees inquiries in all fields of science; other countries follow a variety of policies.

Organizers of the Lisbon conference say they are loath to create international rules. “We don’t want people filling out more forms on the lab bench,” says Mayer. One goal of the confab, he says, is to get people talking about practices that may spur cheating—such as using postdocs as “research slaves” or setting rigid productivity targets. That message is likely to resonate with rank-and-file scientists. —ELIOT MARSHALL

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