

Are Nobels out of step with science?

October 5 2011, by Marlowe Hood

This year's crop of Nobel prizes has sharpened a sometimes bitter debate as to whether science's top awards should each be limited to just three individuals in an era of collaborative research.

These days eureka moments in medicine, physics and chemistry are rare compared with a century ago, when giants such as [Albert Einstein](#) and Pierre and Marie Curie strode the scientific stage.

Instead, breakthroughs commonly come from collective labour involving dozens, sometimes hundreds, of minds working across multiple sub-disciplines in lavishly funded organisations.

"It is a trend in [modern science](#). We increasingly see huge collaborations," notably in astronomy and genomics, said Roger Highfield, editor of the weekly British magazine New Scientist.

"You do wonder if it is entirely fair to single out three individuals."

The 2011 physics prize, he noted, went to three astronomers involved in two big teams who discovered that the [expansion of the Universe](#) was accelerating, not slowing as thought.

"This is one of the increasingly frequent instances when the [Nobel Committee](#) is damagingly constrained by its tradition that a prize can't be shared between more than three individuals," said Martin Rees, Britain's [Astronomer Royal](#) and former head of its academy of sciences, the Royal Society.

"It would have been fairer -- and would send a less distorted message about how this kind of science is actually done -- if the award had been made collectively to all members of the two groups."

Roger Davies, a professor of [astrophysics](#) at the University of Oxford, noted that the two teams of astrophysicists included "specialists in observational techniques, instrumentation, data analysis and theory -- the result requires all of these skills.

"In such large collaborations the team leaders are usually those who conceived and directed the investigation, but to achieve the result usually requires each team member to make an imaginative, creative contribution."

The rumble flared into open protest in French circles in 2008 when Jean-Claude Chermann, who played a key role in the discovery of the AIDS virus, had to watch two former colleagues collect the Nobel for medicine.

Jules Hoffmann, who shares this year's medicine Nobel with two other researchers from another laboratory for work on the immune system, would not comment on the limit rule but noted "science has become a much more collaborative process, everyone agrees on that."

"I consider this prize, number one, as a prize for innate immunity. Number two, it's for the team that spearheaded the efforts," he told AFP by phone.

Not all scientists agree the Nobel system needs revision.

"You can't really give a prize to a team of 10 people," said French physicist Albert Fert, who won the Nobel in 2007.

"It dilutes the interest of the prize. These are the rules of the game."

In an apparent exception to the trend toward collaboration, the Nobel for chemistry went on Wednesday to a single scientist, Daniel Shechtman of Israel, for discovering so-called quasi-crystals.

But even this award was contested.

"For us, in the chemistry community, the key publication (announcing the discovery) was signed by three major figures," Luc Barbier, co-head of a research unit in the IRAMIS physics and chemistry institute near Paris.

"It seems evident to us that (Denis) Gratias and (John) Cahn should also have been recognized," he told AFP by phone.

The number limitation was imposed in the late 1960s, in part because the number of recipients had begun to multiply.

Even with the new restriction in place, prizewinners in all three categories doubled from the first half of the 20th century to the second half.

In the last decade, there were nearly half as many as during the period 1900 to 1950.

"If something is discovered at CERN and there are 3,000 people in the collaboration, what are we going to do then," said Lars Bergstrom, Secretary of the Nobel Committee for Physics, referring to the giant test-bed for particle physics in Switzerland.

"We are not there yet, but are very much aware of the problem. We will see what can be done."

Another grouse that is commonly heard about the Nobel science awards is that the categories were set down at a time when there were relatively few scientific disciplines, divided by clear-cut lines.

Newer disciplines, or those that cut across categories, such as biotechnology, get left out, say critics.

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