The cells, which Tilly calls oogonial stem cells (OSCs), are very rare—only about 1 out of 10,000 ovarian cells. The OSCs grow quickly in the lab, and they spontaneously form cells that visually and molecularly resemble immature oocytes. To find out how the cells would behave in an ovary, the scientists injected OSCs engineered to make GFP into a piece of donated human ovarian tissue and then implanted the tissue under the skin of a mouse. When they looked at the grafts 1 and 2 weeks later, they found immature follicles with green oocytes at their center.

Finding a human version of the cells Wu isolated is “very exciting,” says Evelyn Telfer, who studies oocyte development at the University of Edinburgh in the United Kingdom. But she and Albertini note that the current experiments don’t address what, if any, role the apparent stem cells play in normal ovaries. And Findlay says the cells might be an artifact of the purification or culture methods the team used. Even the green oocytes should be viewed with caution, as GFP-tagged cells can fuse with unrelated cells, says Renee Reijo-Pera, a reproductive biologist at Stanford University in Palo Alto, California.

The oocyte-like cells that grew from the human OSCs were far too immature to try fertilizing them, Tilly notes. And attempting such an experiment would need special ethical oversight, he says. He and Telfer have plans to see whether her techniques for maturing oocytes in vitro work with OSC-derived cells. Whether the stem cells themselves could be a source of fertile oocytes for in vitro fertilization attempts is doubtful, Albertini says. He points out that expanding cells in culture almost always leads to accumulation of potentially harmful mutations.

Still, Albertini says, studying the cells could help researchers. “I think it’s a great model. It could help us move toward understanding how these incredible cells [oocytes] are born and how they develop.”

Tilly holds a patent on the OSCs, and he has started a biotech company to explore ways to use the cells to help improve fertility treatments. The company will screen for compounds that encourage the cells’ growth and development and will test whether compounds in the cells might be able to boost the fertility of aged eggs. But even Tilly admits that the controversy is unlikely to settle down anytime soon: “Whether the cells represent what we believe they do? That’s going to take a while to weed through.”

—GRETCHEN VOGEL

Is Motherhood the Biggest Reason For Academia’s Gender Imbalance?

A new paper by two developmental psychologists on the dearth of women in academic science argues that the cause of the gender imbalance is much easier to identify than most researchers have posited. The solution is also more obvious, they say, although that doesn’t mean it will be easy to implement (see sidebar). Not surprisingly, their provocative assertions, in a paper titled “When Scientists Choose Motherhood,” have stirred the pot in an already contentious field.

Writing in the March/April issue of American Scientist, Wendy Williams and Stephen Ceci of Cornell University argue that the traditional view of female under-representation as a complex mixture of discrimination, differential abilities, and career preferences misses the mark. Instead, say the authors, the dynamics of family formation in Western society is a significant difference among highly gifted students translates into a significant difference in adult success in math-intensive STEM fields. A third camp sees personal preferences—“working with people versus things,” as some describe it—as the driving force behind the divergent career choices by men and women.

In their new article, which builds on a 2011 paper in the Proceedings of the National Academy of Sciences, the authors assert that a “misdirection” of resources toward problems that no longer exist has slowed progress. In particular, they take issue with those who say that correcting the gender imbalance will require a wholesale revamping of societal attitudes toward women and a reworking of the nation’s educational system. What is more important, they say, is to change the current rigid system at universities of rewarding the couple’s decision in 2005 to jump into this contentious field. “But the current system doesn’t let them back in.”

It’s no surprise that an aggressive attack on those analyses would trigger strong rebuttals from researchers who are passionate about the topic. In particular, many researchers think Williams and Ceci have oversimplified what they say is a very complex issue and selectively chosen data to bolster their case.
Half-Time Jobs, Full-Time Scientists

Even if Wendy Williams and Stephen Ceci are right that the way to improve the gender balance is to alter the academic reward system (see main text), how would you do it?

Matthew Pritchard and Rowena Lohman are accidental subjects in a natural experiment testing one ingredient in the authors’ recipe for change: half-time tenure-track slots that would allow women to be productive researchers while giving them more time to raise a family. The arrangement is so rare at top-tier U.S. research universities that there are no data, only anecdotes. Even so, the couple’s experience raises questions about whether the approach can be scaled up.

Since 2007, the husband-and-wife volcanologist and earthquake specialist at Cornell University have split a tenure-track slot—and one salary—within the department of earth and atmospheric sciences (EAS). They are taking advantage of the relatively low cost of living in Ithaca, New York, to carve out coequal careers. Pritchard, now 37, joined the faculty in 2003, and 4 years later the university hired Lohman, now 36, after agreeing to divide the position. The arrangement has allowed them to start a family—the couple has a 2½-year-old daughter and is expecting a second child in July—while continuing to be productive members of a top-rated department.

It is a sweet deal for the department. Despite earning a half-time salary, the couple figure they work pretty much full-time. “We don’t view ourselves as half-time,” Lohman says. “We’re basically each half-time teaching and half-time research.” As an example, Lohman stayed out for only a week after the birth of her daughter, and the infant was a constant presence within the department. “Never once did anyone complain about her crying,” Lohman recalls with gratitude about her colicky child.

At the same time, Lohman sees a psychological benefit in holding a part-time position. “I think we’re under less stress,” Lohman says. “When my daughter is sick, and I have to pick her up from [on-campus] day care, I don’t worry about taking the time off. And even if we’re not working any less, the perception is that we’re a little more relaxed.”

Although Pritchard officially went part-time in 2007, he was still able to meet the requirements for tenure within the traditional 6-year window. Lohman will be up for review in the summer of 2013 after requesting a 1-year extension. Still, she feels her productivity is nearly indistinguishable from that of any full-time faculty member.

Pritchard and Lohman are actually the third couple in the EAS department currently splitting a single tenured position. Hearing about the two older couples during his initial job interview helped to convince him that such an arrangement could work, Pritchard says, as well as sending the message that the department is very family-oriented.

But some academics see a downside to modifying the traditional tenure process. Although Cornell geoscientists seem comfortable with split tenure positions, the option is rarely exercised by other departments within the university. In fact, it took 2 years for higher-level university administrators to sign off on the deal for Pritchard and Lohman. “I’m not sure why there was a delay, but the dean told us it was part of a larger issue and not about us,” Pritchard explains.

In fact, some on campus had objected on the grounds that employing Lohman at 50% of the regular faculty salary was a form of discrimination against women and made her a second-class citizen. “I think that’s a narrow perspective,” says Teresa Jordan, who pioneered the arrangement 30 years ago with her geologist husband, Richard Allmendinger, and who was department chair at the time. “For every young woman taking the job at 50% salary, there’s a man doing the same thing.”

Jordan says the ruckus surrounding the hiring of Lohman could well make it harder for department chairs to win approval for split positions even if new faculty members request the arrangement. And if that’s the case at a place with a track record of success, then a university without any such history may be wary of taking the plunge.

—J.D.M.