SPECIAL REPORT
DREAM JOBS ’09
SOME PEOPLE GET PAID TO HAVE FUN. WE MET 10 OF THEM. HERE ARE THEIR STORIES

Shannon Bruzelius masters a blaster at Wild Planet Toys
Researchers at Johns Hopkins University have developed 700-micrometer metallic grippers that can be remotely triggered to close. The microgrippers, which can be maneuvered into place using magnets, could be useful for removing cells for biopsy or other medical applications. Inspired by the joints of crabs, the scientists built their microgrippers using a layer of prestressed metal that is held open by segments of organic polymer. Increasing the temperature or adding certain chemicals softens the polymer and releases the tension in the metal.

**Third Quarter 2008 Market Share (US $6.685 billion total)**

- **SOUTH KOREA** (Samsung, Hynix): Korea Exchange Bank and four other large shareholders are offering Hynix $500 billion won (US $386 million), promising to participate in the company’s issuance of 300 billion won in new shares and rolling over the company’s debt until the end of 2009.
- **GERMANY** (Qimonda): The State of Saxony will loan Qimonda €150 million (US $205 million), and Infineon Technologies, Qimonda’s parent company, will contribute €75 million. A Portuguese bank will kick in €100 million because of Qimonda’s facilities in that country. For the situation in Germany, see http://spectrum.ieee.org/feb09/GermDRAM.
- **TAIWAN** (Nanya, Powerchip, ProMOS, Elpida): The government plans to offer NT$200 billion (US $6 billion) to keep its DRAM makers afloat. The Taiwanese industry is expected to consolidate and develop closer technological ties with the United States’ Micron and Japan’s Elpida to form a more powerful competitor to the Korean giants Samsung and Hynix. For the situation in Taiwan, see http://spectrum.ieee.org/feb09/TaiDRAM.

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**Bailouts for Memory Makers**

Despite the makers of memory. Prices for DRAM, the principal memory in computers, have fallen more than 80 percent in the last two years, dropping below cost [see “Plummeting Prices”]. With cash running out, way too much production capacity, and markets in recession, DRAM makers are scaling back fast. Analysts say a wave of consolidation is needed to shed capacity. But no country wants its own industry to disappear. So governments in Germany and Taiwan spent the start of 2009 orchestrating bailouts, while in South Korea big banks came to the rescue. Many analysts are concerned that the bailouts will prolong the pain of consolidation. In the end, will there be only a few DRAM makers left standing? “I’ve never believed the DRAM industry will just consolidate to two or three companies,” says Nam Hyung Kim, chief DRAM analyst at market research firm iSuppli, in El Segundo, Calif. Following each orgy of oversupply [see “Capital Expenditure Cycles”], he notes, chipmakers have exited the field, only to be replaced by others as DRAM becomes profitable again. Look for a Chinese entrant within the next five years, Kim says. —Samanth K. Moore