

Finding a balance in the daily grind requires creativity and a sense of play. Kendall Powell explores how lifestyle can complement science.



Life in the geekosphere: with music, food, books, toothbrush and (somewhere) a unicycle, Gordon Kindlmann rarely needs to leave his work space.

Gordon Kindlmann's desk spills onto the floor, invades his neighbour's space and displays the essentials for graduate-student survival — cola cans, leftovers for dinner, antacid bottles, toothbrush, reference books and a unicycle to get around on. Kindlmann, who studies computer science at the University of Utah in Salt Lake City, sits among the chaos with his laptop and his CDs.

"I call this my geekosphere," Kindlmann says fondly. The random oddments on his desk give him something to fiddle with while he ponders his next programming move. But more importantly, the geekosphere creates a sense of self-sufficiency. "In a submarine, I'd be fine for a little while," he says.

It is also a testament to his dedication — so much so, that his adviser brings recruits by to stress the hard work put in by the research group. The long hours, working weekends and occasional tedium of research cut across all disciplines of science and characterize the graduate student and postdoctoral fellow's existence.

The lifestyle makes science less of a nine-to-five job

and more of a zen-like calling. But gruelling hours and repetitive, often frustrating experiments can turn a passion for science into an obsession or an all-out stressfest. Smart lab workers and directors have found creative outlets to improve morale, break up the day, spark scientific ideas and just let off steam. From an early-morning swim to late-night radio, a touch of 'culture' during the working day can inspire and unify labs or provide a brief escape to the outside world.

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ALL IN A DAY'S (AND NIGHT'S) WORK

After the morning's ritual of coffee and e-mail in the University of Toronto's Advanced Center for Detection of Cancer (or AC/DC Lab for short), it's time to get down to some serious work before lunch. Inevitably, someone turns on the lab stereo. In the AC/DC Lab, the tunes are likely to be — you guessed it — heavy metal. The lab's director, clinical biochemist Eleftherios Diamandis, chooses Metallica, the Allman Brothers and Led Zeppelin to drive up the lab's energy level. "Listening increases brain activity," he says, citing his version of the 'Mozart effect' — the idea that musical training may improve memory.

Nicknamed 'Elvis', Diamandis led a rousing game of 'name that tune' at the Gordon conference on cancer detection and diagnosis in Andover, New Hampshire, last August, using the 35,000 digital music files on his laptop, which also help him relax. "It's almost like a live performance. I'm almost in the amphitheatre," he says.

Kindlmann takes a different stance from Diamandis on music's role. He listens to electronic, ambient or post-rock — no words — while he programs. "When you are working, part of your brain wants to be somewhere else," he says. "Music helps to tie that part down and preoccupy it."

By midday, with the gels humming along or the computer crunching data sets, it's time to find the lab adviser to share the week's puzzling results. In Jim Gimzewski's lab at the University of California, Los Angeles, you're likely to find him cross-legged on a brightly carpeted floor with charts spread all around.

Gimzewski, a nanoscientist, specifically designed the PicoLab to look "more like kindergarten" than a typical lab. He furnished rooms with comfy leather and bean-bag chairs, carpets, boldly painted walls and striking images of the outdoors to improvise as 'windows' in the basement. He strives for an environment that will provoke new thoughts in lab members as they play with data and chemical models. Gimzewski says that



Students getting plastered? Graduates are immortalized on Erik Jorgensen's lab walls.

nanoscience inspired the “happy future” vision to bring back the “child element of raw creativity”. He believes that the comfortable surroundings will help workers feel at home in a lab where they spend most of their waking hours.

Other labs, such as ETH in Zurich, Switzerland, have also forged relaxing havens for their workers (see also *Nature* 424, 718–720 and 858–859; 2003). Postdocs can retreat to the Raum der Stille, or ‘chamber of silence’. The wooden shell lends itself to peaceful meditation — or a prayer to the gods of failed experiments.

By day's end, after the post-lunch dip and caffeine-induced buzz, it is time to regroup for the second shift — the experiments that must continue after most other workers have left for home. While finishing his thesis at the University of Pennsylvania in Philadelphia, Eric Ostertag would hit the gym with colleagues from his molecular-biology lab for a late-afternoon weightlifting workout.

“It was nice to break up the day when we were working 12 or 16 hours,” says Ostertag, now a clinical pathology resident at Pennsylvania. Another student shared his flexible training regime, which was ideal for lab work. The getaways provided stress relief and camaraderie, and certainly did not reduce the lab's productivity — Ostertag had published 13 papers by the time he graduated.

EXTRACURRICULAR KICKS

In Erik Jorgensen's lab at the University of Utah, achievements such as Ostertag's would be greeted by the whole group standing on chairs singing a Danish drinking song. The tune (similar to *Oh My Darlin' Clementine* followed by three cheers) celebrates a good result, a publication or just a lab reunion.

Jorgensen, a neurobiologist, instituted another tradition when his first student graduated — at the leaving party, a plaster cast was made of her face. “These people spend six years with you, they are as much family as anything else,” he says. Now, a dozen ghostly casts hang in a circle in the lab's lunchroom.

Jorgensen says that although the traditions evolved by accident, they now have a deeper meaning for the lab. The faces are “an exhortation to excel” and “immortalize” successful lab members, he half-jokes.

Lab parties thrown by Martin Giurfa, a behavioural neurobiologist at Paul Sabatier University in Toulouse, France, usually require less plastering and more cooking. He invites his students to share ethnic dishes at a movie night at his home about once a month, and the parties sometimes result in sing-alongs, with Giurfa on the guitar. The lab brings together workers from Asia, Europe and South America, and Giurfa says that the parties help to ease the isolation and culture shock that many researchers experience while working in a foreign country.

Lab directors say that traditions and celebrations recognize the great commitment of their teams. “We all need reminders that this is somewhat greater than a job, that we are members of that brother- or sisterhood,” says Jorgensen.

Sisterhood, for the women in Kai Zinn's molecular-neurobiology laboratory at the California Institute of Technology in Pasadena, includes a lot of conversation. While working late at night ‘pushing flies’ from one food vial to another, they would watch a small TV or listen to public radio. Discussions might drift over celebrity fashions or ignite into heated political debates, but they

all make time pass more quickly.

Anna Salazar, a graduate student in the lab, says that the cultural conversations serve two other purposes as well. “Sometimes when you are just doing science work, you forget about what's going on outside.” Art, music and politics, she says, put her “into creative mode, to get at interesting questions in science”.

At the end of a long day, Stephen Voss, a senior lab technician in a cancer-immunology lab at the Mayo Clinic in Rochester, Minnesota, may have discovered the best way to balance mind and body. Voss has trained for 13 years in kendo, the ancient form of Japanese fencing practised by samurais. Kendo uses bamboo sticks and requires discipline beyond the physical sport, including supreme concentration and a code of ethics.

Voss says that it teaches him patience in the face of lab work: “If I have to repeat an experiment, I don't get bent out of shape.” Voss — now a kendo master, or *sensei*, teaching his own classes — also competes nationally in choreographed duels fought with real blades and no armour. “If you are doing your kendo correctly, you cannot have external distractions,” he says.

Other weekend warriors agree that adventure sports or musical performances leave no mental room for nagging details or worries. Those breaks can provide clarity for a fresh idea to rise to the surface back in the lab. But Zinn says that when he is rock-climbing or hiking, he is still thinking about experiments, forever his favourite pastime.

He and other principal investigators realize that investing in their lab's working environment and promoting balanced lifestyles among the people there pays off in the end. “Science isn't any kind of guaranteed occupation,” says Zinn. “People are there because they enjoy doing it. They should control their own experience and decide how they want to do their work.” ■

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