Take my advice

Part-time work at a consulting firm can provide management skills and connections for graduate students and postdocs who hope to move beyond academia — or not.

BY CHRIS WOOLSTON

Not many graduate students who spend 50–60 hours in the laboratory each week are eager to take on an outside job — especially one that pays nothing. But Michael Lang, a PhD student in cell and developmental biology at the University of Michigan in Ann Arbor, has added two part-time, unpaid positions to his workload. He’s the president of miLEAD Consulting, an independent, non-profit company based in Ann Arbor that connects the university’s graduate students and postdoctoral researchers with local biotechnology and health-care companies that need help with product development, market analysis or branding. And he works directly for miLEAD to provide his own insights and analyses to companies.

Lang thinks that the long hours are worth it. The consulting work helps him to build leadership and management skills that would come in handy if he were to reach his ideal goal of running an academic lab. And if that doesn’t work out, he’ll have a fall-back position: “I’ve always wanted to be a scientist, but a US$130,000 job at a top consulting firm sounds pretty good too.”

Lang’s group is one of several consulting organizations that have sprung up on US campuses in the past few years. They supply teams of postdocs and graduate students who can take a scientific approach to common questions faced by local biotechnology and pharmaceutical start-ups — what is the demand for a new product, what is the competition, what can be done to make a product better and what is the best way to profit from a good idea? Consultants do not always know how companies use their input or whether their advice makes a difference, but the value of the experience is undeniable. “We want to give people another bullet point on their CV,” Lang says. “It can get them over the hurdle to getting a job.”

A few of these consulting groups, including miLEAD, are independent, non-profit companies with no official ties to their home institute. But most are affiliated with their host institutions, including Harvard University in Cambridge, Massachusetts, Stanford University in California and the University...
of Pennsylvania in Philadelphia. Such
campus-based organizations haven’t
captured the interest of businesses, but at least one
global company, 180 Degrees Consulting,
recruits postdocs and graduate students for
consulting projects and gives scientific trainees
in the United Kingdom and elsewhere a chance to
add to their skill set.

Whatever group they work for, trainees
in consulting get valuable experience in analy-
sis, decision making and team-based prob-
lem solving that can give them a boost in the
job market. It is also a break from the normal
routine. “Fast-paced teamwork can be a lot of
fun,” says Huadi Zhang, a medical-science PhD
student and co-president of Harvard Gradu-
ate Consulting Club. “I didn’t have that kind of
experience in the laboratory.” But on-the-side
consulting is also a serious commitment and
time drain — and there are several hoops to
be jumped through if students want to start a
group from scratch (see “How to start a con-
sultancy”). The field is not for everyone, but an
increasing number of trainees have found that
it is possible to consult their way into a career.

CV BOOSTER
For Lang, consulting has turned into a second
life outside the lab. He estimates that he spends
10–15 hours a week fulfilling his duties as
president of miLEAD: overseeing the search
for clients, recruiting consultants and, impor-
tantly, training them in the basics of business.
Working on a project — which might involve
meeting with a company’s board, talking to
doctors or digging through research articles —
Generally takes him another 10–15 hours each
week. These are huge time commitments for a
graduate student with experiments to run and
papers to write. But it’s worth it, he says, for the
boost it gives to his CV and research. “The addi-
tional work has helped me streamline my science,” he
says. “There’s not a lot of downtime in the lab.”

Lang’s recent projects include an eight-
week gig for a Michigan
pharmaceutical company that is developing
a therapeutic drug for newborns. (Because of
non-disclosure agreements, he cannot name the
company.) He and his team studied the market
for the drug, scoped out the competition and
gauged its potential applications in neonatal
medicine. Previously, he was on a team that
spent four weeks assessing an app-based learn-
ing tool for college students that was developed
at the University of Michigan.

Lang says that miLEAD brought in $6,000
in revenue in 2015 and is aiming for $12,000
in 2016. The board uses all of the revenue for
group-related activities, including flying in
speakers for panel discussions and funding
team-building gatherings. If the coffers get
sufficiently full, Lang hopes to start a grant
programme to help local businesses to get
off the ground. miLEAD’s fees for client com-
panies are a tiny fraction of what a big-time
consulting company would charge, but they
unscopere the professionalism of the pro-
cess. “We treat this like a business,” he says. “If
money is involved, better work gets done.”

Conversely, Zhang says that the Harvard
Graduate Consulting Club has no plans to start
charging clients. “It’s a way for us to give back to
the community,” he notes. Although it is likely
that local start-ups get some value from their
consulting, improving a company’s bottom
line is not the main point of the exercise. “It’s a
learning experience for us,” says Zhang.

A GROWING FIELD
Consulting organizations are starting to pop
up on other campuses, giving more postdocs
and graduate students a chance to try out the
field. Simran Madan, a PhD student in transla-
tional biology at Baylor College of Medicine in
Houston, Texas, is helping to kick-start con-
sulting services as senior vice-president of
the Consulting Club at the Texas Medical
Center in Houston. This independent, non-
profit group is drawing talent from several
local institutions, including Baylor and the
University of Texas Health Science Center
and MD Anderson Cancer Center in Houston.

The group aims to begin offering consulting
services by the end of the year. For now, Madan
and club president Redwan Huq, a Baylor PhD
student in molecular physiology and biophys-
ics, are learning how to recruit potential con-
sultants, provide training, structure consulting
teams and attract clients.

The plan is to charge local companies about
$500 for 6 weeks of work analysing a product
and coming up with a marketing or develop-
ment plan, a price that should be attractive to
cash-strapped start-ups. “Professional consult-
ants are expensive, and you almost never see a
start-up hiring a firm,” Madan says. “But they
can get the same sort of analysis from a trainee.”

One source of inspiration for Madan and
Huq is the BALSA (Biotechnology and Life
Sciences Advising) group, a successful consult-
ing organization at Washington University in
St Louis, Missouri. BALSA, which started in
2011, has 100 active members who participate in
around 40 projects a year. About 60% of the
members are science PhD students, 30% are
science postdocs and a few are business or law
students. Each job lasts six weeks, and each team
includes three consultants, a project manager
and an adviser. Most of the work involves prod-
uct development and market analysis for local
start-ups and entrepreneurs in the biotechnol-
ogy, agriculture and health-care industries. The
group also has clients in South Dakota; San
Francisco, California; and Philadelphia, Penn-
sylvania, says Shivam Shah, who is the BALSA
president and a PhD student in biomedical engi-
neering at Washington University.

A frequent BALSA client is Washington
University’s Office of Technology Management,
which has often hired the team to help evaluate
patent applications from faculty members. Shah
says that the group tries to avoid having students
evaluate their direct supervisors, but that is not
always possible. Students aim to judge patent
applications strictly on their scientific merit and
real-world potential, he says.

Since joining the group in 2013, Shah has
worked on more than 20 projects as either a
consultant or a project manager. Working on
multiple projects has given him a chance to

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CASE STUDY

How to start a consultancy

Early-career researchers at institutions
that do not have a consulting organization
that can start one themselves. The first step is
evaluating and comparing existing groups
to find a model that fits. Michael Lang,
president of miLEAD Consulting in Ann
Arbor, Michigan, recommends setting up a
non-profit corporation that charges at least
a nominal fee for its services.

Simran Madan, PhD student at Baylor
College of Medicine and senior vice-
president of the Consulting Club at the
Texas Medical Center, says that
it’s important to survey the local scene
to determine whether there are enough
trainees around who have the time and
interest for consulting work, and enough
local businesses that could use help. She
also recommends finding a confidante
who has been through the process. “Since
setting up a non-profit is a monumental
challenge, we recommend consulting with
someone who has the expertise,” she says.

Madan suggests working with university
administration to get their support;
even though the non-profit group won’t
technically be a part of the campus, the
approval and cooperation of an institution
can be crucial for long-term success. It’s
also important to set up a team with sharply
defined roles and a chain of command.

Paperwork is involved, not surprisingly.
In the United States, it takes a lengthy
and complicated application to the US Internal
Revenue Service to obtain non-profit status.
Among other things, the application must
show that the organization will not make
money for the founder. But once obtained,
the status allows the group to accept
donations and avoid paying income tax. C.W.
fine-tune his management style and learn more about the scientific marketplace, he says. He hopes to land a consulting job soon after getting his degree, perhaps with a health-care venture-capital firm looking for advice about wise places to invest.

But a consulting career is hardly the only destination for BALSAs members. Many have ended up working in industry as research scientists, patent specialists or consultants for companies such as the multinational agrochemical company Monsanto, based in St Louis, Missouri, and the New York-based computing giant IBM. And of the roughly 200 alumni of the programme, he estimates that about one-third have continued in academic careers. The skills learned in the consulting game — management, leadership and teamwork — would prove valuable to anyone running their own lab, Shah says.

There is a paucity of organizations such as miLEAD and BALSAs outside the United States, but early-career scientists in the United Kingdom, Europe and elsewhere can still get real-life consulting training. One option is a position with 180 Degrees Consulting, a global organization with branches in Cambridge, UK; King’s College London; Munich, Germany; the University of Tokyo; the University of Sydney; and the University of California, Los Angeles, among many other sites. The company enlists students and postdocs to provide pro bono consulting to non-profit and humanitarian organizations around the world. Although the work generally is not focused on scientific issues, science PhD students and postdocs can bring valuable skills to the organization, says Daniel Jiang, a PhD student in computer science who in 2015 founded the 180 Degrees Consulting branch at King’s College London. “I know more about data sets than a political-science major does,” he says.

Jiang’s group is working with a children’s charity and sports charity in London, and a school in the Philippines. The company attracts people who want to make a positive difference in the world, Jiang says, but there are benefits for the consultants themselves. “It’s a great opportunity for students to find out about a different career before they graduate,” he says.

Lang of miLEAD is still technically a student, but he’s racking up professional-grade experience and isn’t slowing down: he’ll jump into two new projects as an adviser this summer. He can’t discuss details, but the big picture is clear: he’ll be working long hours, thinking about tough problems and moving closer to a postgraduate career.

Are the long days worth it? That’s a cost-benefit analysis that he has figured out on his own, no consultant required.

Chris Woolston is a freelance writer in Billings, Montana.

TURNING POINT
Carpe freedom

Your name appeared in news reports, as if the militants were targeting you. Why?

Essentially, they were sitting at my desk. At one point, a news article suggested that I was one of the reasons the occupation was happening. I’ve never had a rancher call me out — I have no idea where that came from. And to be honest, it freaked me out when my parents were contacted by a journalist. Then another person wrote an article entitled, ‘I stand with Linda Sue Beck.’ I think I was just the target for news that day.

That piece gained traction on social media. What was it like?

It was nice to have support. I also have a good relationship with the locals, in part because I’ve involved them in science experiments where, for example, the public catches fish so that I can collect data. Some local ranchers turn carp into an organic fertilizer to use on their fields. The militants picked the wrong refuge to take over. I think they thought it would be easier to sway the locals, but our partnerships are strong. People are sending cheques from all over the world. Hopefully, we can use those funds to get the refuge back up to what it was.

What was the first day back at work like?

We had to evacuate the area after the takeover, and I was sent to our office in Vancouver, Washington, until the occupation was over. Coming back for the first time, I had to go through two FBI roadblocks and be escorted to my heavily guarded office. We’re still piecing together the full impact of the damage.

How did the takeover affect your work?

We missed an opportunity to remove thousands of carp from the lake. In December, the lake was at a record low of about 800 hectares, so we had planned to block carp while they were aggregated at the mouth of the river, so that we could pull them out of the system. The lake has since grown to roughly 8,000 hectares, and the fish have dispersed because it is so deep.

How did it affect your outlook?

I realized how important it is to be honest and to keep lines of communication open. My approach to science is that I believe in what I’m doing to conserve land and animals for future generations. There might be political stuff at play, but I do what is best for the birds.

INTERVIEW BY VIRGINIA GEWIN
This interview has been edited for length and clarity.