

founded on those discoveries. The institute hopes to build a supportive ecosystem in the area that, if not as big as Boston or Silicon Valley, could become at least as active as smaller regions such as the Research Triangle of North Carolina. “The chances of success occurring in a region increase enormously if you can increase the number of companies,” says Baiju Shah, head of BioMotiv, which he calls a ‘bio-science accelerator’.

In Cleveland, meanwhile, the Wallace H. Coulter Foundation has teamed up with Case Western Reserve University — the leading patent-producing university in the state — to form the Case–Coulter Translational Research Partnership, which invests \$1 million each year in helping companies to take their inventions to the investment stage. “We just want to get technology out of the university and into the patient population,” says Steve Fening, director of the programme.

To that end, the partnership collaborates with entities such as BioEnterprise — a Cleveland-based group that provides both money and guidance and has helped more than 350 bioscience companies to raise more than \$2 billion in funding since its 2002 inception.

Cleveland has seen a boom in the past several years, Fening says. “They can’t build apartments fast enough for people living downtown. Ten years ago, nobody wanted to live there.” One new resident is Siemens Healthcare, which, in December 2015, moved its regional base from Pittsburgh, Pennsylvania, to Cleveland’s Global Center for Health Innovation.

Ohio was an attractive environment for Shaun Young, who in 2015 founded a start-up in Columbus called Ardina. The company provides health-care referral and insurance-gap coverage, which pays for expenses not covered by private insurance, such as patient co-payments for visits to a physician. Young, a pharmacist from Hawaii who has lived in California, Arkansas and Massachusetts, likes the affordability and culture of the city. “Columbus has been very family-friendly,” he says. The local infrastructure was a huge help in starting Ardina, he says — particularly Rev1 Ventures, a seed-funding group.

For his part, Heikenfeld is happy in Ohio — it’s a great place to turn research into a company, he says. “It’s the universities, it’s the venture-capital community, it’s urban revitalization, it’s the regional strategy — it’s everything you need,” he says. “We’re changing perceptions, and the proof is in the success.” ■

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COLUMN

A growing phobia

If you are terrified to meet with your supervisor, start with small doses, says **Eleftherios Diamandis**.

Supervisor phobia, as I call it, is an irrational fear that I have seen often among trainees in my 30-plus years as a faculty member.

Yes, some principal investigators are harsh and unsupportive. But in my experience, this phobia is unrelated to a supervisor’s behaviour — or even to a graduate student’s or postdoc’s initial promise. Instead, it describes junior researchers’ fear of meeting with their supervisors and discussing their own research.

The phobia usually develops during the first or second meeting. The supervisor, with the best of intentions, provides constructive criticism — and then it all goes pear-shaped. I remember remarking on the slow progress of one PhD student’s research project at our second review meeting (typically held six months after their project launch). Three months later, I repeated my concerns, which were mainly about how slowly the student was learning essential techniques such as mass spectrometry, the workhorse of our lab. But instead of addressing those concerns, the student stopped scheduling meetings. I was too busy to notice for another six months.

In the meantime, the student also started to avoid my colleagues and was silent at lab meetings. After two years of this behaviour, and in the absence of a single publication or review, I suggested that the student consider pursuing a master’s degree rather than a PhD.

I was horrified when my suggestion elicited tears. The student and I decided to give the programme another try, with the proviso that we would hold mandatory monthly meetings. I also ensured that the student could get technical support from my lab manager. After three years, the student published in a good journal, and 18 months and two research papers later, was ready to write a thesis.

This may be an extreme case, but it happens. When challenged, such a trainee will typically defend themselves by saying that they have to finish an experiment in two weeks; they have a broken instrument; a critical reagent hasn’t arrived. I’ve watched students duck into another lab when they see their supervisor walking down the corridor.

Eventually, the trainee becomes isolated from the supervisor and the research group, and hides the problems that they may be having with experiments, rather than seeking help to resolve them. The fallout can compromise a



student’s efforts to complete their degree, publish papers or present at conferences.

So, how to deal with this? I find that ‘interoceptive exposure’, in which the trainee confronts their fears in controlled, limited doses, works best here. If you are struggling with this phobia, it’s up to you to resolve it. Ideally, your supervisor will be empathetic until you can acclimatize to feedback and criticism — but you must schedule regular meetings with your supervisor, and openly discuss your projects and progress. Start with 15-minute meetings once a week or biweekly, and then extend the duration and reduce the frequency as necessary. Try also to chat with your supervisor about topics unrelated to your work — the weather, or a film.

If you’re a mentor, keep these meetings short until the student feels more comfortable and comes to understand that constructive criticism is extremely valuable. Let your student reveal their sensitivities to you, and give them the option to walk away at any point. Knowing that there is an escape will help the student not to panic. Interoceptive exposure worked for me with four out of four students with this problem.

But if you are the student, understand that these meetings benefit you, and that it is your responsibility — not your supervisor’s — to set them up. You need to be able to organize your thoughts, rethink experiments, present experimental results and interpretations and consider your next steps. These skills will make supervisor meetings less frightening and more useful.

So take a deep breath — and head to that office more frequently. ■

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