Something’s brewing at U of G. Molecular biology master’s student Richard Preiss and PhD student Angus Ross are using the knowledge they gained while working in Prof. George van der Merwe’s yeast lab to start their own business selling brewer’s yeast.

They successfully pitched their idea to the Hub, run by U of G’s Centre for Business and Student Enterprise (CBaSE), which provides $8,000 in startup funding and other resources to successful applicants.

Working in a wine yeast research lab inspired Preiss and Ross to turn their passion for beer into a business venture called Escarpment Yeast Laboratories. “We realized that we were both pretty big beer nerds,” says Ross. Not only do they love drinking beer, they also make their own home brews.

The idea to start their own business began fermenting when Ross met a friend for drinks — beer, of course. The entrepreneurs saw the potential for locally-grown yeast when they heard from breweries that wanted specialty yeasts as well as more traditional strains.

Preiss and Ross have collected a variety of yeast strains that can be used independently or combined. “Yeast is a key determinant in the flavour profile of a beer,” says Ross. “Having access to a wide range of yeasts enables brewers to make as many beer styles as they want.”
Aging Animals Hold Clues to Longevity

What can Arctic sea birds and fruit flies teach us about the aging process? That’s the question Kyle Elliott, a postdoc in the Department of Integrative Biology, is trying to answer.

“We don’t know much about how long-lived animals age because it’s hard to follow them for many years, especially in the wild,” he says. During his PhD research at the University of Manitoba, he spent months in Alaska studying Arctic sea birds. “In many cases I was working with birds that were older than I was.”

Most short-lived animals in the wild, such as rodents, don’t experience old age, he adds, but in longer-lived animals, such as elephants, seabirds and whales, up to 90 per cent of their mortality can be attributed to aging. At U of G, he’s comparing the aging process in fruit flies to longer-lived animals in the wild.

To do that, Elliott created a “wild” environment to study fruit flies in the lab by reducing their food intake and introducing predators in the form of preying mantids. In captivity, fruit flies can live up to 80 days, compared to their average lifespan of 40 days in the wild.

He found that the presence of a predator shortened the lifespan of the fruit flies, most likely because they invested more energy into reproduction to keep their numbers up.

Having access to less food also caused some of the fruit flies to die, “but those that managed to survive lived longer,” says Elliott. “There’s some debate, but this is a well-known treatment for extending longevity.”

An abundance of food often leads to increased reproduction, he explains, causing animals to invest more energy into their offspring, which can shorten their own lifespan.

Scholarship Recognizes Student Involvement

As a recipient of the CBSAA Student Scholarship, Brianna Guild is grateful to be recognized for her academic achievements but she’s even more proud of her extra-curricular activities. The scholarship recognizes both, which made her the perfect candidate.

Receiving the scholarship validated her efforts both in and out of the classroom, she says. “It’s so important to stay involved and give back to the university that has given you so much.”

The third-year student in biochemistry and co-op is working in the lab of Prof. Nina Jones, Department of Molecular and Cellular Biology, where she is studying the structure and function of a protein adaptor in the nervous system.

“I really like being in the lab,” says Guild, who plans to attend graduate school. “I find it really interesting because you’re always finding out new things and how they work.”

In addition to being a full-time student, she also serves as co-president of the Biochemistry Student Association and a peer helper at Co-operative Education and Career Services.
Prof. Jonathan Newman, director of the School of Environmental Sciences (SES), has been named the new dean of CBS. His five-year term will begin Aug. 1.

“Jonathan has demonstrated leadership abilities and academic vision, most recently through founding and heading SES,” said Prof. Serge Desmarais, interim provost and vice-president (academic), who chaired the search committee. “He is known as a strong, decisive leader, and has solid ideas for expanding and enhancing CBS.”

While making the announcement in February, Desmarais thanked outgoing CBS dean Mike Emes for his contributions over the past 13 years.

A U of G professor since 2004, Newman is the founding director of SES. The school was established in 2009 through the merger of the former departments of Land Resource Science and Environmental Biology. Newman chaired Environmental Biology from April 2008 to August 2009.

“I am delighted and honoured to be joining this outstanding college,” said Newman, who studies ecological interactions, invasive species and the biological impacts of climate change. “CBS is the home of fantastic faculty and staff, wonderful students, and engaged alumni. I look forward to working with all of these groups to build on an already outstanding record of teaching, research and service.”

Newman is the lead author of the book *Climate Change Biology* and has published more than 100 papers and journal articles. He is the associate editor of the *Journal of Ecology* and the *Journal of Animal Ecology.*

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**CBSAA Hosts Alumni Events for All Seasons**

Last year was the snow, this year was the cold, but no matter what, our Guelph CBS grads keep coming out to support our school and students. We had another great turnout for our career night in January, bringing in 40 alumni and more than 200 students.

We also presented our second CBSAA Student Scholarship to Brianna Guild. This scholarship was established to recognize academic excellence and extracurricular involvement. Second-year students with a minimum cumulative average of 80 per cent are eligible. Selection is based on extracurricular involvement and demonstrated leadership at U of G, with a preference for students who are involved in college clubs and activities.

Our spring and summer are looking just as busy as our winter. We’re hosting our most popular event, the Royal Botanical Gardens CBSAA Family Day, on May 24. It’s a great opportunity to bring your family and friends, have lunch on us, meet up with other grads and see the beautiful grounds of the RBG.

Following that event is the CBSAA annual general meeting on June 13. Please join us to find out what the college is doing and set the path for even more great alumni events in the future.

We are always looking for more people to join the group. For more information, please contact Annie Benko at abenko@uoguelph.ca.

Kim Bretz, B.Sc. ’97
CBSAA President
I’d like to extend a heartfelt thank you to all those I have worked with over the past 13 years. This includes alumni, faculty, staff, students, donors and friends. It has been an honour and a privilege to work with you.

From the first time I stepped onto the University of Guelph campus I knew that this would be home. Every person on this campus has been welcoming and committed to changing lives and improving life.

When I arrived in 2002, the University was just embarking on planning the Science Complex. Now named in honour of former U of G president Alastair Summerlee, without whose support the new building would not have been possible, the Summerlee Science Complex presented an opportunity to position our science and academic programs for even greater success.

In addition to creating world-class facilities, the new building allowed us to strengthen our disciplinary foundations, foster collaborative and interdisciplin ary research and teaching, and become a magnet for the brightest and the best. The Science Complex also catalysed the restructuring of the college and its departments, as a result of which we have accomplished remarkable curriculum innovation and established our research prowess on a global scale. Programs that integrate the sciences with the arts and humanities have also evolved.

Our students are inspiring, and it is important to ensure a variety of ways to support them. Among many satisfying developments, the college has established more than 20 summer student research assistantships. These assistantships, valued at $5,000 a year, allow each student to spend 12 to 16 weeks working in a research lab in the college and are supported entirely by donors, including many of our alumni. This enriched learning experience is invaluable to our students and often becomes a stepping stone to graduate school or the next stage in their career.

Another highlight has been Career Night when many of our alumni return each year to share their work experiences since leaving university. On behalf of all our students I want to thank everyone who has given their time and resources to ensure the success of future generations of Guelph graduates.

Thank you again for all your support; it has been my pleasure to serve all of you and the University of Guelph. As I step away and return to my teaching and research, I am confident that our new dean, Prof. Jonathan Newman, will benefit enormously from the wisdom and commitment that our alumni will continue to provide.

Michael Emes
Dean, CBS
Ecologist Helps Protect Habitats

John Urquhart

Development almost always affects the environment, but John Urquhart is trying to minimize its impact on wildlife and their habitats.

After working in the conservation field for several years, the ecologist decided to start his own environmental consulting business, called Blazing Star Environmental.

“My job is to find a way to work with the government and the developer to make sure the species benefits,” says Urquhart, B.Sc. ’05 and M.Sc. ’09. “In theory, it can be a win-win.”

His business aims to help government organizations and landowners “do good things for species and ecosystems” by helping developers not only meet but exceed legal requirements for protecting the environment. “Let’s make sure that when we have an impact, we more than compensate for it,” he says.

If a developer finds an endangered species of turtles on its land, for example, Urquhart will suggest methods to reduce the impact on the turtles’ habitat by building nesting grounds or passages under roads for the turtles to cross safely. If a wetland needs to be drained, he will help capture and relocate the turtles.

Before starting his own business, Urquhart worked at Ontario Nature, where he managed 24 nature reserves, focusing on protecting species-at-risk. Prior to that, he worked at the Toronto Zoo, where he bred endangered ferrets and marmots for release into the wild.

New Associate Dean of Graduate Studies Appointed

Integrative biology professor Teresa Crease has been appointed associate dean of graduate studies for a three-year term beginning May 1.

After joining U of G in 1991, she began a research program to study the impact of meiosis loss on the evolutionary process.

“Teri brings a wealth of experience in all aspects of graduate studies,” says Anthony Clarke, assistant vice-president, graduate studies. “Her deep personal commitment to the quality of graduate education makes her a great fit for this role.”

Crease also serves as adviser to both master’s and doctoral students, as well as postdocs. She previously served as acting chair of the former Department of Zoology and the current Department of Integrative Biology, as graduate co-ordinator for both departments, and as chair of both departments’ graduate studies and awards committee.

As an elected member of Senate, Crease served on the Senate committee for university planning and on the Senate honours and awards committee. More recently, she was a member of the admissions and progress committee of the Board of Graduate Studies from 2008 to 2013 and served as its vice-chair for the past two years.
Genetic Factors Play Role in Obesity

More than half of Canadian adults are overweight or obese, according to Statistics Canada, and for some people, their genetic and molecular makeup may play a bigger role in their weight problem.

Researchers in U of G’s Department of Human Health and Nutrition, in collaboration with colleagues at McMaster University, studied participants who are at a healthy weight and those who are metabolically-healthy obese (MHO) or metabolically-unhealthy obese (MUO) to find out which factors contributed to their weight-related complications. These factors could be used by doctors to help better manage their patients’ body weight and risk for metabolic diseases.

Prof. David Mutch and postdoc Flavia Badoud studied metabolites in blood samples and gene expression profiles in adipose tissue from participants in the three groups to see how they differed on a molecular basis. The researchers found differences in energy metabolism and amino acid profiles between the lean group and the metabolically-unhealthy obese group. These differences were less pronounced between the lean group and the metabolically-healthy obese group.

“This shows that adipose tissue is more impaired in the ability to regulate energy metabolism in the unhealthy obese than in the healthy obese,” says Badoud. “This was mirrored in the levels of amino acids in the blood.”

Finding similarities and differences between these factors puts researchers one step closer to better understanding obesity and related health complications such as type 2 diabetes.

“We can see differences and highlight pathways that can be related to the development of insulin resistance,” she says. “Those pathways can be future targets for medications or diet interventions.”

Student Honoured for Volunteer Work

Patrick Beaudry wants to help people stay healthy. That’s why he’s studying human kinetics and nutrition at U of G with the intention of pursuing a career in kinesiology.

The second-year student also volunteers at Guelph General Hospital, where he has worked in the day surgery, perioperative and emergency room departments.

He says volunteering is helping him decide which health-care field to work in. “It gives you that personal experience, plus you’re giving back to the community.”

Beaudry also volunteers with the Aboriginal Student Association on campus, where he helps organize events for aboriginal students, and the Aboriginal Resource Centre (ARC).

“ARC is my home on campus,” he says. “I’m there most of the time.”

He recently received the Roberta Mason Award for his extracurricular involvement. The award is presented annually to a student who has become actively involved in campus life for the first time and made outstanding contributions to a club or organization at U of G.
Moms and Babies Benefit from Breastfeeding

DAWN HANES, B.Sc. ’96, wants expectant and new mothers to make informed decisions about how they feed their babies. As a nurse, she began teaching prenatal classes after returning from maternity leave and then started a new role in breastfeeding promotion at a public health unit in Peterborough, Ont.

“Ninety per cent of women giving birth will initiate breastfeeding,” she says, but that number declines as their babies get older.

Hanes wants women to nurse their babies for as long as they want, citing numerous health benefits for both. “It’s about having healthy outcomes for mother and baby.”

Women who breastfeed face a lower risk of breast and ovarian cancer, she says. Breastfed babies have fewer ear, respiratory and gastrointestinal infections, and a reduced risk of developing type 1 and type 2 diabetes. Higher IQ scores among breastfed babies have been attributed to breastmilk’s high level of omega-3 fatty acids.

Sometimes new mothers face challenges breastfeeding their babies, says Hanes. “You’ve never done it before; your baby has never done it before. It’s a learning process.” For those who plan to breastfeed, she advises trying to avoid using formula unless it’s medically necessary, such as if the mother can’t produce enough milk or if the mother or baby are too ill to breastfeed.

If a new mother is struggling with breastfeeding, Hanes recommends she get support from other mothers, a lactation consultant or a breastfeeding clinic.

After graduating from Guelph with a bachelor of science, Hanes studied nursing at Trent University. “I’ve always been drawn to health care, science and physiology,” she says. “The idea of being healthy and staying healthy really appeals to me.”

Research Centre Has U of G Ties

SIX U OF G researchers will take part in developing solutions to important health issues under a new $26.3-million national research effort called the Canadian Glycomics Network (GlycoNet).

The network includes U of G molecular and cellular biology professors Chris Whitfield, Joe Lam, Matt Kimber and Anthony Clarke, along with chemistry professors France-Isabelle Auzanneau and Mario Monteiro.

“The fact that so many Guelph professors are involved speaks to our reputation as leaders in this rapidly evolving field,” said John Livernois, then interim vice-president (research). “Already, Guelph researchers have made important breakthroughs such as carbohydrate-based vaccines. Through this new research network, they will continue to play a critical role in helping improve the lives of Canadians.”

Glycomics researchers — including chemists and biochemists, biologists and immunologists — study the structure and function of complex carbohydrates, which are central players in everything from genetic disorders to bacterial and viral infections.

Their research is leading to the development of new drugs and vaccines for diseases such as influenza, genetic disorders and diabetes.
W hat if childhood obesity could be treated or prevented with the right behavioral interventions? Carley O’Kane, B.A.Sc. ’13, a dietitian working with the Guelph Family Health Study, says it’s worth exploring.

After graduating from Canadore College with a diploma in food and nutrition management, she worked for the Children’s Hospital of Eastern Ontario as a food and nutrition supervisor.

“I immediately fell in love with it,” she says. “I saw a lot of children struggling with obesity and the impact that it had on their families.”

She went on to complete a dietetic internship at the Hospital for Sick Children in Toronto in 2014, and then joined the Guelph Family Health Study under the supervision of U of G Profs. Jess Haines and Andrea Buchholz, Department of Family Relations and Applied Nutrition.

As part of the study, O’Kane visits participating families and provides them with tailored health behaviour counselling.

“Parents actually have a much larger influence on their young child’s risk of developing obesity than they realize,” says O’Kane. By modelling positive behaviours, she adds, parents can influence their children’s behaviour.

The study will look at whether families benefit more from receiving two or four home visits versus the control group, which receives generic monthly health tips via email.

“The Guelph Family Health Study focuses on all of these aspects and tries to intervene and prevent obesity as early on as possible,” says O’Kane. “Children develop these habits when they’re young, and they can last a lifetime.”