

WATERLOO IS A WORLD LEADER IN CONTACT LENS STUDIES

By Holly Featherstone

Photography • David Bebee

CONTACT LENS WEARERS don't have to go far to take part in community-based research.

The University of Waterloo's Centre for Contact Lens Research in the school of optometry, the second-largest facility of its kind in the world, has quietly recruited the public for contact lens studies since it opened 20 years ago.

Graig Woods, research manager and

principal scientist, says the centre "services the whole country for optometry, so (it's) pretty unique."

It has a staff of about 50, some doing basic research, others devoted to clinical research. "In comparison with what is going on in the rest of the world of optometry, we're huge."

For most clinical trials, researchers turn to the campus population, and sometimes recycle participants for more than one study.

"We recruit students because they're so

THE CHALLENGES

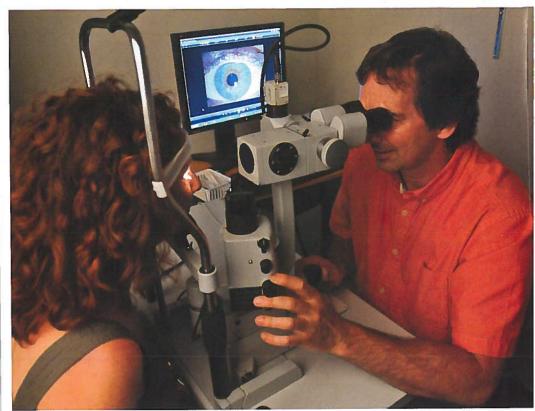
- Dry eye
- Multi-focal lenses
- Lens-care products that prevent infection without being toxic to the eye
- Perfecting continuous-wear lenses

accessible for us," says Alisa Sivak, the centre's communications co-ordinator. "It's harder to reach the rest of the community."

The supply of volunteers constantly needs replenishing because students graduate and leave, and "our capacity is greater than our current pool of resources," Woods says. "We constantly need to refresh that pool."

Typically, researchers are examining





Research manager Graig Woods looks into the eyes of communications co-ordinator Alisa Sivak at the University of Waterloo School of Optometry's Centre for Contact Lens Research, the second-largest facility in the world.

▶ the eye's reaction to different types of lenses and lens care practices. In lens care, the goal is to find compounds that prevent infection, but are not toxic to the eye.

Studies can be as short as one hour or as lengthy as two years, which could include lens-fitting and regular checkups by researchers.

To get quality data in longer studies, there must be a commitment from volunteers to stay with a project, Woods points out.

Participants are told of any risks beforehand, and researchers try to make the study pleasant enough that volunteers will agree to join more trials.

One study on lens care required participants to sleep at the research centre for 12 nights, so breakfast was included.

Some projects require participants older than the average student. A study earlier this year called for prior soft-contact-lens wearers ages 38 to 50 to help advance understanding of multi-focal lenses.

"We are looking at a particular type of

We're trying to solve the comfort issue. It's a pain in the neck when you're frying an egg and that egg is stuck to the frying pan. You want the same thing with the surface of a contact lens — to be non-stick.

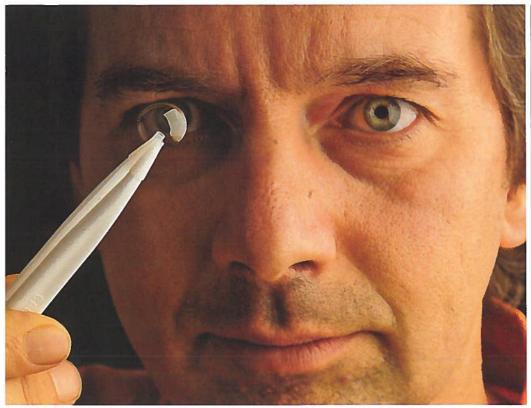
Graig Woods

lens design and seeing how it performs in that age group," Woods explains.

The centre runs an average of 30 clinical trials a year, involving anywhere from 20 to 150 participants. "When we're planning a study, we use statistics to tell us how many people we need, which changes all the time," Sivak says.

Multi-focus lenses are one research priority. Other studies are aimed at finding solutions to dry-eye symptoms; at least one looked at a supposed link between post-menopause and dry eye.

Woods says dry eye is a growing problem because people spend so much of their lives in artificial environments.



Researcher Graig Woods says dry eye is a growing problem for contact lens users. A major cause is the hours spent in front of a computer when the eyes' blink rate drops to once every 20 or 30 seconds from once every six seconds.

Air-conditioning and computers are a major cause of dry eye and inflammation.

When we use a computer, our blink rate drops off dramatically. The normal blink rate of once every six seconds ensures optimum hydration of the eye's surface with a film of tears. A computer-user's blink rate declines as low as once every 20 or 30 seconds.

Oxygen distribution is an important factor in contact lens development. "The drive of the last 20 years has been to make (lens) material highly oxygenpermeable," Woods says.

That's been achieved, "but those materials, as a consequence, make them difficult to survive in the eye.

"Your eye is quite a hostile environment for foreign bodies."

In the pursuit of the perfect lens, wearability remains a challenge. "We're trying to solve the comfort issue," Woods says.

"It's a pain in the neck when you're frying an egg and that egg is stuck to the frying pan. You want the same thing with the surface of a contact lens — to be non-stick."

HOW TO VOLUNTEER FOR CONTACT LENS RESEARCH

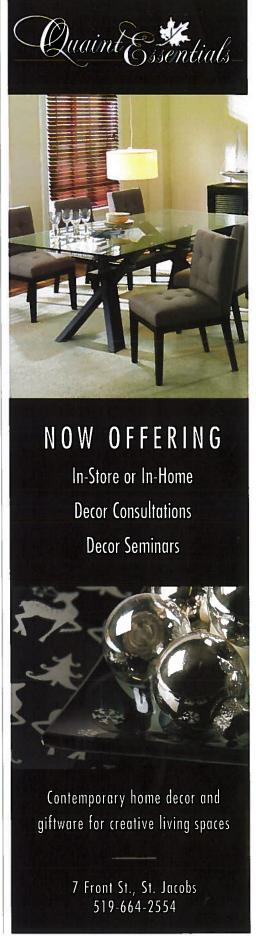
To participate in a clinical trial with the Centre for Contact Lens Research, call recruitment assistant Roz Exton at 519-888-4567, ext. 37187.

Volunteers should be at least 18 years of age and must complete a pre-screening questionnaire at www.cclr.uwaterloo.ca

All studies using human participants are preapproved by the University of Waterloo's Office of Research Ethics. For more information on approvals, call 519-888-4567, ext. 6005.

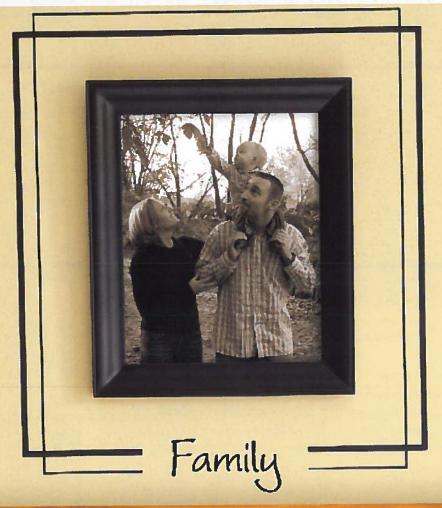
Researchers are also trying to make lenses more user-friendly. Perfecting continuous-wear lenses, which are ideal for new mothers and people with on-call jobs, is a major objective.

Some day, Woods hopes, contact lenses will meet a variety of needs. "If we could have a multi-focal lens ... that has a wet, moist surface, that is very comfortable, we'll have the perfect contact lens."



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