NEWS FROM THE CHAIR

Thanks to everyone for contributing to this issue of Bio-Update and thanks to Katrina and Tatiana for pulling it all together. For me, the spring issue is always timely – it reminds me that there is a ‘research’ light at the end of the grading and admin tunnel!

This issue highlights the research accomplishments of our faculty and our associated adjunct professors. As indicated by the lengthy list of publications and conference proceedings, 2006 has been another banner year. Congratulations everyone. In addition to our successes at publishing, members of the department continue their tradition of success at obtaining research funds. Special congratulations to Elizabeth, who received a 30% increase in her NSERC Discovery Grant. This is a phenomenal accomplishment given the current funding constraints in this program. We also had notable success in this year’s competition for NSERC Equipment Grants. Likewise, our students continue to have success in competitions for graduate student funding, including NSERC-PGS, Alberta Ingenuity Scholarships, and in the Challenge Grants in Biodiversity Program.

Of course, there are several indicators of research success. Having your results converted into poetry is perhaps not an obvious one! Below, you will read the extent to which results from Andy’s lab have been highlighted by the press – including in the form of a poem published in the Globe and Mail. Humour aside, this work was also recognized by NSERC in their listing of Annual Top 50 Research Findings. Congratulations, Andy!

Surely one of the pinnacles of research success at U of L is being awarded a Board of Governor’s Research Chairship. Congratulations to both Olga and Igor for receiving this tremendous honour. It is a well-deserved testament to your efforts in helping to establish and expand a world-class program in molecular biology.

Sincerely and proudly,
Cam

FROM THE NEWSLETTER TEAM
As always, this newsletter cannot be produced without the input and support of all Department members, and we thank you for your contributions. If you have suggestions for future newsletter issues, please send them to Katrina White (katrina.white@uleth.ca) or Tatiana Arjannikova (arjannikova@uleth.ca).
Department Member Highlight – Dr. Andy Hurly

Dr. T. Andrew Hurly studies the foraging behaviour of mammals and birds. One of his recent research focuses has been on spatial memory in rufous hummingbirds and how these territorial birds keep track of which flowers should have a good supply of nectar, based on when they were last visited.

Andy’s hummingbird work was quite widely publicized last year. He, along with other scientists involved in the project, published an article on timing in rufous hummingbirds in Current Biology in March, 2006. The work was then summarized in a CBC news article on CBC.ca, and Andy was interviewed by Bob McDonald for Quirks and Quarks on CBC Radio. Andy was also immortalized in a poem in the Globe and Mail on March 10, 2006. Below you’ll find excerpts highlighting Dr. Hurly’s hummingbird work.

Current Biology, Vol. 16(5):512-515
March 2006

Timing in Free-Living Rufous Hummingbirds, *Selasphorus rufus*

J. Henderson, T.A. Hurly, M. Bateson and S.D. Healy

S. Healy and T.A. Hurly also had an informational article on hummingbirds published in Current Biology (Vol. 16(11):R392-R393), in June 2006.

Synopsis of CBC Radio Quirks and Quarks interview:
“Think of a hummingbird and you might picture their grace and amazing ability to hover. Well, it turns out they have brains as well as beauty. New research by biologist Dr. Andrew Hurly of the University of Lethbridge shows that Rufous hummingbirds have internal stopwatches that allow them to manage their time efficiently. Dr. Hurly’s research shows that the tiny birds have an amazing sense of timing. They can pinpoint the location of flowers they’ve already visited and remember when to go back. It’s important for the birds to conserve their energy, as they must visit hundreds of flowers a day to collect just a tiny drop of nectar from each.”
(Synopsis of interview retrieved from CBC’s Quirks and Quarks archives website at http://www.cbc.ca/quirks/archives/05-06/mar11.html)

Listen to Andy chatting with Bob McDonald at:
CBC.ca news article: Hummingbirds sing a precise food tune
Monday, March 6, 2006

Excerpts:
“Wild hummingbirds have plenty of thoughts of food despite their minuscule brains, say researchers who note that the tiny birds' "episodic" memory for nectar feedings is so exact that it's unique among wildlife. In fact, rufous hummingbirds in the Canadian Rockies show episodic memory similar to the way humans use a stopwatch, researchers Andrew Hurly at the University of Lethbridge in Alberta and his colleagues in Britain have found.”

“The hummingbirds remembered the locations and timing of eight rewards, updating this information throughout the day,” the biologists wrote. The scientists suspect hummingbirds – which weigh about 20 grams each and have brains the size of a grain of rice – developed such memory to avoid wasting time and energy searching for food during their 3,200-kilometre annual migration from Canada to Mexico.”

(read the whole article from CBC.ca CBCNEWS online at: http://www.cbc.ca/health/story/2006/03/06/hummingbirds060306.html)

Poem from the Globe and Mail, March 10, 2006:

Recall of the Wild
If some days you can’t remember
Things you truly thought you knew,
And you can’t remember figures,
Facts or names of you-know-who,
And you’re seeking consolation
From the world outside you door,
Well, forget it. Game is Over.
No excuses any more.
For a hummingbird called rufous
Has a tiny little brain
Which is just one-7,000th
Of the one we humans claim,
Yet it keeps a mental record
Of each flower on each trip
And of when that flower’s nectar
Will be once more fit to sip.

All the scientists are startled
By its memorizing feats.
What they thought was human-centric
Is a test the rufous meets.
That’s “not bad” says Andrew Hurly,
Who’s a prof at Lethbridge U
And who marvels that the rufous
Can recall each scent and cue.
So the next time you are searching
For the glasses you’ve misplaced
Or attempting to remember
On what fact a statement’s based,
Give a thought to dear old rufous
Who, though very, very small,
Has a big, prodigious power
To humiliate us all.
2006 DEPARTMENT RESEARCH ACTIVITIES

Presentations (Posters and Talks):


Kastelic, J.P. The art and science of scientific writing; Principles of preparing posters and powerpoint presentations. 8th Workshop on Clinical Endocrinology: Endocrine aspects in Management of Reproduction in Ruminants. Faculty of Veterinary Science, Szent István University, Budapest, Hungary, July 5-6, 2006.

Kastelic, J.P. Effect of environmental factors and nutrition on puberty in male ruminants. 8th Workshop on Clinical Endocrinology: Endocrine aspects in Management of Reproduction in Ruminants. Faculty of Veterinary Science, Szent István University, Budapest, Hungary, July 4, 2006.


Kovalchuk, I. Invited Talk: Department of Biology, University of Rochester, Rochester, USA, December 18th, 2006. Transgenerational genome instability correlates with adaptation to stress.


Kovalchuk, I. Invited Talk: Department of Molecular Biology, Massachusetts General Hospital, Boston June 27th, 2006. “Genetic and epigenetic regulations of plant response to stress”


Skotarek, S., Colwell, D.D., Goater, C. 2006 Spatial and temporal variation in Anoplocephala perfoliata infection in southern Alberta (Canada): Preliminary data. International Congress of Parasitology, Aug 4-10, Glasgow


**Papers, Articles, Chapters, etc.:**


**Patents:**


Kovalchuk, I., Boyko, A. “COMPOSITION AND METHOD FOR ENHANCING PLANT TRANSFORMATION AND HOMOLOGOUS RECOMBINATION” filed, August 22, 2006, and was assigned Serial No. 11/466,184.

(Note: Underlined names are students, and department members are shown in bold in each citation)

**Upcoming Issue:**
Watch for the special graduate student edition of the newsletter to be released in the fall.