



London Health Sciences Foundation

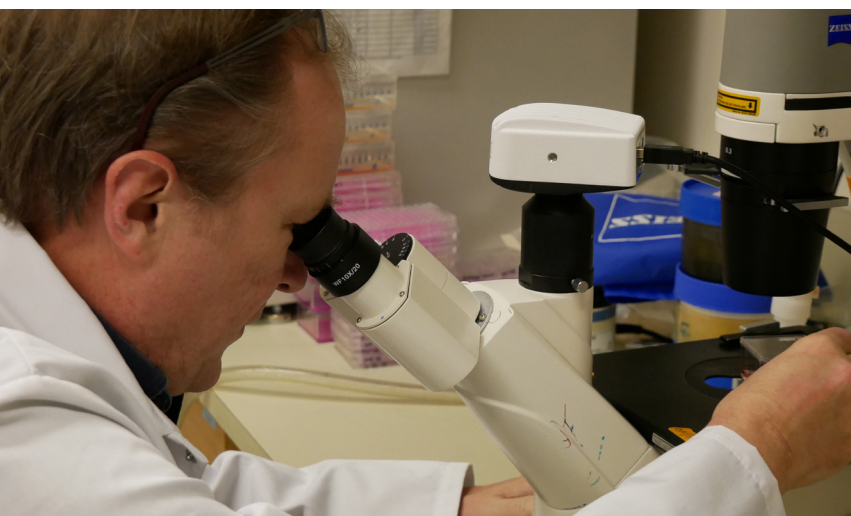
# HEAD & NECK CANCER UPDATE

Front Cover From Left: Dr. Kevin Fung, Dr. John Yoo, Dr. Danielle MacNeil, Dr. Anthony Nichols:  
The Head & Neck Cancer Team





# THANK YOU.



By supporting groundbreaking cancer research and education in our community today, you are changing lives tomorrow.

Our hospital's Translational Head and Neck Cancer Research Program is making headway in a number of areas thanks to the generosity of people like you.

Donor funding has already supported the Global Anaplastic Thyroid Cancer (ATC) Initiative; a multi-institutional project which has been submitted for publication. This research is the first step in a broader understanding of not only ATC, but other similarly aggressive deadly cancers.



**This research project as well as many others wouldn't be possible without your help. For that, we are truly grateful.**





An update from

## Dr. Anthony Nichols

Director, Translational Head & Neck  
Cancer Research Program, LHSC

Head and neck cancer is one of the fastest rising human cancers. Both the disease and its treatments can have profound side effects on patient quality of life including disfigurement, and problems speaking and swallowing. Our research program has made several discoveries into the biology of head and neck cancers, which will lead to improved treatments.

Your donations have a crucial impact on supporting this type of research and the need for research in the future. We are grateful for your support in helping us achieve better outcomes for patients and their families.

Sincerely,

Dr. Anthony Nichols  
Associate Professor, Otolaryngology - Head  
and Neck Surgery and Oncology  
Director, Translational Head and Neck Cancer  
Research Program, LHSC  
Chair, Head and Neck Disease Site Team,  
LRCP

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*Without donor funding, all the patients that we have treated today would have got conventional therapy and would not have been able to benefit from new technology.*”



# Current Initiatives from the Head & Neck Cancer Team

## With the Support of Donors Like You



### Dr. Kevin Fung, Chair/Chief, Otolaryngology, Head & Neck Surgery

- **Educating Medical Students Across Canada:** Leading educational standardization for the study of head and neck that include online modules.
- **Emergencies Bootcamp:** Created a two-day bootcamp for otolaryngology residents in Canada and the United States to practice emergency procedures before encountering them in everyday practice.



### Dr. John Yoo, Former Chair Chief, Otolaryngology, Head & Neck Surgery

- **Facial Reconstructive Technology:** Popularized major mandible and jaw bone reconstructive technology that has been translated for other surgeons.
- **Facial Nerve Clinic:** A monthly clinic run with cosmetic surgeon, Dr. Damir Matic, that focuses on reconstructive surgery and rehabilitation for paralysis patients.



### Dr. Danielle Macneil, Head & Neck Surgeon, Otolaryngology

- **Patient Survivorship Program:** Working to systematically increase communication between the hospital, patient and external care providers, post-discharge.
- **Institute for Clinical Evaluative Sciences:** Dr. Macneil is a researcher with ICES — a program with access to thousands of historical Ontario health-related data. Can now make comparisons against patients in real-time which would otherwise be impossible.



### Dr. Anthony Nichols, Director, Translational Head & Neck Cancer Research

- **Collaborative Research Initiative:** Bringing together national otolaryngology specialists and radiation oncologists to discuss projects and leverage successes.
- **Personalized Treatment for HPV Cancer Patients:** Studying tumour cells with genomicist, Dr. Boutros, to identify the risk of cancer recurrence in HPV cancer patients, before treatment — cost \$1.25M.



### Dr. David Palma, Radiation Oncologist

- **ORATOR Trial Series - I, II, III:** Comparing traditional radiotherapy and new transoral robotic therapy to measure patient's quality of life, functional outcomes, toxicity profiles and survival rates. Trial one randomly selected patients, trial two selected HPV positive patients, and the third will select HPV negative patients. The protocol for the third trial has been completed and there is an appeal for funding — cost is approximately \$200K.

Donor Impact on the

# Global Anaplastic Thyroid Cancer Initiative

At London Health Sciences Centre (LHSC)

## What is the initiative?

Anaplastic thyroid cancer (ATC) is extremely rare and traditional treatment methods have not been successful. Genetic studies of other cancers, however, have provided tremendous insight into the molecular underpinnings of the disease which have resulted in better treatment options for patients.

In order to study ATC in the same capacity — understanding its progression and identifying new treatment options — enough tissue samples had to be collected. This is a task one hospital could not do on its own.

*Together, Dr. Anthony Nichols, Director of Translational Head and Neck Cancer Research Program at LHSC, and Dr. Paul Boutros, Associate Professor of Pharmacology and Toxicology at the University of Toronto, founded a multi-institutional initiative where 150 tissue samples were used to carry out the world's first comprehensive genetic study of ATC.*

## How was the research conducted?

Like other cancer genomics, many genetic mutations were observed, however, only a few were linked to the biology of the cancer and predicted response to chemotherapy treatments.

*Dr. Nichols and Dr. Boutros used cutting edge tools to manipulate ATC cells, gene by gene, to determine which mutations were important. This strategy provided tremendous insight into the biology of ATC and will have the potential to identify new treatments for the aggressive malignancy.*

**\$1,719,620**

Total cost of the ATC Initiative

**150 samples**

Of ATC were collected and analyzed from multiple, international locations

**5 years**

To complete the multi-institutional initiative

**12 institutions**

Collaborated for this initiative including: Ontario Institute of Cancer Research, Western University, MD Anderson, Yale, the Mayo Clinic, Johns Hopkins, University of Sydney, University of British Columbia, Harvard, Griffith University, University of Chicago, and Louisiana State University.

# Global Anaplastic Thyroid Cancer Initiative

## Continued

### What was/is the timeline?

<b>YEAR 1 (2016):</b>	Tumour collection, pathology review, sequencing on all platforms
<b>YEAR 2 - 3 (2017/18):</b>	Bioinformatic analysis of primary tumour samples; testing in cell lines; targeted drug screens
<b>YEAR 4 - 5 (2018/19):</b>	Integrative analysis of cell line drug testing with cell line genomic profiles; theory follow up studies

**FUTURE PLANS:** Unique, targetable tumours from the studies will be followed up with further studies. The most promising agents will be evaluated in patient derived xenografts (a surgical graft of tissue from one species to an unlike species). *The most promising drugs for the control of ATC will eventually be taken, in collaboration with industry, into early-phase clinical trials.*

### Initiative's Budget Breakdown

ITEM	AMOUNT
Genomics	\$770,800
Bioinformatics	\$219,570
High throughput testing and mechanistic studies	\$79,000
Xenograft Experiments	\$11,400
Pathology Review	\$33,350
Personnel	\$583,500
Knowledge Translation	\$22,000
<b>TOTAL</b>	<b>\$1,719,620</b>

Thank you again. Your incredible support is funding meaningful research and education — leading to real change in patients' lives.

For more information about how you can raise money for head and neck cancer research and care, please contact:

#### Donations and giving:

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