

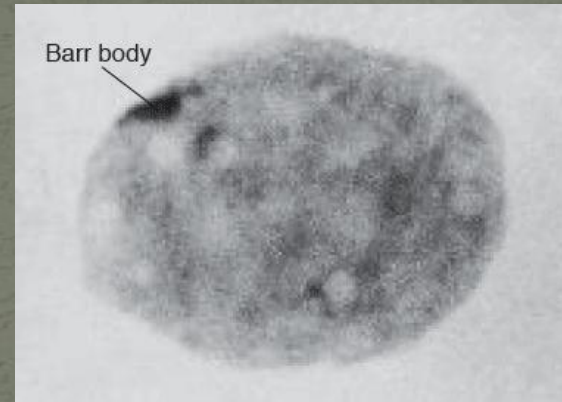
The GLCC: 50th Anniversary

A brief history of Cytogenetics(in pictures)

The When, Why, Where and How of the GLCC

- In the beginning, Cytogenetics did not exist
 - Techniques were pioneered by plant geneticists
 - Progress was slow due to inability to visualize human chromosomes as individual structures
 - Each decade since the late 40's has resulted in incredible improvements in the quality of data available to us for the analysis and diagnosis of chromosome abnormalities
 - The GLCC began early in the history of Cytogenetics: whose idea was it and how did it come about?
 - But first, the history of Cytogenetics!

The 1940's – the Sex Revolution

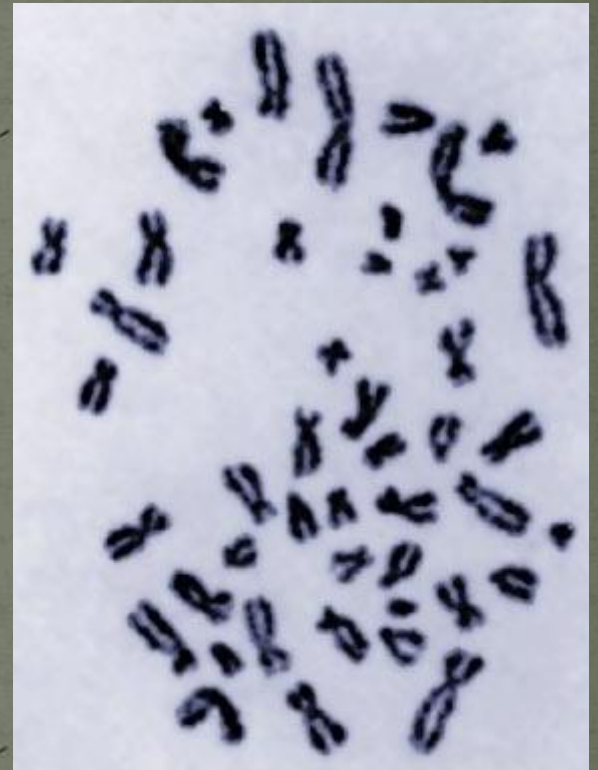


A way to clearly visualize human chromosomes was yet to be discovered.

Dr. Murray Barr and **Dr. Ewart Bertram** discovered sex-chromatin, now known as the **Barr body**, while working at The University of Western Ontario, in 1949.

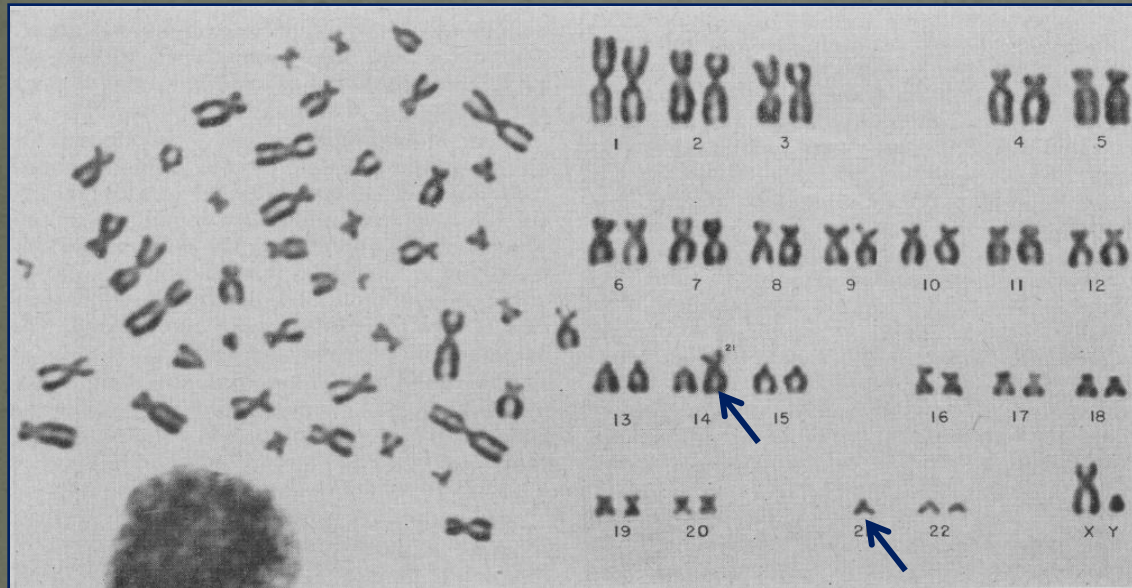
The 50's – the Hypotonic Revolution

- T. C. Hsu discovered the utility of hypotonic solution in 1952
- Tijo and Levan reported the correct chromosome number in humans *in vitro*. This was confirmed within a year, *in vivo* by Ford and Hamerton (1956)



They could count now, but classification was rough and approximate.

The 1960's – the Clinical Revolution



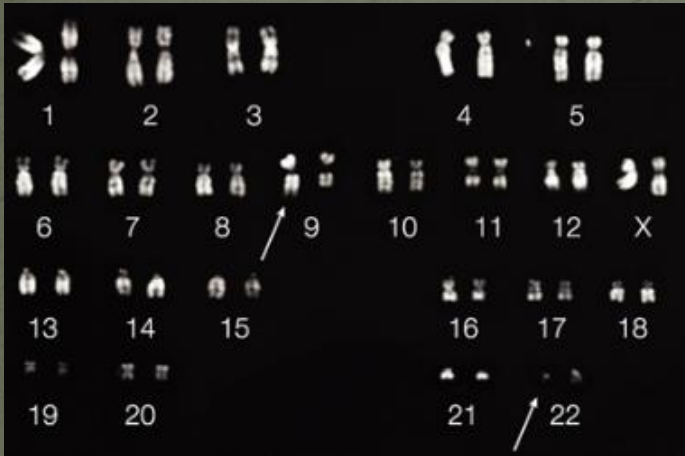
852 SERGOVICH AND OTHERS: MONGOLISM

Canad. Med. Ass. J.
Oct. 20, 1962, vol. 87

A 13-15/21 Translocation Chromosome in Carrier Father and Mongol Son

FREDERICK R. SERGOVICH, B.A., HUBERT C. SOLTAN, Ph.D.
and DAVID H. CARR, M.B., Ch.B., *London, Ont.*

The 1970's – The Banding Revolution

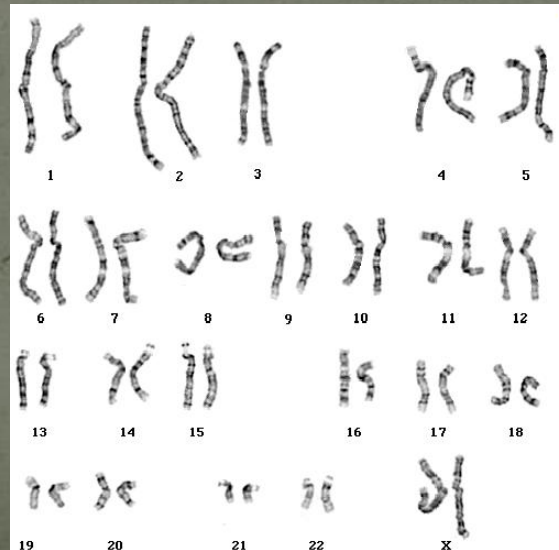


Q-banding, Caspersson, 1970



G-banding by trypsin (Seabright, 1971)

High Resolution G-banding, Yunis, 1975



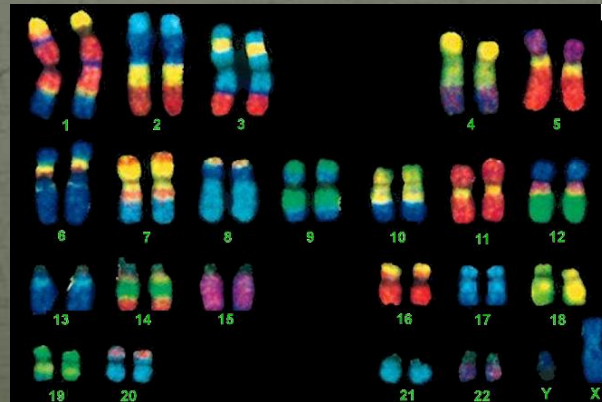
The 80's – The Imaging Revolution

Several companies sprouted at this time, offering semi-automated karyotyping and high quality digital imaging

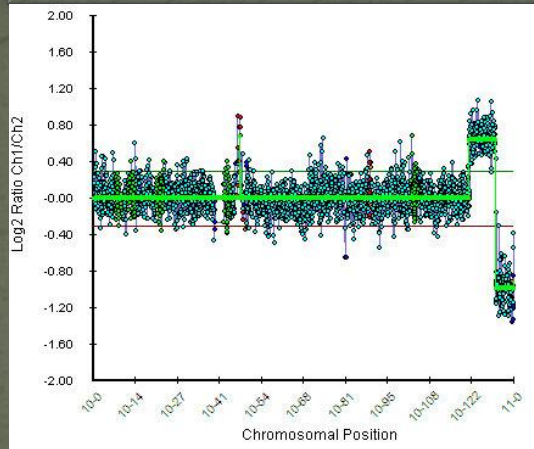


The 90's – The Colour Revolution

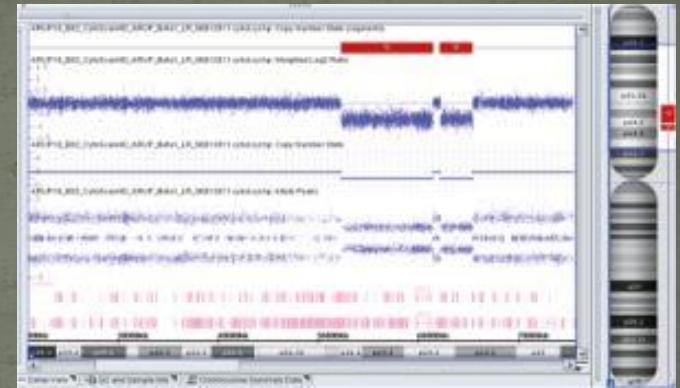
The return to fluorescence microscopy - whole chromosome painting, SKY, and unique locus probes



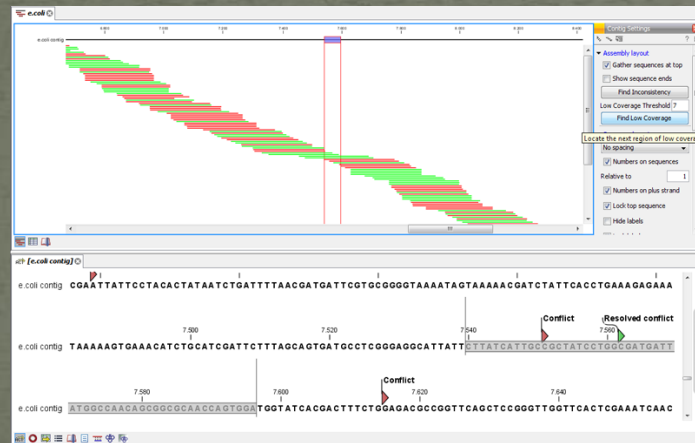
The 2000's: The Genomics Revolution



BAC and Oligo Arrays



SNP Arrays



NextGen Sequencing

The GLCC: Founded in 1962

- On a sleuthing mission, Dr. Sandra Farrell and Marsha Speevak tracked down Dr. David Carr, an early member of the GLCC. We found him in the far reaches of Old Burlington and interviewed him over lunch for this retrospective.
 - Dr. Carr and his colleague Murray Barr began to meet with other scientists interested in chromosomes annually. They gathered around a table and passed around karyotypes discussing cases and interpretations.
 - Little published literature existed at that time. The attendees recognized the need to organize the group and decided to name it: thus GLCC was officially born in 1962.
 - The earliest meetings took place in London, Ontario with about a dozen people attending from NE USA and Canada.

Some Original Members

-
- David Carr (London)
 - Murray Barr (London)
 - Hubert Soltan (London)
 - Fred Sergovich (London)
 - Patrick Conen (Toronto)
-
- Louis Dallaire (Montreal)
 - Paul Genest (Quebec)
 - Neil MacIntyre (Cleveland)
 - Marjorie Shaw (Ann Arbor)

Events and Dates to Remember

During the GLCC over the decades

GLCC Date to remember

November 22, 1963



Dr. Carr was called aside during the meeting to be told of the assassination. He decided to withhold the news until the meeting ended later that day. Several of the attendees were American and everyone was deeply affected by the news.

GLCC Dates to Remember

May 14, 2002

Dr. Allen Gardner passed away following a brief illness, the day before the GLCC in 2002. Spontaneously, the organizers decided to name the closing GLCC lecture after Allen. Dr. Xavier Estivill (Barcelona, Spain) was the first lecturer recognized under the title of Dr. H. Allen Gardner Memorial Lecturer



Dr H Allen Gardner, 1995

GLCC Date to remember: May 15, 2003

SARS was in high gear the week of GLCC, 2003. Our guest speaker that year was to have been Dr. Neil Lamb (Georgia). He had to cancel his appearance as he was to go on a cruise the following week and was told he wouldn't be allowed on the ship if he came to Toronto. Dr. Douglas Boreham (McMaster U) was able to take his place.

The meeting was abbreviated to one day that year as the entire city was under quarantine and many other speakers were unable to attend.



GLCC Date to Remember: February 22, 2012

- “We lost a dear friend, a great mentor, a brilliant educator, visionary researcher, passionate scientist and steadfast leader in the autism community. She will be deeply missed..”
 - Suzanne Lewis, Director of the Autism Spectrum Interdisciplinary Research (ASPIRE) Program of ASD-CARC

In Memoriam: Jeannette Holden

Jeannette at the GLCC: 2008



Jeannette at the GLCC: 2008



GLCC Places to Remember



UWO, London (1960's)



TGH - Toronto, 60's-70's



Michener Institute, 80's

GLCC Places to Remember



GLCC Reception at
the Gardners' in the
80's



GLCC People we Remember:



70's, 80's, 90's



GLCC Attendees



2002/2003



GLCC Attendees



2004/2005



GLCC Attendees

2006/2007



GLCC Attendees



2008/2009



GLCC Attendees



2010/2011



Past and Current Organizers

- Allen Gardner
- Sandra Farrell
- Marsha Speevak
- Michelle Wood
- Jo Dolling



- Kathy Chun
- Mary Shago
- Ellen Mak Tam



The GLCC – 2013 and beyond

- Will the GLCC survive the Genomics Revolution?

Most Definitely!