Generating Better Boolean Queries

- Method:

  - Define **transformations** that can be applied to clauses of Boolean queries

    - **No new terms are added or removed** (except the use of MeSH explosion)

    - Only **syntactic changes** made to query

  - **Apply** all transformations to a query (application)

  - **Select** the best query (candidate selection)

  - **Repeat** until some criteria is met (stopping criteria)

Pipeline

Original Query

Parsing & Clause Extraction

Application of Transformations to each Clause

Query Candidate Generation

Query Candidate Selection

Transformed Query

QUERY TRANSFORMATION CHAIN

ORIGINAL QUERY

$c_{1\tau_1}$ $c_{5\tau_1}$ $c_{7\tau_1}$

TRANSFORMED QUERY

q $c_{1\tau_2}$ $c_{5\tau_2}$ $c_{7\tau_2}$ $\hat{q}$

$c_{1\tau_3}$ $c_{5\tau_3}$ $c_{7\tau_3}$

CLAUSE

TRANSFORMATION