

Progress Report on Prof. Seldin's SICSA visiting fellowship

September 11, 2013

Professor Jonathan Seldin visited Scotland for the period 26 August-9 September 2012. During his visit, he gave two seminars as follows:

1. **Relating Church-style Typing and Curry-style Typing: Preliminary Report.** Presented at Heriot-Watt University on 28 August 2013.
2. **On Normalizing Disjunctive Intermediate Logics.** Presented at the University of St Andrews on 3 September 2013 and hosted by Dr. Roy Dyckoff.

His visit has been a success. On Wednesday 28 August, his talk at Heriot-Watt was made into a mini workshop which also hosted Dr. Roger Hindley from the University of Swansea as an invited speaker. The workshop attracted participants from both Edinburgh University and Heriot-Watt University. The mini-workshop spraked active and lively discussions with ideas that are being followed up. In particular, the discussion centered around the contributions made by British Mathematicians such as Alan Turing and M.A.E Newman to type theory and the foundations of theoretical Computer Science. The visit to St the University of St Andrews has also been a success since it sparked interesting discussions on the status of research on normalisation and cut-elimination to which Dr. Dyckoff is a big contributor.

In addition to the seminars, Prof. Seldin worked with Prof. Kamareddine on an article that relates type theory à la Church and type theory à la Curry. The interpretation of Church style in Curry's style has been carried out by Barthe and Sorenson but in a manner that loses type information. The work under investigation by Kamareddine and Seldin attempts to preserve type information while also establishing the status of the standard theorems such as subject reduction and normalisation. In addition, the workshop and further discussions sparked the need for a comprehensive study à la Church and à la Curry of the large number of reduction strategies that are used in programming language theory (most such reduction strategies are highly influenced by the work of Church, Curry and de Bruijn, and to which both Prof. Seldina nd Prof. Kamareddine have contributed).