Abstracts of invited talks in the Special Session on Gödel and Mathematical Logic in the 20th Century

▶ MARTIN DAVIS, *What did Gödel believe and when did he believe it?*
3360 Dwight Way, Berkeley, California 94704, USA.
E-mail: martin@eipye.com.

In Gödel's (unsent) reply to the questionnaire sent to him by B. D. Grandjean he asserted that since 1925 he had held a position of "mathematical realism" whereby "mathematical concepts [and sets] and theorems are describing objects of some kind." (The words in square brackets were added by Gödel.) A more nuanced story emerges from the hints made available with the publication of the magnificent five volume set of Gödel's ***Collected Works***.

▶ JOHN W. DAWSON, JR. AND CHERYL A. DAWSON, *Future tasks for Gödel Scholars*.
Penn State York, 393 Waters Road, York, Pennsylvania 17403, USA.
E-mail: jwd7@psu.edu.

As initially envisioned, Gödel's ***Collected Works*** were to include transcriptions of material from his mathematical workbooks. In the end that material, as well as some other manuscript items from Gödel's *Nachlass*, had to be left out. This talk will highlight unpublished items in the *Nachlass* that appear to be of interest to scholars and will survey the extent of transcription efforts undertaken hitherto. Some suggestions concerning untapped sources outside the *Nachlass* will also be given.

▶ SOLOMON FEFERMAN, *Gödel on the installment plan*.
Department of Mathematics, Stanford University, Stanford, CA 94305-2125, USA.
E-mail: sf@csli.stanford.edu.

I will trace the (at times halting, at other times intense) development of the Gödel editorial project from the first initiatives following Gödel's death in 1976 through the publication in 2003 of the final volumes, IV and V, of his Collected Works. This will be a mix of personal and intellectual retrospective with a pointer to the future: though our edition aimed to be (and indeed, was) comprehensive, it was, fittingly, not complete.

▶ WARREN GOLDFARB, *Gödel and Carnap: influence and opposition*.
Department of Philosophy, Harvard University, Emerson Hall, Cambridge, MA 02138, USA.
E-mail: goldfarb@fas.harvard.edu.

Kurt Gödel and Rudolf Carnap had significant interaction in the period 1928–1932. In fact, it was Carnap's 1928 lectures that played a crucial role in stimulating Gödel's interest in logic and foundations of mathematics. Even more specifically, Gödel's inquiries into questions of completeness were elicited by Carnap's attempt to treat similar questions in those years, and the flaws that Gödel found in it. I survey their interaction, the consequent nature of their influence on each other, and how it shaped the formulation of Gödel's first remarkable contributions to logic.

▶ WILFRIED SIEG, *Only two letters: the correspondence between Herbrand and Gödel*.
Department of Philosophy, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh, PA 15213, USA.
E-mail: WS15t@andrew.cmu.edu.

In 1931, two young logicians—whose work impacted the direction of logic dramatically and is even now central for logic and computer science—exchanged two letters. Herbrand initiated the correspondence on April 7, 1931, and Gödel responded on July 25, two days before Herbrand died in a mountaineering accident.

Herbrand's letter was to play a significant role in the development of computability theory.

As Gödel first noted in his 1934 Princeton Lectures, it suggested to him a crucial part of the definition of a *general recursive function*. Understanding this role in detail is of deep interest: the notion is central, the letter had not been available until recently, and its content as reported by Gödel was not fully in accord with Herbrand's contemporaneous work.

Together, the letters reflect the broader intellectual currents of the time: they are intimately linked to the discussion of the incompleteness theorems, their potential impact on Hilbert's Program, and the concept of a finitist or intuitionist function. The analysis of the letters and their proper context undermines some deeply held convictions concerning our logical past.

► W. W. TAIT, *Gödel's reformulation of Gentzen's first consistency proof for arithmetic: the no-counterexample interpretation.*
Department of Philosophy, University of Chicago, Chicago, IL 60637, USA.
E-mail: wwtx@earthlink.net.

In *1938a, Gödel rather briefly describes a reformulation of Gentzen's first consistency proof that applies directly to the Hilbert-style formalization of *PA* rather than to formalizations in the sequence calculus or natural deduction. He asserts that, from each proof of an arithmetic formula A in *PA*, we effectively obtain a sequence $\vec{\Phi}$ of third-order functionals, defined by recursion up to some ordinal $< \epsilon_0$, and a proof of $\forall \vec{f} B(\vec{\Phi}, \vec{f})$, where $\exists \vec{G} \forall \vec{f} B(\vec{G}, \vec{f})$ is (what came to be called) a no-counterexample interpretation of A. I will present a more detailed exposition of the argument.