The Rail Research UK Association (RRUKA) was established in 2010 with the aim of creating a partnership between the Railway industry and academics engaged in railway research in the UK. Since then, RRUKA has firmly established itself in the research landscape and has initiated many activities which have formed the keystone of the bridge joining industry and academia. Nearly 40 universities and a wide cross-section of industry representatives have enthusiastically embraced the opportunity to foster relationships with each other; gaining a greater understanding of what researchers can offer and what issues industry faces.

The papers in this special issue of the Journal of Rail and Rapid Transit have been selected from those presented at the first RRUKA Annual Conference held at the Royal Society in London in November 2012. Designed to give people a flavour of the range of research being undertaken and used by the rail sector, over 150 people heard 17 research presentations, three keynote addresses and four industry presentations. With topics ranging from reducing suicide to improving capacity, and from wheelset costs to human performance, the conference showed the diversity of subjects being investigated.

In his keynote address Paul Stein, Chief Scientific Officer at Rolls-Royce, emphasised the vital role played by university research in achieving innovation at Rolls-Royce, where over 600 people are working in their university research centres, and stressed the need for a structured path to implementation. Professor Richard Parry-Jones, Chairman of Network Rail, talked enthusiastically about the capability of UK universities, and their key role in achieving UK’s competitive advantage. He highlighted the benefits of collaborations and of bringing in fresh ideas from other sectors and emphasised the need for the rail industry to be bolder and to think bigger when it comes to research.

The selected papers are representative of the wide range of research being carried out and include those covering vehicles and infrastructure as well as operations and human factors. Some of the work presented is aimed at improving fundamental knowledge but in other papers the focus is on the development of tools to allow optimisation of aspects of operation or maintenance. One area where research has been applied with significant effect is in the provision of new techniques to meet increasingly high demands on the reduction of noise and emissions and fuel economy. Finally several papers present a fundamental rethink of ways in which system tools can be developed to make the best use of the vast array of data now available to the railway in the safest and most efficient way.

The papers presented here represent a cross section of the best research being carried out by UK researchers supported by industry partners. We hope that you will find this special issue interesting and useful. If you are interested in the work of RRUKA please visit the website for further details: www.rruka.org.uk

Colin Dennis and Simon Iwnicki

RRUKA Co-Chairs