**Thank you for your interest to present your work at xMAP® Connect 2017!**

* Prepare a presentation title, the title included on the submission should be suitable for published material.
* Abstract text is limited to 3000 characters (approx 500 words).
* We ask to use 4 core elements: 1) background and aim, 2) methods, 3) results, 4) conclusions. We kindly ask you to use the format below.
* Please ensure the submission has been approved by all authors.
* By submitting an abstract, you agree to be present the 8th and 9th of November at the congress, should your abstract be selected.
* Please indicate if you would like to be a speaker or present a poster.

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| **Title:** Automated coupling of pneumococcal polysaccharides to beads using the KingFisher Flex  |
| 1) Background and aim:*Streptococcus pneumoniae* remains a major cause of morbidity and mortality worldwide, despite the success of conjugate vaccines. Therefore, it is necessary to continue monitoring the impact of vaccination. One way this can be achieved is through a pneumococcal multiplex immunoassay. Traditionally, multiplex assays are much faster than traditional assays, have a wider range, and require less sample volume. For *S. pneumoniae* one of the biggest assay constraints is the conjugation of polysaccharide (PS) to bead, which is an intensive and lengthy process. The ThermoFisher Scientific Kingfisher Flex system offers automatic, plate-based handling of magnetic beads which could provide a hands-off way to conjugate PS to bead. A feasibility study using the Kingfisher Flex system for automatic PS-bead coupling was performed.2) Methods:Pneumococcal polysaccharides for serotypes 1, 3, 4, 5, 6B, 7F, 9V, 14, 18C, 19A, 19F, and 23F were conjugated to poly-l-lysine, a linker molecule, and then to Magplex microspheres using the manual in–house method or the Kingfisher. Following conjugation, beads were analysed using a Bioplex system and Bioplex Manager software. 3) Results:A protocol mirroring the manual in-house protocol was built on the Kingfisher with two changes: centrifugation and orbital shaking were done in the Kingfisher using the medium and slow speeds, respectively. All 12 serotypes were successfully conjugated to Magplex beads using the Kingfisher and results were comparable to manually conjugated beads (R2 range from 0.9792 (Pn7F) to 0.999 (Pn1)).4) Conclusion:Pneumococcal polysaccharide/poly-l-lysine conjugates were successfully conjugated to Magplex beads using the Kingfisher Flex system with only minor changes required, as compared to the in-house protocol. Using the Kingfisher Flex for conjugation is faster and easier than manual conjugation and would allow for an increase in both conjugation volume and throughput. |