

dissertation committee:

prof.dr. Christina M.J.E. Vandenbroucke-Grauls
prof. dr. Wim. J. Quax
dr P. van der Ley
dr. D. Bald
dr. A. van der Ende

The research described in this thesis was conducted at the Department of Molecular Microbiology, VU University, and financially supported by Higher Education Commission (HEC) of Pakistan and VU University, Amsterdam., The Netherlands.

Cover:

Type V pastel - oil chalks on paper 28/42 cm - by Ovidiu Pop (ovidius.art@gmail.com)

Printed by: Off Page

ISBN: 978-94-6182-458-5

Copyright © 2014 Rahman S.u., Amsterdam. All rights reserved. No part of this thesis may be reproduced or transmitted in any form, by any means, electronic or mechanical, without the prior written permission of the author, or where appropriate, of the publisher of the articles.

Publication of this thesis was partly financed by *Pfizer*.

VRIJE UNIVERSITEIT

**The role of the TpsB transporters in Two-Partner Secretion systems
of *Neisseria meningitidis***

ACADEMISCH PROEFSCHRIFT

ter verkrijging van de graad Doctor aan
de Vrije Universiteit Amsterdam,
op gezag van de rector magnificus
prof.dr. F.A. van der Duyn Schouten,
in het openbaar te verdedigen
ten overstaan van de promotiecommissie
van de Faculteit der Aard- en Levenswetenschappen
op dinsdag 24 juni 2014 om 13.45 uur
in de aula van de universiteit,
De Boelelaan 1105

door

Sadeeq ur Rahman

geboren te Khall, District Dir, Pakistan