

Cover Page



Universiteit Leiden



The handle <http://hdl.handle.net/1887/22617> holds various files of this Leiden University dissertation.

Author: Celler, Katherine Anna

Title: A multidimensional study of streptomyces morphogenesis and development

Issue Date: 2013-11-27

A Multidimensional Study of *Streptomyces*
Morphogenesis and Development

PROEFSCHRIFT

ter verkrijging van de graad van doctor
aan de Universiteit Leiden,
op gezag van de Rector Magnificus prof. mr. C.J.J.M. Stolker
voorzitter van het College voor Promoties
in het openbaar te verdedigen op
woensdag 27 november 2013
klokke 12:30

door
Katherine Anna Celler
geboren te Vancouver, Canada
30 juli, 1985

PROMOTIECOMMISSIE

Promotor: Prof. dr. G.P. van Wezel

Overige leden: Prof. dr. J. Brouwer
Prof. dr. ir. A.J. Koster
Prof. dr. ir. M.C.M. van Loosdrecht
Prof. dr. H.P. Spaink
Prof. dr. hab. J. Zakrzewska-Czerwińska



Enabling new technology

This research was supported by the Dutch Technology Foundation STW, which is part of the Netherlands Organisation for Scientific Research (NWO) and partly funded by the Ministry of Economic Affairs (project number 10379).

Printing of this thesis was partially sponsored by the Stichting tot Bevordering van de Elektronenmicroscopie in Nederland (SEN).

Printed by Smart Printing Solutions, Gouda, the Netherlands.

“There’s a lot of beauty in ordinary things -”

Pam Halpert, the office

TABLE OF CONTENTS

Chapter I	7
General Introduction and Outline of Chapter Contents	
Chapter II	13
Review: A Multidimensional View of the Bacterial Cytoskeleton	
Chapter III	31
Single Particle Tracking of Dynamically Localizing TatA Complexes in <i>Streptomyces coelicolor</i>	
Chapter IV	47
Intracellular Membrane Structures Mediate Crosswall Formation and Nucleoid Occlusion in <i>Streptomyces</i>	
Chapter V	67
Structured Morphological Modeling as a Framework for Rational Design of <i>Streptomyces</i> Species	
Chapter VI	91
Dynamic Biological Visualization – 3D Modeling using WebGL	
Chapter VII	97
Functional Analysis of Novel Coiled-Coil Proteins in <i>Streptomyces coelicolor</i> and their Role in Growth and Morphogenesis	
Chapter VIII	
General Discussion	125
Nederlandse Samenvatting	131
References	137
Curriculum Vitae	148
List of Publications	149

