PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	EXECUTIVE ORDER 9424, CONFIRMATORY LICENSE

CONVEYING PARTY DATA

Name	Execution Date
The Pennsylvania State University	10/04/2010

RECEIVING PARTY DATA

Name:	National Science Foundation
Street Address:	4201 Wilson Blvd
Internal Address:	Room 1265
City:	Arlington
State/Country:	VIRGINIA
Postal Code:	22230

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	12886649

CORRESPONDENCE DATA

Fax Number: (703)292-9041

Correspondence will be sent via US Mail when the fax attempt is unsuccessful.

Email: nsfpatents@nsf.gov

Correspondent Name: National Science Foundation

Address Line 1: 4201 Wilson Blvd Address Line 2: Room 1265

Address Line 4: Arlington, VIRGINIA 22230

NAME OF SUBMITTER: Robin Clay

Total Attachments: 1 source=26#page1.tif

PATENT 501389327 REEL: 025562 FRAME: 0134

LICENSE TO THE UNITED STATES GOVERNMENT

This instrument confirms to the United States Government, as represented by the National Science Foundation, a nonexclusive, nontransferable, irrevocable, royalty-free license to practice or have practiced on its behalf throughout the world the following subject invention:

Invention Title:						
"OptStrain: A Computational Framework for Redesign of Microbial Production						
Systems"						
Inventor(s):						
Costas Maranas, Anthony Burgard, Priti Pharkya						
Patent Appl. Serial No.:	Filing Date:		Country (if other than U.S.):			
12/886,649	9/21/2010		All Countries			
NSF Disclosure No.:		PSU Disclosure No.:				
		2004-2932				

This license will extend to all divisions or continuations of the patent application and all patents or re-issues which may be granted thereon.

The subject invention was made with Government support under Grant No. BES0120277 awarded by the National Science Foundation.

Principal rights to this subject invention have been left with the Assignee: <u>The Penn State Research Foundation</u>, subject to the provisions of the Patent Rights clause included in the above identified contract with National Science Foundation.

SIGNATURE and TITLE OF ASSIGNEE:

Ву:	Rayl.	Hus	Date:	: October 4, 2010	
Name:_	Ronald J. H	uss	Title:	Director, Intellectual Property	⊇ff
	(printed	d)		(printed)	
BUSINE	SS ADDRESS:	The Pe	enn State Resear	ch Foundation	

The Penn State Research Foundation
The Pennsylvania State University
c/o Intellectual Property Office
113 Technology Center

University Park, PA 16802

PATENT RECORDED: 12/23/2010 REEL: 025562 FRAME: 0135