This Agreement between Virginia Polytechnic Institute and State University -- MaryJoe Rice ("You") and Springer ("Springer") consists of your license details and the terms and conditions provided by Springer and Copyright Clearance Center.

License Number          4136131173064
License date             Jun 25, 2017
Licensed Content Publisher Springer
Licensed Content Publication Quantitative Biology
Licensed Content Title    Modeling information exchange between living and artificial cells
Licensed Content Author  Keith C. Heyde
Licensed Content Date    Jan 1, 2017
Licensed Content Volume  5
Licensed Content Issue   1
Type of Use              Thesis/Dissertation
Portion                  Full text
Number of figures/tables/illustrations 5
Number of copies         1
Author of this Springer article Yes and you are a contributor of the new work
Country of republication other
Order reference number
Title of your thesis / dissertation Programmable Microparticle Scaffolds for Enhanced Diagnostic Devices
Expected completion date Jun 2017
Estimated size(pages) 80
Requestor Location Virginia Polytechnic Institute and State University
                        155 Otey Street
                        BLACKSBURG, VA 24060
                        United States
                        Attn: Virginia Polytechnic Institute and State University
Billing Type Invoice
Billing Address Virginia Polytechnic Institute and State University
                        155 Otey Street
                        BLACKSBURG, VA 24060
                        United States
                        Attn: Virginia Polytechnic Institute and State University
Total 0.00 USD

Terms and Conditions
Introduction
The publisher for this copyrighted material is Springer. By clicking "accept" in connection with completing this licensing transaction, you agree that the following terms and conditions apply to this transaction (along with the Billing and Payment terms and conditions established by Copyright Clearance Center, Inc. ("CCC"), at the time that you opened your Rightslink account and that are available at any time at http://myaccount.copyright.com).

Limited License
With reference to your request to reuse material on which Springer controls the copyright, permission is granted for the use indicated in your enquiry under the following conditions:
- Licenses are for one-time use only with a maximum distribution equal to the number stated in your request.
- Springer material represents original material which does not carry references to other sources. If the material in question appears with a credit to another source, this permission is not valid and authorization has to be obtained from the original copyright holder.
- This permission
  • is non-exclusive
  • is only valid if no personal rights, trademarks, or competitive products are infringed.
  • explicitly excludes the right for derivatives.
- Springer does not supply original artwork or content.
- According to the format which you have selected, the following conditions apply accordingly:
  • **Print and Electronic:** This License include use in electronic form provided it is password protected, on intranet, or CD-Rom/DVD or E-book/E-journal. It may not be republished in electronic open access.
  • **Print:** This License excludes use in electronic form.
  • **Electronic:** This License only pertains to use in electronic form provided it is password protected, on intranet, or CD-Rom/DVD or E-book/E-journal. It may not be republished in electronic open access.

For any electronic use not mentioned, please contact Springer at permissions.springer@spi-global.com.
- Although Springer controls the copyright to the material and is entitled to negotiate on rights, this license is only valid subject to courtesy information to the author (address is given in the article/chapter).
- If you are an STM Signatory or your work will be published by an STM Signatory and you are requesting to reuse figures/tables/illustrations or single text extracts, permission is granted according to STM Permissions Guidelines: http://www.stm-assoc.org/permissions-guidelines/

For any electronic use not mentioned in the Guidelines, please contact Springer at permissions.springer@spi-global.com. If you request to reuse more content than stipulated in the STM Permissions Guidelines, you will be charged a permission fee for the excess content.

Permission is valid upon payment of the fee as indicated in the licensing process. If permission is granted free of charge on this occasion, that does not prejudice any rights we might have to charge for reproduction of our copyrighted material in the future.

-If your request is for reuse in a Thesis, permission is granted free of charge under the following conditions:
  This license is valid for one-time use only for the purpose of defending your thesis and with a maximum of 100 extra copies in paper. If the thesis is going to be published, permission needs to be reobtained.
  - includes use in an electronic form, provided it is an author-created version of the thesis on his/her own website and his/her university’s repository, including UMI (according to the definition on the Sherpa website: http://www.sherpa.ac.uk/romeo/);
  - is subject to courtesy information to the co-author or corresponding author.
Geographic Rights: Scope
Licenses may be exercised anywhere in the world.

Altering/Modifying Material: Not Permitted
Figures, tables, and illustrations may be altered minimally to serve your work. You may not alter or modify text in any manner. Abbreviations, additions, deletions and/or any other alterations shall be made only with prior written authorization of the author(s).

Reservation of Rights
Springer reserves all rights not specifically granted in the combination of (i) the license details provided by you and accepted in the course of this licensing transaction and (ii) these terms and conditions and (iii) CCC's Billing and Payment terms and conditions.

License Contingent on Payment
While you may exercise the rights licensed immediately upon issuance of the license at the end of the licensing process for the transaction, provided that you have disclosed complete and accurate details of your proposed use, no license is finally effective unless and until full payment is received from you (either by Springer or by CCC) as provided in CCC's Billing and Payment terms and conditions. If full payment is not received by the date due, then any license preliminarily granted shall be deemed automatically revoked and shall be void as if never granted. Further, in the event that you breach any of these terms and conditions or any of CCC's Billing and Payment terms and conditions, the license is automatically revoked and shall be void as if never granted. Use of materials as described in a revoked license, as well as any use of the materials beyond the scope of an unrevoked license, may constitute copyright infringement and Springer reserves the right to take any and all action to protect its copyright in the materials.

Copyright Notice: Disclaimer
You must include the following copyright and permission notice in connection with any reproduction of the licensed material:
"Springer book/journal title, chapter/article title, volume, year of publication, page, name(s) of author(s), (original copyright notice as given in the publication in which the material was originally published) "With permission of Springer"
In case of use of a graph or illustration, the caption of the graph or illustration must be included, as it is indicated in the original publication.

Warranties: None
Springer makes no representations or warranties with respect to the licensed material and adopts on its own behalf the limitations and disclaimers established by CCC on its behalf in its Billing and Payment terms and conditions for this licensing transaction.

Indemnity
You hereby indemnify and agree to hold harmless Springer and CCC, and their respective officers, directors, employees and agents, from and against any and all claims arising out of your use of the licensed material other than as specifically authorized pursuant to this license.

No Transfer of License
This license is personal to you and may not be sublicensed, assigned, or transferred by you without Springer's written permission.

No Amendment Except in Writing
This license may not be amended except in a writing signed by both parties (or, in the case of Springer, by CCC on Springer's behalf).

Objection to Contrary Terms
Springer hereby objects to any terms contained in any purchase order, acknowledgment, check endorsement or other writing prepared by you, which terms are inconsistent with these terms and conditions or CCC's Billing and Payment terms and conditions. These terms and conditions, together with CCC's Billing and Payment terms and conditions (which are incorporated herein), comprise the entire agreement between you and Springer (and CCC) concerning this licensing transaction. In the event of any conflict between your obligations
established by these terms and conditions and those established by CCC's Billing and Payment terms and conditions, these terms and conditions shall control.

Jurisdiction

All disputes that may arise in connection with this present License, or the breach thereof, shall be settled exclusively by arbitration, to be held in the Federal Republic of Germany, in accordance with German law.

Other conditions:

V 12AUG2015

Questions? customercare@copyright.com or +1-855-239-3415 (toll free in the US) or +1-978-646-2777.