

## PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT														
NATURE OF CONVEYANCE:	ASSIGNMENT														
CONVEYING PARTY DATA															
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Andrew C. Merkle</td> <td>09/13/2012</td> </tr> <tr> <td>Jack C. Roberts</td> <td>09/13/2012</td> </tr> <tr> <td>Catherine M. Carneal</td> <td>09/13/2012</td> </tr> <tr> <td>Jeffrey M. Paulson</td> <td>09/13/2012</td> </tr> <tr> <td>Matthew S. Johannes</td> <td>09/19/2012</td> </tr> <tr> <td>Liming M. Voo</td> <td>09/13/2012</td> </tr> </tbody> </table>		Name	Execution Date	Andrew C. Merkle	09/13/2012	Jack C. Roberts	09/13/2012	Catherine M. Carneal	09/13/2012	Jeffrey M. Paulson	09/13/2012	Matthew S. Johannes	09/19/2012	Liming M. Voo	09/13/2012
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<table border="1"> <tr> <td>Name:</td> <td>The Johns Hopkins University</td> </tr> <tr> <td>Street Address:</td> <td>34th and Charles Street</td> </tr> <tr> <td>City:</td> <td>Baltimore</td> </tr> <tr> <td>State/Country:</td> <td>MARYLAND</td> </tr> <tr> <td>Postal Code:</td> <td>21218</td> </tr> </table>		Name:	The Johns Hopkins University	Street Address:	34th and Charles Street	City:	Baltimore	State/Country:	MARYLAND	Postal Code:	21218				
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CORRESPONDENCE DATA															
Fax Number: 2402285254 <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i> Phone: 240-228-4386 Email: Eileen.Sorensen@jhupl.edu Correspondent Name: Noah J. Hayward Address Line 1: 11100 Johns Hopkins Road Address Line 2: M/S 7-151 Address Line 4: Laurel, MARYLAND 20723-6099															
ATTORNEY DOCKET NUMBER:	2793-0058														

CH \$40.00 13487492

NAME OF SUBMITTER:

Noah J. Hayward

Total Attachments: 4

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ASSIGNMENT

WHEREAS, Andrew C. Merkle, Jack C. Roberts, Catherine M. Carneal, Jeffrey M. Paulson, Matthew S. Johannes, and Liming M. Voo, hereinafter referred to as the ASSIGNORS, have made an invention as described in a United States patent application no. 13/487,492 entitled:

Cranial Bone Surrogate and Methods of Manufacture Thereof

WHEREAS, The Johns Hopkins University, a corporation organized and existing under the laws of the State of Maryland and having its principal place of business at Baltimore, Maryland, hereinafter referred to as the ASSIGNEE, desires to acquire an interest therein;

NOW, THEREFORE, in consideration of their employment by ASSIGNEE, the ASSIGNORS do hereby sell, assign and transfer to the ASSIGNEE the entire right, title and interest in and to said invention in the United States and its territories and possessions and in all foreign countries and the entire right, title and interest in and to said international application and any substitutions, divisions, continuations, or continuations-in-part based upon said application, and in and to any and all Letters Patent, whether original or reissue, which may be granted for said invention in the United States and its territories and possessions and in any and all foreign countries, the invention, said patent application, and any and all such patents to be held and enjoyed by the ASSIGNEE for its own use and benefit and for its legal representatives as fully and entirely as the same would have been held by the ASSIGNORS had this agreement not been made.

THE ASSIGNORS here further agree to make, execute, and deliver to the ASSIGNEE, its successors, assigns, and legal representatives, upon request but at the expense of the ASSIGNEE, any and all papers, documents, affidavits, statements, or other instruments that may be necessary in the prosecution of the aforesaid application, and of any United States or foreign applications, and of any substitutions, divisions, continuations, or continuations-in-part of said application, or applications for reissues of said Letters Patents, and to aid the ASSIGNEE, its successors, assigns, and legal representatives in every way in protecting the said invention as may be requested, provided, however that they shall not have to pay any expenses arising from extending such assistance.

THE ASSIGNORS hereby covenant that they have the right to grant the foregoing assignment.

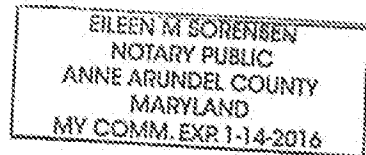
Andrew C. Merkle SEAL 9/13/12 DATE  
Andrew C. Merkle

STATE OF MARYLAND  
COUNTY OF Anne Arundel

On this 13<sup>th</sup> day of September, 2012, before me, the undersigned officer, personally appeared the above-named Andrew C. Merkle, known to me or satisfactorily proven to be the person whose name is subscribed to within the instrument and acknowledged that he executed the same for the purpose therein contained.

In witness hereof I hereunto set my hand and official seal.

Eileen M. Sorensen  
Signature  
Eileen M. Sorensen  
Printed Name  
Notary Public  
My Commission expires 1-14-2016



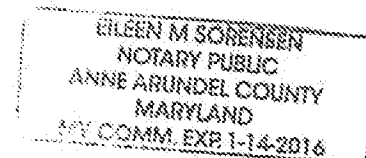
Jack C. Roberts SEAL 9-13-12 DATE  
Jack C. Roberts

STATE OF MARYLAND  
COUNTY OF Anne Arundel

On this 13<sup>th</sup> day of September, 2012, before me, the undersigned officer, personally appeared the above-named Jack C. Roberts, known to me or satisfactorily proven to be the person whose name is subscribed to within the instrument and acknowledged that he executed the same for the purpose therein contained.

In witness hereof I hereunto set my hand and official seal.

Eileen M. Sorensen  
Signature  
Eileen M. Sorensen  
Printed Name  
Notary Public  
My Commission expires 1-14-2016



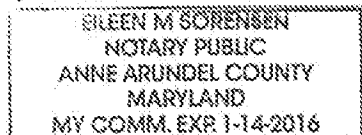
Catherine M. Carneal SEAL 9/13/12 DATE  
Catherine M. Carneal

STATE OF MARYLAND )  
COUNTY OF Anne Arundel )

On this 13<sup>th</sup> day of September, 2012, before me, the undersigned officer, personally appeared the above-named Catherine M. Carneal, known to me or satisfactorily proven to be the person whose name is subscribed to within the instrument and acknowledged that he executed the same for the purpose therein contained.

In witness hereof I hereunto set my hand and official seal.

Eileen M. Sorensen  
Signature  
Eileen M. Sorensen  
Printed Name  
Notary Public  
My Commission expires 1-14-2016



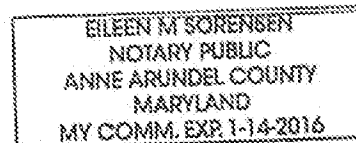
Jeffrey M. Paulson SEAL 9/12/2012 DATE  
Jeffrey M. Paulson


STATE OF MARYLAND )  
COUNTY OF Anne Arundel )

On this 12<sup>th</sup> day of September, 2012, before me, the undersigned officer, personally appeared the above-named Jeffrey M. Paulson, known to me or satisfactorily proven to be the person whose name is subscribed to within the instrument and acknowledged that he executed the same for the purpose therein contained.

In witness hereof I hereunto set my hand and official seal.

Eileen M. Sorensen  
Signature  
Eileen M. Sorensen  
Printed Name  
Notary Public  
My Commission expires 1-14-2016

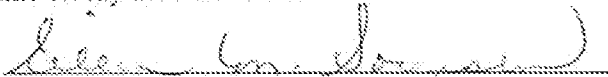


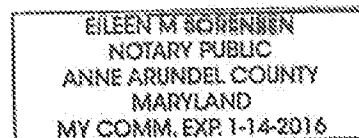
 SEAL 9-17-12 DATE  
Matthew S. Johannes

STATE OF MARYLAND  
COUNTY OF Anne Arundel

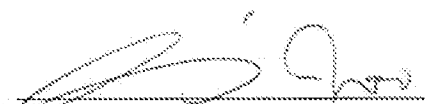
On this 17<sup>th</sup> day of SEPTEMBER, 2012, before me, the undersigned officer, personally appeared the above-named Matthew S. Johannes, known to me or satisfactorily proven to be the person whose name is subscribed to within the instrument and acknowledged that he executed the same for the purpose therein contained.

In witness hereof I hereunto set my hand and official seal.

  
Signature  
Eileen M. Sorensen  
Printed Name



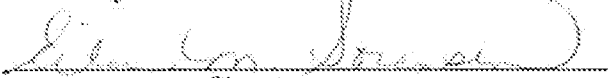
Notary Public  
My Commission expires 1-14-2016

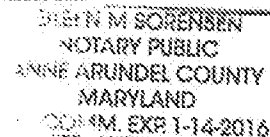
 SEAL 9/13/2012 DATE  
Liming M. Voo

STATE OF MARYLAND  
COUNTY OF Anne Arundel

On this 13<sup>th</sup> day of SEPTEMBER, 2012, before me, the undersigned officer, personally appeared the above-named Liming M. Voo, known to me or satisfactorily proven to be the person whose name is subscribed to within the instrument and acknowledged that he executed the same for the purpose therein contained.

In witness hereof I hereunto set my hand and official seal.

  
Signature  
Eileen M. Sorensen  
Printed Name



Notary Public  
My Commission expires 1-14-2016