

**Memorandum of Understanding by and among  
North Carolina Agricultural & Technical State University,  
University of Pittsburgh, and University of Cincinnati**

This Memorandum of Understanding (“Agreement”) is effective as of the \_\_\_\_ day of May, 2009 (“Effective Date”), by and among the North Carolina Agricultural & Technical State University (hereinafter referred to as “NCAT”), the University of Pittsburgh – Of the Commonwealth System of Higher Education (hereinafter referred to as “UPITT”), the University of Cincinnati (hereinafter referred to as “UC”), and such other non-profit universities as may have executed the Instrument of Adherence attached hereto as Attachment A, to be known collectively hereinafter as “INSTITUTIONS.”

**WHEREAS**, the parties to this Agreement have each received funding to support the National Science Foundation Industry/Engineering Research Center for Revolutionizing Metallic Biomaterials (hereinafter referred to as “CENTER”) in its efforts to create technologies leading to engineered systems that will interface with the human body to prolong and improve quality of life; the development of a vibrant, diverse workforce well-prepared for multidisciplinary and global challenges and opportunities; and to provide INSTITUTIONS with strengthened educational and research capabilities in these fields.

**WHEREAS**, the activities of CENTER are funded by: (i) the National Science Foundation (hereinafter referred to as “NSF”); (ii) Industrial Members (hereinafter referred to as “MEMBERS”); (iii) direct budgetary support from the INSTITUTIONS; and (iv) other funds that may be received from time to time.

**WHEREAS**, INSTITUTIONS are desirous of formalizing certain agreements between them with respect to the subject matter contained herein.

**NOW THEREFORE**, for and in consideration of the mutual promises and covenants herein contained and intending to be legally bound, INSTITUTIONS hereto agree as follows:

1. CENTER Funding.

- 1.1 During the initial five (5) year funding period of the CENTER, NCAT will receive funds directly from NSF, and will subcontract with UPITT and UC. Each INSTITUTION will be responsible for recruiting its own MEMBERS, and will retain membership fees collected from its MEMBERS.
- 1.2 Subject to receipt of appropriate internal approvals and to the availability of necessary funds, participating INSTITUTIONS shall jointly pay for major promotional CENTER materials, such as brochures. Each INSTITUTION’S obligation hereunder shall only apply to promotional materials that have been produced with the advance written approval of all participating INSTITUTIONS.

1.3 Within each INSTITUTION, a financial management system is set up at the College/School of Engineering level for the operation of the CENTER. The Director and each Thrust Leader must provide annual budgets based on expected income from all sources to the respective INSTITUTION. These budgets shall be made available to the Leadership Director, the Thrust Leader, and the responsible university officials by June 1 of each year.

2. CENTER Governance.

2.1 The Lead Institution for the CENTER shall be NCAT. UPITT and UC shall be Partner Institutions.

2.2 The overall project will be led by a Leadership Team, comprised of a Director, Deputy Director, Education Program Director, Pre-College Education Program Director, Industrial Liaison Officer and Administrative Director.

2.3 Each INSTITUTION will focus on a Thrust area and will have Site Thrust Leaders and form Thrust Groups with faculty and non-faculty investigators.

2.4 The CENTER will have various Advisory Panels, including a common Scientific Advisory Board. All MEMBERS with a Gold level membership shall have a seat on the Industrial Advisory Board (hereinafter referred to as "IAB"). Each MEMBER at the level of Silver Membership will be entitled to vote for up to two Silver members of the IAB (see Attachment C).

2.5 Each INSTITUTION shall use a common format for its membership agreement, which shall be in the form of the Center for Revolutionizing Metallic Biomaterials Membership Agreement as set forth in Attachment B.

2.6 During the first five (5) year funding period, and in accordance with the proposal submitted to NSF and the subsequent awards, the Leadership Director will be from NCAT. Each INSTITUTION shall select a Site Thrust Leader in accordance with the policies and procedures of each INSTITUTION.

3. CENTER Research.

3.1 Each INSTITUTION shall establish a research Thrust Area as described below:

- (i) NCAT - Biodegradable Metals
- (ii) UPITT - Biofunctional Surface Modifications
- (iii) UC - Sensing and Actuation
- (iv) UPITT - Controlled Release

Research conducted by the CENTER will be coordinated pursuant to separate written documents between the INSTITUTIONS. It is contemplated that such documents

will include the provision of certain CENTER funds to the INSTITUTIONS for their work.

- 3.2 CENTER research will focus on these Thrust Areas and the research results from each Thrust Area will enable three (3) engineered systems: (i) Craniofacial and Orthopedic Applications; (ii) Cardiovascular Devices; and (iii) Responsive Biosensors.
- 3.3 CENTER will initiate and support the first baccalaureate degree program in bioengineering for a HBCU at NCAT.

#### 4. Ownership and Administration of Intellectual Property.

- 4.1 Subject to Section 2.5, in order to support the cooperative nature of the CENTER and to facilitate the licensing of Property (Intellectual Property developed through the use of CENTER research funding) to the parties as contemplated under this Agreement, MEMBERS will assign: (a) all rights and title to any and all CENTER Intellectual Property developed solely by MEMBERS pursuant to this Agreement (including but not limited to Intellectual Property developed under a collaborative project) to NCAT; and (b) all rights and title to any and all CENTER Intellectual Property developed jointly by MEMBER and one or more INSTITUTIONS pursuant to this Agreement (including but not limited to Intellectual Property developed under a collaborative project) to such INSTITUTIONS.
- 4.2 Any CENTER Intellectual Property developed solely by an INSTITUTION under this Agreement shall be owned by such INSTITUTION.
- 4.3 Any CENTER Intellectual Property developed jointly by two or more INSTITUTIONS shall be jointly owned by such INSTITUTIONS. The applicable INSTITUTIONS will discuss and agree upon a separate written Inter-Institutional Agreement between such universities ("IIA") to determine which party is responsible for handling any intellectual property protections and licensing, as well as distributing percentages of royalties received to university personnel as required by the applicable universities' intellectual property policies. Such IIA shall include, but not be limited to, terms that address management of patent application, filing, and payment of associated patent fees and other expenses, distribution of royalties and fees, and any details of a royalty split that could include a portion of the royalties going to the CENTER.
- 4.4 Each INSTITUTION that holds title to any CENTER Intellectual Property pursuant to this Agreement, (including but not limited to any and all CENTER Intellectual Property to which it obtains title pursuant to Section 4.1): (a) agrees to grant to MEMBER any rights to such Intellectual Property to which MEMBER is entitled under this Agreement by virtue of MEMBER'S level of participation; and (b) hereby grants to the other INSTITUTIONS a non-exclusive, royalty-free license to use and modify such CENTER Intellectual Property for research, educational and/or academic

purposes. For purposes of clarification, such licenses include any and all Intellectual Property protections (such as patents, copyright registrations, etc.) obtained on such CENTER Intellectual Property.

- 4.5 Each party shall retain the entire right, title and interest in and to its respective Background Intellectual Property.
- 4.6 INSTITUTIONS will consult with one another on the marketing strategies and the pursuit of intellectual property protections for CENTER Intellectual Property and will coordinate with other INSTITUTIONS holding title to such CENTER Intellectual Property regarding the intellectual property protections to be filed on such CENTER Intellectual Property. If an INSTITUTION determines it will not pursue intellectual property protection on such CENTER Intellectual Property to which it holds sole or joint title, such INSTITUTION agrees to notify NCAT in a timely manner. NCAT may, in its discretion, offer to provide a certain amount of CENTER funds to be used toward obtaining intellectual property protections on such CENTER Intellectual Property.
- 4.7 To the extent MEMBER'S level of participation provides it with a non-exclusive license to CENTER Intellectual Property, MEMBER agrees that any and all derivatives created by it, based on such CENTER Intellectual Property, shall be made available to all INSTITUTIONS on a perpetual, non-exclusive, royalty-free basis for research, educational and/or academic purposes.
- 4.8 Each party agrees that it will execute any document reasonably requested by another party in order to confirm the rights and/or assignments provided under this Agreement.
- 4.9 Nothing in this Agreement shall be construed to confer any rights upon a MEMBER by implication, estoppel, or otherwise as to any technology or Intellectual Property of the INSTITUTIONS or any other entity other than the rights specifically granted pursuant to this Agreement, regardless of whether such technology or Intellectual Property shall be dominant or subordinate to any rights granted hereunder, including but not limited to INSTITUTIONS' Background Intellectual Property.
- 4.10 Any and all Intellectual Property created by any party under this Agreement must be disclosed to such party's applicable technology transfer office as well as NCAT Technology Transfer Office (NCAT-TTO) within a reasonable time period from the date of invention or first reduction to practice. Such disclosure shall be made through paper or electronic means, and include all required signatures, assignments, etc. Notice of disclosures received by NCAT-TTO shall be provided to MEMBERS via paper or electronic means, and shall occur within thirty (30) days of receipt of such invention disclosure by NCAT-TTO.

Notice of disclosures received by NCAT-TTO through the mechanism provided in the prior sentence shall be provided to MEMBERS, UC, UPITT and all associated

universities (“Disclosure Notice”). Such notices will be provided via either: (a) United States mail (postage prepaid, return receipt requested) with a cover letter and separate sealed envelope containing the disclosure, or (b) via electronic means (either through email to the address listed on the signature page and/or via password protected web site). To the extent any party receiving such a notice does not wish to open and/or access such disclosure, it agrees that, within ten (10) days of receipt, it will return the sealed disclosure envelope (for written disclosures) or confirm in writing that it will not be opening and/or accessing the disclosure (for electronic disclosures) using the contact information listed above for NCAT-TTO. Refusal by a MEMBER to accept and/or open disclosures may lead to a waiver of option and/or other license benefits to which MEMBERS may otherwise be entitled under this Agreement.

5. License to Use Intellectual Property for Internal Use. With respect to CENTER Intellectual Property belonging solely to UPITT, NCAT, or UC, each party agrees to and does hereby grant to the other, subject to the terms of this Agreement, a nonexclusive, non-transferable, irrevocable, royalty-free license to use the CENTER Intellectual Property for internal, educational and noncommercial research purposes only (without the right to sublicense). This license shall include the right to utilize any information and materials published by CENTER. INSTITUTIONS acknowledge that a separate license agreement may be required by the licensor in order to convey the rights granted by this paragraph.
6. Publication of Jointly Owned Intellectual Property. Each INSTITUTION shall have the right to publish research results on any CENTER research. If such publication involves collaborative research, the INSTITUTION desiring to publish such research results shall submit a draft of any such proposed publication to the other collaborating INSTITUTION at least twenty (20) days prior to the submission of the research results for publication. Any INSTITUTION shall have the right to delay any publication involving collaborative research for a period of not more than sixty (60) days for the purposes of obtaining patent protection by giving the other INSTITUTION notice before the end of the twenty (20) day notice period provided hereinabove. For the purposes of this Agreement, cataloging and placing reports of research results in the library of any INSTITUTION shall be deemed to be a “publication.”
7. Miscellaneous Provisions.
  - 7.1 This Agreement may not be amended or modified except by the execution of a written instrument executed by all of the parties hereto.
  - 7.2 In the event that any of the terms, provisions, or covenants contained in this Agreement are held to be partially or wholly invalid or unenforceable for any reason whatsoever, such holding shall not affect, alter, modify, or impair in any manner whatsoever any of the other terms, provisions, or covenants not held to be partially or wholly invalid or unenforceable.
  - 7.3 If this Agreement and the CENTER Membership Agreement conflict in any way, this Agreement shall have precedence.

8. Term. The term of this Agreement shall begin on the Effective Date and shall continue for the duration of the CENTER contract with NSF.
9. Counterparts. This Agreement, including Attachment A and Attachment B hereto, may be executed in any number of counterparts and by any party on separate counterpart, each of which shall be deemed an original but all of which together shall constitute one and the same instrument.

[THE REMAINDER OF THIS PAGE WAS INTENTIONALLY LEFT BLANK]

***IN WITNESS WHEREOF***, INSTITUTIONS hereto have caused this Agreement to be duly executed by their duly authorized officers as of the day and year set forth next to each signature.

NORTH CAROLINA AGRICULTURAL &  
TECHNICAL STATE UNIVERSITY

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

***IN WITNESS WHEREOF***, INSTITUTIONS hereto have caused this Agreement to be duly executed by their duly authorized officers as of the day and year set forth next to each signature.

UNIVERSITY OF PITTSBURGH – OF THE  
COMMONWEALTH SYSTEM OF HIGHER  
EDUCATION

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_



***IN WITNESS WHEREOF***, INSTITUTIONS hereto have caused this Agreement to be duly executed by their duly authorized officers as of the day and year set forth next to each signature.

UNIVERSITY OF CINCINNATI

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**ATTACHMENT A**

**Instrument of Adherence: [insert University Name]**

Reference is made to the Memorandum of Understanding by and among the North Carolina Agricultural & Technical State University, the University of Pittsburgh – Of the Commonwealth System of Higher Education, and the University of Cincinnati dated as of May \_\_\_\_, 2009, and such other parties as have executed an Instrument of Adherence thereto (the “Agreement”). Capitalized terms used herein and not otherwise defined have the respective meanings assigned in the Agreement.

The undersigned hereby agrees to the terms and conditions of the Agreement and to the designation of the undersigned as an INSTITUTION thereunder as of the Adherence Effective Date specified below.

Annex I attached hereto specifies the undersigned’s contact information for administrative matters regarding the Agreement.

This Instrument of Adherence may be executed in any number of counterparts and by any party on separate counterpart, each of which shall be deemed an original but all of which together shall constitute one and the same instrument.

Adherence Effective Date: \_\_\_\_\_

INSTITUTION:

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

**ACCEPTED AND APPROVED BY:**

NORTH CAROLINA AGRICULTURAL &  
TECHNICAL STATE UNIVERSITY

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

**ACCEPTED AND APPROVED BY:**

UNIVERSITY OF PITTSBURGH – OF THE  
COMMONWEALTH SYSTEM OF HIGHER  
EDUCATION

By: \_\_\_\_\_

Name: Allen A. DiPalma

Title: Director, Office of Research

**ACCEPTED AND APPROVED BY:**

UNIVERSITY OF CINCINNATI

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

**Attachment A.1**  
**Contact Information**

Name of INSTITUTION: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Contact Person: \_\_\_\_\_

Telephone No.: \_\_\_\_\_

Facsimile No.: \_\_\_\_\_

E-mail: \_\_\_\_\_

## **ATTACHMENT B**

### **Membership Agreement**

National Science Foundation Industry/Engineering Research Center for  
Revolutionizing Metallic Biomaterials

This Membership Agreement is effective as of the \_\_\_\_ day of \_\_\_\_\_, 2009 by and between \_\_\_\_\_ (hereinafter called "UNIVERSITY" and \_\_\_\_\_ (hereinafter called "COMPANY").

WHEREAS, the North Carolina Agricultural & Technical State University ("NCAT"), the University of Pittsburgh – Of the Commonwealth System of Higher Education ("UPITT") and the University of Cincinnati ("UC") (hereinafter collectively called the "Collaborating Universities") have entered into a Memorandum of Understanding ("MOU"), a copy of which is attached hereto, in a cooperative effort to establish and support the CENTER, and the CENTER intends to maintain a mechanism whereby the CENTER environment can be used to perform research for the CENTER at NCAT, UPITT, or UC and future universities in the areas of Biodegradable Metals, Biofunctional Surface Modifications, Sensing and Actuation, and Controlled Release; and

WHEREAS, UNIVERSITY represents that it has the power and authority granted in the terms and conditions set forth in the Agreement between the Collaborating Universities to undertake, along with the other Collaborating Universities, the commitments made to COMPANY herein.

NOW, THEREFORE, intending to be legally bound, the parties hereto agree as follows:

- A. UNIVERSITY asserts that the CENTER will be operated by certain faculty and staff at the Collaborating Universities, and such faculty, staff and students COLLABORATING UNIVERSITIES may perform research projects at the CENTER. For the first five (5) years from the Effective Date of the MOU, the CENTER will be supported jointly by industrial firms, federal laboratories, and the National Science Foundation (NSF). It is possible that the CENTER may receive support from NSF for an additional five (5) years.
- B. Any company, federal research and development organization, or any government-owned contractor operated laboratory may become a sponsor of the CENTER, consistent with applicable state and federal laws and statutes. Federal research and development organizations and government-owned contractor operated laboratories may become sponsors of the CENTER on terms and conditions other than those in this Agreement

upon approval by the Collaborating Universities and two-thirds of the Industrial Advisory Board (“IAB”).

- C. COMPANY agrees to contribute as a (Basic, Silver or Gold; choose one) member in the amount of \_\_\_\_\_ in support of the CENTER, and thereby become a sponsor. Payment of these membership fees shall be made to Engineering Research Center for Revolutionizing Biomaterials, in a lump sum effective \_\_\_\_ or in four equal quarterly installments payable on January 1, April 1, July 1, and October 1, of each year of sponsorship. Checks from COMPANY should be mailed to: Engineering Research Center for Revolutionizing Biomaterials, North Carolina A & T State University, 1601 East Market Street, Greensboro, NC 27411. Because research of the type to be done by CENTER takes time and research results may not be obvious immediately, COMPANY should join CENTER with the intention of remaining a fee-paying member for at least three (3) years. However, COMPANY may terminate this Agreement at any time by giving UNIVERSITY ninety (90) days’ written notice prior to the termination date.
- D. UNIVERSITY asserts that the results of CENTER research will be made available to COMPANY for research purposes through one of the Collaborating Universities.
- E. UNIVERSITY asserts that organization and operation of the CENTER will be specified by CENTER bylaws that are under development. The bylaws, when adopted by the IAB, will become part of this Agreement.
- F. The IAB will be composed of one representative from each Gold member and two at-large Silver members. Each Gold member COMPANY shall have the right to appoint a representative to the IAB. The IAB shall make recommendations on: (a) the research projects to be carried out by the CENTER; (b) the apportionment of resources to such research projects; and (c) changes in the bylaws. The operation of the IAB will be as specified in the bylaws.
- G. COMPANY understands that the Collaborating Universities reserve the right to publish in scientific or engineering journals the results of any research performed by CENTER.
- H. During the term of this Agreement, UNIVERSITY asserts that the COMPANY shall have a non-exclusive, royalty-free license to use the CENTER tools for internal use when they are available. UNIVERSITY shall ensure that the Collaborating Universities grant such rights to COMPANY when necessary.
- I. All intellectual property created in the course of research conducted by the CENTER shall belong to the creating party or parties. Collaborating Universities, pursuant to Chapter 18 of Title 35 of the United States Code, commonly called the Bayh-Dole Act, will have ownership of all patents they developed from this work, subject to “march-in”



rights as set forth in this Act. Copyright registration may be obtained for copyrightable materials developed by CENTER. COMPANY shall be entitled to a nonexclusive, royalty-free license to all patents or copyrights developed by CENTER during its period of membership, provided COMPANY pays its pro rata share of reasonable costs of protecting the intellectual property, including patent filing, prosecution and maintenance. Companies that were members at the time of disclosure of the intellectual property and wish to exercise rights to a royalty-free, non-exclusive license agreement for any patented or copyrighted intellectual property shall notify CENTER in writing within sixty (60) days of receiving notice that the intellectual property is available for license, and the companies shall pay all allocated costs of obtaining patent or copyright protection. COMPANY shall have the right to sublicense to its subsidiaries and affiliates. If only one company seeks a license with respect to a particular tool, that company may negotiate with CENTER for an exclusive, royalty-bearing license to market the tool, subject to the license grant to COMPANY set forth above in Paragraph H. COMPANY shall have the right to enhance and to re-market enhanced or unenhanced software with royalties due to CENTER to be negotiated. COMPANY'S license rights shall survive termination of this Agreement or termination of COMPANY's membership.

- J. No party is assuming any liability for the actions or omissions of any other party. To the extent allowed by law, each party will be responsible for its own and assume its own liability, for injury, damage or cost based upon injury or death to persons, or loss of, damage to, or loss of use of property that arises out of the performance of this Agreement to the extent that such claims, liability, damage, cost or expense results from the negligence of such party's agents or employees.

UNIVERSITY

COMPANY

By: \_\_\_\_\_

Name:

Title:

Date:

By: \_\_\_\_\_

Name:

Title:

Date:

### ATTACHMENT C

Industrial memberships are a critical aspect of the CENTER's success. Members receive a wide variety of benefits at all three levels of commitment. Companies interested in the three testbed areas or in state of the art biomaterials and processes will benefit from membership as described in the attached table.

For purposes of this CENTER sponsorship, Start-up Companies are those which are incorporated for less than five (5) years, and have less than ten (10) employees, or have less than One Million Dollars (\$1,000,000) in gross revenue. Any company which does not meet the requirements for a Start-up Company shall be considered a Company, unless the CENTER agrees that an applicant company should be considered a Start-up Company.

Level	Company	Benefits
Basic	\$ 5,000.00	<ul style="list-style-type: none"><li>- Access to publications</li><li>- Access to potential hires</li><li>- Invitation to attend annual meeting</li></ul>
Silver	\$25,000.00	<ul style="list-style-type: none"><li>- Basic plus</li><li>- Sponsorship of project class</li><li>- Nonexclusive access to IP in 1 thrust/testbed during membership</li><li>- Vote for Advisory Board Representative (up to 2 for Silver members)</li></ul>
Gold	\$50,000.00	<ul style="list-style-type: none"><li>- Basic plus</li><li>- Sponsorship of major project class</li><li>- Specification of project</li><li>- Nonexclusive access to all IP in center during membership</li><li>- Advisory board membership</li></ul>

If a Start-Up Company allows the CENTER to do research with them, then the price is reduced up to \$5,000.00 (so startups would get free membership)