

00000781

**Memorandum of Understanding  
between  
New Jersey Institute of Technology, NJ, USA,  
and  
Geophysical Institute of Peru, Lima, Peru,  
and  
Clemson University, SC, USA**

**Article 1: Purpose**

- 1.1 This Memorandum of Understanding ("MOU"), effective as of the date of the last signatory hereto ("Effective Date"), is by and between **New Jersey Institute of Technology ("NJIT")**, **The Geophysical Institute of Peru ("IGP")**, and **Clemson University ("CU")**. Collectively, NJIT, IGP and CU shall be referred to as the "Parties".
- 1.2 This MOU memorializes the intent of the Parties to begin a cooperative research effort (the "Project") to: (a) bolster scientific investigation of the earth's middle and upper atmosphere in a collaborative manner; (b) acknowledge joint responsibilities of the Parties as specified herein; (c) provide a framework for further potential scientific developments between the Parties; and (d) acknowledge the nonprofit nature of this research collaboration and the equipment investiture of the Parties as detailed herein.
- 1.3 The Parties' cooperative research effort will initially include NJIT's coordination of the following equipment (collectively called the "FPI Instrumentation") owned by CU and currently deployed in Peru: (a) Second-Generation, Optimized, Fabry-Perot Doppler Imager ("SOFDI") trailer, located in Huancaayo; (b) available supporting SOFDI equipment and instruments (henceforth referred to as the "SOFDI instrumentation"); and (c) supporting Fabry-Perot installations operated by IGP and currently located in Jicamarca, Nazca, and Arequipa. The Parties intend to use the FPI Instrumentation to take observations of thermospheric winds as obtained by spectral measurements of the OI 630-nm emission for a period of at least five (5) years. This data set will be used to study the nature of the background thermospheric wind in relation to the onset and development of equatorial spread-F.
- 1.4 The Parties designate the following representatives as their Principal Investigator(s) responsible for implementation of the Project: (a) Andrew Gerrard (NJIT); Marco Milla (IGP); and John Meriwether (CU).

**Article 2: Responsibilities of NJIT**

- 2.1 NJIT will use best efforts and available resources to perform the following tasks:
- 2.2 To operate the SOFDI Instrumentation for an initial period of five (5) years (using funds already in place via grants at NJIT) during clear-sky conditions;
- 2.3 To provide for FPI Instrumentation operation costs of \$35,000 per annual year. These costs include, but are not limited to:
- Electrical power and equipment grounding/electrical work,
  - Internet/web costs,



- Lightning protection of the FPI installations,
  - Travel expenses associated with travel to the FPI facilities within Peru,
  - Yearly system maintenance, which includes cleaning of the FPI systems, optics, changing of cooling water, and FPI facility repair,
  - Troubleshooting and service of the FPI systems, in consultation with CU and NJIT.
- 2.4 To discuss with the Parties the extension of the Project beginning after the fourth (4<sup>th</sup>) year;
- 2.5 NJIT will train a qualified IGP engineer or technician, at NJIT [for 1-2 weeks] commencing in or about Fall 2016;
- 2.6 NJIT will pay for travel and lodging expenses for IGP personnel traveling on international (i.e., outside of Peru) SOFDI science projects, to a maximum of \$5,000 per year. Such reimbursement shall be in accordance with NJIT standard reimbursement policies, billed at IGP's actual cost, supported by receipts, and pre-approved by NJIT. IGP may invoice NJIT for such out-of-pocket travel expenses on a monthly basis as incurred; and
- 2.7 NJIT will pay for equipment costs and upgrades, to a maximum of \$10,000 per year. These costs include, but are not limited to,
- New interference filters for the FPI instrumentation,
  - CCD or Laser shipping and repair, as needed,
  - New optical domes

### Article 3: Responsibilities of IGP

- 3.1 IGP will use best efforts and available resources to perform the following tasks:
- 3.2 To conduct the operation of the FPI Instrumentation, including the delivery and supply of electrical power, internet, system maintenance, and troubleshooting (though not at the detriment to other IGP projects), as listed in, for example, Sections 2.3 and 2.7; and
- 3.3 To work with the Parties on FPI data processing and inversion. IGP will also develop and maintain a database system to keep backup of the data acquired with FPI instrumentation.

### Article 4: Responsibilities of CU

- 4.1 CU will use best efforts and available resources to perform the following tasks:
- 4.2 While maintaining ownership of and responsibility for the FPI Instrumentation, to authorize and permit NJIT and IGP (as memorialized by this MOU) to transport, operate, maintain and disseminate data obtained from the same;
- 4.3 To bear the entire risk of all loss, injury, theft, destruction and/or damage to and/or caused by the FPI Instrumentation during the term of this MOU (or any extension hereof) and to maintain adequate property and liability insurance covering all potential claims arising out of the same;



- 4.4 To arrange at CU's own cost the return of the FPI Instrumentation to CU at the termination of this MOU and/or the otherwise disposition or transfer of ownership of the same at such time; and
- 4.5 To indemnify and hold harmless NJIT against all claims and liabilities arising out of NJIT's assistance in the transporting, maintenance and operation of the SOFDI Instrumentation and to name NJIT as an additional insured on CU'S insurance policies covering the same.

#### Article 5: Rights And Sharing Of Data

- 5.1 During the term of this MOU, the Parties shall jointly share and own on a non-exclusive basis all data derived from use of the same.
- 5.2 Prior to any public release of Project data, each Party agrees to furnish the other Parties with copies of the same at least sixty (60) days in advance so as to permit the other Parties to: (a) make written comments; (b) object in writing because there is patentable subject matter needing protection; or (c) because of an inadvertent disclosure of solely owned confidential information of a non-publishing Party. Each Party shall provide such commentary within thirty (30) days of receiving a proposed public release or forever waive its rights in such regard.
- 5.3 In the event that a Party makes a timely objection to a proposed public release due to patentable subject matter contained within the same, the publishing Party shall refrain from making such public release for thirty (30) days from the date of receipt of such objection in order for patent applications to be filed.
- 5.4 In the event that a timely objection is made due to confidential and/or proprietary information belonging to a non-publishing Party being contained within the public release, the publishing Party agrees to remove such information. All Parties will cooperate to insure that nothing will be disclosed or done that will interfere with or jeopardize the patent rights of the other Parties.
- 5.5 Notwithstanding the above, all Parties agree to jointly collaborate on issues of scientific interest arising out of the Project in a mutually constructive manner, including joint-authorships on scientific papers and collaborative development of optical Aeronomy instrumentation in Peru.

#### Article 6: Other Issues

- 6.1 The Parties recognize that this MOU may be superceded by a more formal agreement between the Parties along with any amendments and/or modifications thereto setting forth contractual terms governing the conduct of the Parties with respect to performing the specific requirements of the Project.
- 6.2 The Parties acknowledge that the issues of confidentiality shall be set out in a separately signed subsequent Proprietary Information and/or Non-Disclosure Agreement to the extent required (the terms of which may be made to survive termination of this MOU).
- 6.3 The Parties recognize that the pre-existing proprietary information and materials of each Party shall remain the property of that Party throughout and subsequent to this MOU.
- 6.4 The term of this MOU shall be five (5) years from the Effective Date unless terminated by any Party upon sixty (60) days prior written notice to the other Parties. Any provision of this MOU



00005384

that by its nature is intended to survive termination and/or expiration shall survive such termination and/or expiration.

- 6.5 Any issue between the Parties related to this MOU shall be resolved according to the laws of the USA. Notwithstanding, in the event of a dispute the Parties shall firstly attempt to settle it by arbitration and conciliation within thirty (30) days before any other action is taken.
- 6.6 Each Party shall retain all proprietary rights, title and interest in and to all of its preexisting intellectual property and/or copyrightable materials, including all improvements, modifications or adaptations to the same.
- 6.7 Ownership of any intellectual property or copyrightable materials created as a result the Parties' Project technological collaborations shall vest in the Party whose personnel conceived the subject matter and/or first actually reduced the subject matter to practice, and such Party may perfect legal protection therein in its own name and at its own expense. Jointly made intellectual property or copyrightable material shall be jointly owned by the Parties.
- 6.8 Each Party agrees to comply and to reasonably assist the other in complying with applicable U.S. and/or Peruvian laws, rules and regulations as they apply to this MOU or the Project, including those applicable laws and regulations of the U.S. Department of Commerce relating to the export or re-export of technical data or commodities.
- 6.9 This MOU does not create a joint venture, partnership, employment relationship, or other agency relationship between the Parties. No Party is authorized or empowered to act as agent for the other Parties for any purpose and neither shall be bound by the act of the other.
- 6.10 No Party will be deemed in default of this MOU to the extent that performance of its obligations or attempts to cure any breach are delayed or prevented by reason of any act of God, fire, natural disaster, accident, act of government, or an act that is beyond the reasonable control of such Party.




The undersigned hereby consent and agree to the contents of this MOU:

### NEW JERSEY INSTITUTE OF TECHNOLOGY

(print) Atam P. Dhawan, Ph.D.

(date) 12-7-16

(signature) 

(title) Vice Provost for Research

### GEOPHYSICAL INSTITUTE OF PERU

(print) Hernando J. TAVERA

(date) 12-20-16

(signature) 

(title) Dr. HERNANDO TAVERA H.  
Presidente Ejecutivo (e)



### CLEMSON UNIVERSITY

(print) \_\_\_\_\_

(date) \_\_\_\_\_

(signature) \_\_\_\_\_

(title) \_\_\_\_\_



Anexo 1

0000332

FICHA DE DATOS A SER PRESENTADA POR EL PROPONENTE AL INSTITUTO  
GEOFISICO DEL PERÚ PARA LA SUSCRIPCION DE CONVENIO

1. Proponente:

- Presidente Ejecutivo del IGP. ☐
- Director Técnico del IGP. ☐
- Entidad estatal o privada, persona jurídica de derecho público o privado, institución privada u organismo internacional. ☒
- Director de órganos de línea o de apoyo y asesoría del IGP o de alguno de los responsables de programas de Investigación. ☐

Nombre:

Andrew Gerrard, profesor en New Jersey Institute of Technology (NJIT)

2. Denominación del Convenio:

- Convenio Marco. ☐
- Convenio Específico. ☒

Memorandum of Understanding between NJIT, IGP, and CU

3. Sobre la Contraparte:

- Denominación:

Center for Solar-Terrestrial Research, New Jersey Institute of Technology

- Representante Legal:

Atam P. Dhawan, Vice Provost for Research

- Domicilio:

323 Martin Luther King Jr. Boulevard  
101 Tiernan Hall, Newark, NJ, USA

➤ Persona de contacto:

- Nombre:

Andrew Gerrard

- Cargo:

Profesor

- Correo Electrónico:

gerrard@njit.edu

4. Antecedentes (si los hubiera):

Acuerdo de colaboración científica entre NJIT, CU, IGP del 2009-2016

5. Objetivo y finalidad del Convenio *(Tener en cuenta los objetivos y metas institucionales del IGP, así como sus competencias y atribuciones previstas en su Ley de creación, en su Reglamento de Organización y Funciones u en otra norma que le otorgue una facultad o encargo específico).*

El objetivo principal del presente convenio es continuar con la cooperación científica entre las 3 instituciones firmantes. Además, brindar el soporte necesario para la operación de la red de interferómetros Fabry Perot en el Perú, en particular a SOFDI en Huancayo y a los FPI en Jicamarca, Nazca y Arequipa.

**DIRECTIVA PARA LA CELEBRACION DE CONVENIOS INTERINSTITUCIONALES CON EL  
INSTITUTO GEOFISICO DEL PERU**

0000031

- 6. Compromisos de las partes** (En caso de Convenios Marco, se incluirán únicamente compromisos generales. En el caso de Convenios Específicos se deberán establecer obligaciones específicas para cada una de las partes).

• Compromisos de NJIT

Operar SOFDI por un periodo de 5 años bajo condiciones de cielo claro.
Proporcionar \$35K anuales al IGP para cubrir los gastos operativos de la red FPI en el Peru.
Entrenar a técnicos o ingenieros del IGP en la operación de los FPIs en NJIT.
Cubrir gastos de viajes internacionales a personal del IGP por \$5K anuales por motivos relacionados a SOFDI.
Pago de mejoras y/o reemplazo de equipos por un máximo de \$10K anuales.

• Compromisos de IGP

Operar y mantener la instrumentación de la red FPI en el Peru.
Desarrollar y mantener una base de datos de las mediciones realizadas con los FPI.

• Compromisos de CU

Autorizar el transporte, operación, mantenimiento y uso de los instrumentos y datos generados por la red FPI.
Asumir el pago de retorno de los equipos a CU al termino del acuerdo o el coordinar la transferencia de los bienes al IGP.

**7. Financiamiento:**

- No compromete obligación dineraria del IGP. ☐
- No compromete uso de bienes del IGP. ☒ *Si, bienes inmuebles.*
- Compromete obligación dineraria y/o uso de bienes del IGP. ☐

Precisar costos/uso de bienes que serían asumidos por el IGP:

El IGP va a recibir \$35K anuales para cubrir gastos de operación y mantenimiento de la red de Interferómetros Fabry Perot en el Perú.

**8. Coordinador(es) Institucional(es) propuestos (cargos y/o nombres):**

- Por el IGP:

Marco Milla


- Por la(s) contraparte(s) (si se hubiera acordado)

Andrew Gerrard

**9. Plazo de vigencia:**

Indeterminado ☐ Renovación anual automática

Determinado ☒ Plazo: 5 años (sin renovación automática, extensiones se pueden realizar mediante una adenda)


Firma:
Nombre: Marco Milla
DNI: 09860554
Cargo: Investigador Científico Principal

*Nota:*

*El responsable IGP del convenio deberá presentar un presupuesto de distribución de gastos.*

*Armelina*  
*Director Científico.*