

**INDUSTRY SPONSORED RESEARCH AGREEMENT
FIXED PRICE**

ASU Reference No. FP00026198
Sponsor Reference No.

This Sponsored Research Agreement (“Agreement”) is made and entered into by and between:

The Arizona Board of Regents for and on behalf of Arizona State University (“ASU”), an institution of higher learning established by the laws of the State of Arizona, having a place of business at 660 S. Mill Ave., Tempe, AZ 85281, and Halberd Corporation, a publicly traded company, having a place of business at P.O. Box 25, Jackson Center, PA 16133 (“Sponsor”).

Sponsor desires to fund research to be performed by ASU, as described in the scope of work attached hereto and incorporated herein as Exhibit A (the “Project”), and ASU desires to conduct such research, the Project contemplated by this Agreement is of mutual interest to Sponsor and ASU and furthers the educational, scholarship and research objectives of ASU as a nonprofit, tax-exempt, educational institution, and may benefit both Sponsor and ASU through the creation or discovery of new inventions.

Therefore, in reliance on the commitments and obligations set forth herein, and with the intention of being legally bound hereby, the parties agree as follows:

Effective Date. This Agreement will be effective as of the date of the last signature below.

Scope of Work. ASU will use all reasonable efforts to perform the services and deliver any reports or other items specified in Exhibit A.

Key Personnel. ASU will provide Dr. Qiang Chen, as Principal Investigator (“PI”) for work contemplated and performed under this Agreement.

Period of Performance. This Agreement will begin on 1 September 2020 and will terminate on 30 November 2022. This Agreement may be modified or extended at any time by mutual written consent of both parties.

Compensation. Compensation will be on a fixed-price basis. Sponsor will pay ASU in an amount not to exceed \$1,371,782 for ASU's services hereunder. Sponsor will remit not less than \$21,782 upon execution by both parties of this Agreement, which ASU may hold as a reserve. The balance of the contract price due under this Agreement will be paid according to the following schedule:

Payment Schedule

<i>Date Due:</i>	<i>Description of Deliverable:</i>	<i>Amount Due:</i>
Upon Execution of Agreement	Fully Executed Agreement	\$21,782
30th of each month	Monthly Payment (27 in Total)	\$50,000

Sponsor acknowledges and agrees that ASU is not obligated to commence work until ASU has received the initial payment in the amount of \$21,782. Invoices are due and payable within 30 days.

ASU reserves the right to subject invoices not paid within thirty (30) days of the invoice date to a 1% per month late fee on the unpaid balance for any amounts not in dispute. ASU reserves the right to discontinue the services if Sponsor fails to make payments within 30 days of receipt of invoice.

In the event of non payment, ASU may terminate all further work on the Project and seek full payment from the Sponsor for all work performed and all expenses incurred including allocable costs, pursuant to the termination clause of this Agreement including the collection of payment.

If it becomes necessary for ASU to commence collection proceedings or retain an attorney to enforce any of the terms of this Agreement, the Sponsor will pay the attorneys' fees and the costs of collection incurred by ASU.

Questions regarding payment should be directed to cashmanagement@asu.edu.

Invoices will be mailed to the Sponsor Financial Contact at the following address:

Halberd Corporation
Attention: Heidi Carl
Address: P.O. Box 25
Phone: 814-786-8849
Email: HeidiCarl11@aol.com

Publications. Sponsor recognizes that under ASU policy the results of work performed under this Agreement must be publishable and agrees that ASU and its employees and students engaged in work under this Agreement will be free to present at symposia or professional meetings, and to publish in journals, theses or dissertations, or otherwise of their own choosing, methods and results of the work performed under this Agreement. Upon written request by Sponsor, copies of proposed manuscripts will be furnished to Sponsor for review prior to publication. In no event will ASU delay publication for more than thirty (30) days from date of submittal of manuscript for Sponsor review.

Consistent with its disclosure obligations as a public company, Sponsor will be permitted, to identify ASU as the research organization. Sponsor will allow ASU the opportunity for a one business day review of/revision to content of such press releases prior to distribution. Sponsor's press releases will not specifically identify by name any ASU investigators/researchers without the express written permission from ASU.

Notices. All notices under this Agreement given by either party to the other will be in writing and will be sent by U.S. Postal Service, first class, facsimile or e-mail. Addresses are as follows:

For ASU: Office for Research & Sponsored Projects Administration
Arizona State University
P.O. Box 876011

Tempe, Arizona 85287-6011
e-mail: asu.awards@asu.edu

With copy to:
Office of Industry Research & Collaborations
Arizona State University, SkySong – Suite 200
1475 N. Scottsdale Road
Scottsdale, Arizona 85257-3538
Fax: (480) 884-1984

For Sponsor: Halberd Corporation
William A. Hartman
P.O. Box 25, Jackson Center, PA 16133
814-786-8849
WillialAHartman@aol.com

With copy to:
[Insert Additional Sponsor Contact Information if Applicable]

Confidentiality. The parties may, at their discretion, and in connection with work contemplated or performed under this Agreement, disclose their respective proprietary or confidential information (“Confidential Information”) to each other. To be protected hereunder, Confidential Information must be marked confidential if disclosed in written or other tangible form. If Confidential Information is disclosed orally or visually, Confidential Information must be identified as confidential at the time of disclosure and reduced to writing, marked confidential, and transmitted to the receiving party within thirty (30) days of the initial disclosure.

Nothing in this Agreement will be construed to convey to either party any right, title or interest in any Confidential Information provided by the other party or any right, title or interest in any intellectual property of the parties, including but not limited to, processes, copyrights or patents. No license to the receiving party under any trademark, patent or copyright is either granted or implied by the conveying of Confidential Information to the receiving party.

The receiving party will not use, or disclose to any third party, Confidential Information of the disclosing party in any manner except for the purposes of this Agreement, and will require that its employees and agents (in the case of ASU, including employees of SkySong Innovations (“SI”)) who have access to such information maintain the same in strict confidence subject to the same restrictions. By way of example, but not limitation, the receiving party will not use Confidential Information of the disclosing party in connection with any patent application, for any commercial purpose, or for the benefit of any third party.

The parties will use reasonable efforts to prevent the disclosure to unauthorized third parties of any Confidential Information of the other party and will use such information only for the purposes of this Agreement. The receiving party’s obligations with respect to Confidential Information will survive for three (3) years after the termination of this Agreement; provided that the receiving party's obligations hereunder will not apply if the receiving party can show, with convincing written evidence, that the Confidential Information of the disclosing party received under this Agreement:

- a) was already known to the receiving party prior to the time of first disclosure; or
- b) at the time of disclosure is in the public domain, or after the date of the disclosure, lawfully becomes a part of the public domain other than through breach of this Agreement by the receiving party; or
- c) is received in good faith, without any obligation of confidentiality from a third party having a legal right to disclose the same; or
- d) is independently developed by the receiving party by individuals without access to such information; or
- e) is required to be disclosed by the receiving party pursuant to a legally enforceable order, law, subpoena, or other regulation (“Order”), provided, however, that the receiving party promptly notifies the disclosing party in advance of such disclosure and discloses only that Information necessary to comply with said Order.

ASU retains the right to refuse acceptance of any Confidential Information that is not required for the purposes of this Agreement.

Notwithstanding any other provision of this Agreement to the contrary, ASU is a public institution, and as such is subject to A.R.S. §§ 39-121 through 39-127 regarding public records. Any provision regarding confidentiality is limited to the extent necessary to comply with the provisions of Arizona law.

Export Control.

Sponsor agrees to give ASU express advance written notice prior to providing ASU any export controlled information, technology, software, equipment or know-how so ASU can take the appropriate measures. All export controlled information, technology, software, equipment or know-how furnished by the Sponsor shall be appropriately marked as “export controlled”. Sponsor agrees to furnish ASU only export controlled information that ASU needs to complete its work under this Agreement. ASU shall have the right to refuse acceptance of export controlled information.

Intellectual Property.

General. Subject to any obligations to the United States Government pursuant to the provisions of 35 U.S.C. sections 200-212 and applicable regulations of Chapter 37 of the Code of Federal Regulations:

- a) Intellectual Property resulting from the performance of the Project and created solely by legal inventors or authors who are ASU employees will be owned by ASU (“ASU IP”) and managed through SI.
- b) Intellectual Property resulting from the performance of the Project and created solely by legal inventors or authors who are Sponsor’s employees will be owned by Sponsor (“Sponsor IP”).

- c) Intellectual Property resulting from the performance of the Project and created jointly by legal inventors who are ASU's employees and Sponsor's employees will be owned jointly by ASU, managed by SI, and Sponsor ("Joint IP").
- d) ASU and Sponsor shall retain ownership of all intellectual property and materials owned by each of them prior to the Effective Date.
- d) "Intellectual Property" means any inventions, discoveries, concepts, methods, processes, data, copyrights, computer programs and related documentation, works of authorship fixed in a medium of expression, or mask works, whether or not patentable, copyrightable or subject to mask work rights or other similar statutory rights, as well as applications for any such rights.

Patent Applications. Patent applications will be filed by SI on behalf of ASU on ASU IP and Joint IP. Sponsor may, at any time, request SI to file a patent application on ASU IP or Joint IP.

- a) If such a request is made, Sponsor agrees to reimburse SI for all patent costs plus a 15% patent administration charge. In addition, Sponsor has the right to review all filings and office actions related to the patent applications, provided, however, that in an emergency when immediate action is needed to protect ASU IP or Joint IP, documents may be filed prior to review by the Sponsor and in such event, telephone or facsimile notice shall be given promptly by SI or SI's counsel of such action. SI will use reasonable efforts to avoid emergency situations in cases where they have control over the timing of steps involved in protecting ASU IP or Joint IP.

Option. In consideration of Sponsor's support of this Project and to the extent that SI has a right to grant such license, Sponsor shall be entitled to an option to negotiate a royalty-bearing license to ASU IP and/or ASU's interest in Joint IP, so long as Sponsor agrees to reimburse SI for all patent costs plus a 15% patent administration charge during the term of the option. Failure to reimburse SI's patent costs plus a 15% patent administration charge will result in termination of the option.

- a) Sponsor must exercise the option in writing to SI within thirty (30) days of SI's notification to Sponsor of any invention/discovery or within thirty (30) days of the termination of the Project, whichever occurs sooner.
- b) A license must be negotiated in good faith within three (3) months of Sponsor's written notification that it wishes to exercise the option. Said license shall contain reasonable terms that are standard in the industry for the ASU IP and/or ASU's interest in Joint IP, shall require diligent performance by Sponsor for the timely commercial development and marketing of such ASU IP and/or ASU's interest in Joint IP, and shall include Sponsor's obligation to reimburse SI's patent costs plus a 15% patent administration charge for all inventions subject to the license.

Disclosure. Sponsor shall retain all invention disclosures submitted by ASU or SI in confidence and use its best efforts to prevent disclosure to third parties. Sponsor shall be relieved of this obligation only when this information becomes publicly available through no fault of Sponsor.

Entire Agreement; Amendments; Counterparts. This Agreement constitutes the entire understanding between the parties relating to the subject matter hereof, and supersedes any other agreement or understanding between the parties. No amendment or modification to this Agreement will be valid or binding upon the parties unless made in writing and signed by each party. This Agreement may be executed in counterparts, each of which will be deemed an original. The parties agree that should any part of this Agreement be held to be invalid or void, the remainder of the Agreement will remain in full force and effect and will be binding upon the parties. Facsimile transmitted and imaged copy signatures will be fully binding and effective for all purposes.

Waivers. No waiver of this Agreement will be valid or binding unless written and signed by the parties. Waiver by either party of any breach or default of any clause of this Agreement by the other party will not operate as a waiver of any previous or future default or breach of the same or different clause of this Agreement.

Assignment. Neither party may assign any rights hereunder without the express, written, prior consent of both parties.

Governing Law. This Agreement will be governed by and construed in accordance with the laws of the State of Arizona. In addition, ASU's obligations hereunder are subject to the laws of the State of Arizona and the policies of the Arizona Board of Regents.

Cancellation for Nonappropriations. In accordance with A.R.S. § 35-154, if ASU's performance under this Agreement depends on the appropriation of funds by the Arizona Legislature, and if the Legislature fails to appropriate the funds necessary for performance or reduces ASU's appropriation during the fiscal year, then ASU may provide written notice of this to Sponsor and reduce the scope of this Agreement or cancel this Agreement without further obligation of ASU. Appropriation is a legislative act and is beyond the control of ASU.

Conflict of Interest. In accordance with A.R.S. § 38-511, ASU may cancel this Agreement within three years after the execution of this Agreement, without penalty or further obligation, if any person significantly involved in initiating, negotiating, securing, drafting, or creating this Agreement on behalf of ASU, at any time while this Agreement or any extension thereof is in effect, becomes an employee or agent of the other party to this Agreement in any capacity or a consultant to any other party with respect to the subject matter of this Agreement.

Independent Contractor. ASU is an independent contractor and will be free to exercise its discretion and independent judgment as to the method and means of performance of its work hereunder. ASU employees will not be considered employees of Sponsor, and neither ASU nor Sponsor personnel will, by virtue of this Agreement, be entitled or eligible, to participate in any benefits or privileges given or extended by the other party to its employees.

Termination. Either party may at any time terminate this Agreement by giving the other party not less than thirty (30) days prior written notice. In the event this Agreement is canceled by Sponsor, Sponsor will remain responsible for payment to ASU for all work performed through the date of termination and for reimbursement to ASU of all non-cancelable commitments incurred in the conduct of the research. Non-cancelable commitments will include employment commitments to ASU personnel through the end of the semester following any such termination

by Sponsor. In the event ASU terminates this Agreement any unused funds from the advance will be returned.

Force Majeure.

With the exception of a party's payment obligations, no liability shall result from the delay in performance or nonperformance caused by force majeure or circumstances beyond the reasonable control of the party affected, including, but not limited to, acts of God, fire, flood, substantial snowstorm or other weather condition, war, terrorism, embargo, any United States or foreign government regulation, direction or request, accident, disease, pandemic or epidemic, strike or other labor dispute or labor trouble, civil unrest, or any failure or delay of any transportation, power, equipment or communications system, other emergencies that disrupt a party's operations, or any other or similar cause beyond that party's reasonable control.

The party which is so prevented from performing shall give prompt notice to the other party of the occurrence of such event of force majeure, the expected duration of such condition and the steps which it is taking to correct such condition. This Agreement may be terminated by either party by written notice upon the occurrence of such event of force majeure which results in a delay of performance hereunder exceeding thirty (30) days.

Dispute Resolution. In the event of any dispute, claim, question, or disagreement arising from or relating to this Agreement or the breach thereof, the parties hereto will use their reasonable efforts to settle the dispute, claim, question, or disagreement. To this effect, they will consult and negotiate with each other in good faith and, recognizing their mutual interests, attempt to reach a just and equitable solution satisfactory to both parties. The Parties acknowledge that disputes arising from this Agreement may be subject to non-binding arbitration in accordance with applicable state law and court rules.

Insurance. ASU maintains general liability insurance and worker's compensation coverage as required by state law and pertinent federal laws and regulations under the State of Arizona Risk Management Plan.

Nondiscrimination. The parties agree to comply with all applicable state and federal laws, rules, regulations and executive orders governing equal employment opportunity, immigration, nondiscrimination, including the Americans with Disabilities Act. If applicable, the parties will abide by the requirements of 41 CFR §§ 60-1.4(a), 60-300.5(a) and 60-741.5(a). These regulations prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities, and prohibit discrimination against all individuals based on their race, color, religion, sex, or national origin. Moreover, these regulations require that covered prime contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, national origin, protected veteran status or disability.

Advertising, Publicity, Names And Marks. Sponsor will not do any of the following, without, in each case, ASU's prior written consent: (i) use any names, service marks, trademarks, trade names, logos, or other identifying names, domain names, or identifying marks of ASU (ASU Marks), including online, advertising, or promotional purposes; (ii) issue a press release or public statement regarding this Agreement, except for documents used for internal consumption by

Sponsor; or (iii) represent or imply any ASU endorsement or support of any product or service in any public or private communication. Any permitted use of ASU Marks must comply with ASU's requirements, including using the ® indication of a registered mark.

** * * Signature Page to Follow * * **

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their duly authorized representatives on the respective dates entered below.

**Arizona Board of Regents for and on behalf
of Arizona State University**

Sponsor

By:  _____

By:  _____

Name: Kristy Macdonald

Name: William A. Hartman

Title: Assistant Director

Title: Chairman, President & CEO

Date: August 27, 2020

Date: August 23, 2020

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Exhibit A: Scope of Work

University Project Description

Possible project(s) with the University Partner. The specific project could be delineated after a series of meetings and discussions. All of these projects are based upon the Marv IP-two granted patents and three provisional patent applications.

The University project for a rapid test to identify Covid-19 infection, from a sample such as saliva, mucus, blood and CSF will be based upon the following two IP applications: Method for Treating and Curing Covid-19 Infection , and Method for the Rapid Identification of Covid-19 Infection.

The prerequisites for the project would be:

1. The Principle Investigator agrees with the viability of the project
2. A patent attorney agrees with the potentiality for obtaining patentability of the developed IP
3. A Ph.D. in pharmacology agrees with the viability of any therapeutic modality

The targeted antigen(s)/TA(s) of Covid-19 which will be the focus of the project : Covid-19 spike glycoprotein, Covid-19 M-Protein, Covid-19 Hemoglutin-esterase dimer, Covid-19 Envelope, Covid-19 E-Protein, Covid-19 N-Protein, nsp (non-structural protein) 12 RNA-dependent RNA polymerase (nsp 12), nsp (non-structural protein) 7, nsp 8, nsp 14, nsp 12-nsp 7-nsp 8 complex, nsp7-nsp8 complex, nsp10-nsp14 complex, and nsp10-nsp16 complex.

There will be a focus on one or more of the following Projects, possibly in combination, in order to achieve a successful methodology for identifying a positive Covid-19 sample, with a high degree of certainty, and as rapidly as possible:

1. Creation of a unique Covid-19 fluorescent antibody which contains an albumin moiety and targets the rapid identification of the Covid-19 target antigens
2. The investigation of a method using dialysis, or a variant of dialysis, to remove the fluorescent antibody-antigen complex, for the rapid identification of a Covid-19 sample
3. The investigation of a method utilizing a designer fluorescent antibody with an attached macromolecular moiety. The macromolecular moiety, attached to the antibody, would be 1.000 mm to 0.00001 mm in diameter. The antibody-macromolecular moiety-targeted antigen complex would then be blocked for analysis , by using a series of microscreens which contain openings with a diameter 50.00000% to 99.99999% less than the diameter of the designer antibody-macromolecular moiety.

4. The investigation of a methodology comprising the removal of the targeted antigen(s)/TA(s) by using a designer fluorescent antibody containing an iron (Fe) moiety. This will then create an Fe-fluorescent Antibody-Antigen (Covid-19/virion) complex. This iron containing complex would then be efficaciously removed using a strong, localized magnetic force field, which could easily be identified as positive.
5. The investigation of a variant of gel filtration chromatography, which would be utilized for the rapid identification of Covid-19. The fluorescent antibody-target antigen would be used to transport the sample through a size exclusion column that would be used to separate the fluorescent antibody-target antigen by size and molecular weight.
6. The investigation of a methodology which would utilize a molecular weight cut-off filtration. Molecular weight cut-off filtration refers to the molecular weight at which at least 80% of the target antigen(s)/TA(s) is prohibited from membrane diffusion.
7. There would be the investigation of a removal methodology for the fluorescent antibody-target antigen(s). The removal methodology would be selected from a group comprising a mechanical filter, a chemical filter, a dialysis machine, a molecular filter, molecular adsorbent recirculating system (MARS), a plasmapheresis unit, or combinations thereof.

At the conclusion of each project, ASU and Sponsor will meet to review results and mutually agree on next step/phase/project direction, or termination of future projects.

Molecular adsorbents recirculating system (MARS), may be compatible and/or synergistic with dialysis equipment. MARS technology may be used to remove small to average sized molecules from the sample. The removal methodology will be any device capable of removing the fluorescent antibody-antigen complex for analysis.

Additional embodiments to be considered in this methodology would include continuous renal replacement therapy (CRRT) which can remove filterable molecules from the sample. CRRT would be particularly useful for molecular compounds that are not strongly bound to plasma proteins. Categories of CRRT include continuous arteriovenous hemofiltration, continuous venovenous hemofiltration, continuous arteriovenous hemodiafiltration, slow continuous filtration, continuous arteriovenous high-flux hemodialysis, and continuous venovenous high flux hemodialysis. The removal module is selected from a group comprising a mechanical filter, a chemical filter, a dialysis machine, a molecular filter, molecular adsorbent recirculating system (MARS), a plasmapheresis unit, or combinations thereof.

- I. Antibodies for targeted antigens:
 - a) Spike (S) protein, N protein.

b) Other antigens: E, M, NSPs need longer time to develop as it takes more times to produce and purify these antigens

II. Projects in Dr. Hartman's Project Scope that are feasible at ASU are listed below. If specific supports are need to accomplish a project, they are described after that project.

Projects

1. #1
2. #3: need a detailed method to attached the macromolecular moiety to the designer fluorescent antibody
3. #4: need a detailed method to attached the iron moiety to the designer fluorescent antibody
4. #5
5. #6

Project #2 and #7 are not feasible at ASU, as we do not have the equipment or expertise in using the dialysis machine.

III. Project stage and timeline:

1. Generate antigens: 1 or 4 months
 - a) 1 month (if only S and N)
 - b) or 4 months (if E, M and one NSP antigen)
2. generate mAbs from antigens: 6 months
 - a) hybridoma generation
 - b) hybridoma screen
 - c) sequence hybridoma
 - d) recombinant mAb expression
 - e) recombinant mAb purification
3. in vitro mAb characterization: 2 months
4. create an fluorescent antibody with an albumin moiety: 3 months
 - a) molecular construction: 1 month
 - b) expression and purification: 1 month
 - c) characterize the fluorescent antibody: 1 month
5. project 3: 3 months
6. project 4: 3 months
7. Project 5: 3 months
8. Project 6: 3 months

Projects in 5-8 can be done sequentially by the current personnel or in parallel if more scientists are hired.

IV. Personnel: Dr. Shawn Chen, Dr. Adrian Esqueda, Collin Jugler, Dr. Haiyan Sun,

V. Budget: \$29K direct cost (Personnel, Material and supplies, Animal charge, Service) + \$21K indirect cost = \$50 K per month