A BILL

To establish a uniform Federal System to promote the utilization of the results of federally sponsored scientific and technological research and development performed at small business firms, universities, and nonprofit organizations and for other related purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "University and Small Business Research Utilization Act of 1978."

Section 2. The Congress hereby finds that--

(1) A substantial portion of Federally sponsored research and development is performed at the nation's universities, nonprofit organizations, and small business firms;

(2) Inventions in scientific and technological fields resulting from such work constitute a valuable national resource;

(3) The development of such inventions to the point of practical application normally requires substantial investment from the private sector; and

(4) It is in the public interest to establish a uniform federal policy concerning rights in federally supported inventions made at universities, nonprofit organizations, and small business firms that will promote the commercial use of such inventions, recognize the equities of such organizations, promote collaboration between the commercial and nonprofit sectors, ensure that small business firms can successfully compete for Federal research and development contracts, enable small business firms to make use of their inventions to grow and to compete with larger firms, and meet the needs of the Federal Government.

Section 3. (a) Except as provided in section 3(b), each contract with a university or nonprofit organization shall include a provision allowing the university or nonprofit organization, within a reasonable time, to elect to retain title to any subject invention. Such provision shall, however, prescribe procedures for the reporting of subject inventions and the filing of patent applications and shall include such terms and conditions as are determined to be necessary to protect the public interest, including terms to effectuate those items set forth in section 3(c).

(b) In lieu of a provision as described in section 3(a), other provisions may be used by the Federal agency--

(1) when the contract is for the operation of a Government-owned research or production facility, or

(2) when the agency deems this necessary because of the classified nature of the work being performed, or

(3) in exceptional circumstances when the agency deems this to be in the public interest.

(c) The rights of universities or nonprofit organizations under section 3(a) shall be made subject to the following:

(1) The right of the Federal Government, upon request, to receive title to any invention not reported to the Federal agency within such times as are prescribed in the contract provision.

(2) The right of the Federal Government, upon request, to receive title to any inventions in the United States or other countries in which the contractor has not filed patent applications on a subject invention within such times as are prescribed in the contract provision.

(3) The right of the Federal Government, upon request, to receive title to any invention in which the contractor does not elect to retain rights.

(4) With respect to any invention in which the contractor elects rights, the Federal agency shall have a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for the Federal agency any subject invention throughout the world by or on behalf of the Federal Government (including any Federal agency), and may, if provided in the contract, have additional rights to sublicense any foreign government pursuant to foreign policy considerations or any existing or future treaty or agreement.

(5) The right of the Federal agency to require periodic reporting on the utilization or efforts at obtaining utilization that are being made by the contractor or his licensees or assignees; provided that any such information may be treated by the Federal agency as commercial and financial information obtained from a person and privileged or confidential.

(6) A prohibition upon the assignment of rights to the invention in the United States without the approval of the Federal agency, except where such assignment is made to an organization which has as one of its primary functions the management of inventions and which is not, itself, engaged in the manufacture or sale of products or processes that might utilize the invention or be in competition with emboidments of the invention and provided that such assignment is made subject to the terms of the contract provision governing rights in inventions.

(7) A prohibition against the granting of exclusive licenses to United States rights in an invention for a period in excess of the earlier of five years from first commercial sale or use of the invention or eight years from the date of the exclusive license excepting that time before regulatory agencies necessary to obtain premarket clearance unless, on a case-by-case basis, the Federal agency approves a longer exclusive license. Commercial sale or use in one field of use shall not be deemed to end the exclusive period as to other fields of use.

(8) The right of the Federal agency to require the contractor to grant a nonexclusive, partially exclusive, or exclusive license to a responsible applicant or applicants in any field of use to an invention, upon terms reasonable under the circumstances or, if the contractor refuses, to grant such license itself if the agency determines such action is necessary because the contractor has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application of the subject invention in such field of use.

(9) A requirement that the balance of any royalties or income earned to the contractor with respect to subject inventions, after payment of expenses (including any payments to inventors) incidental to the administration of subject inventions, be utilized for the support of education or scientific research.

(10) If the contractor receives $250,000 (or such larger amount as the Director of the Office of Federal Procurement Policy specifies) in net income from the licensing of any subject invention, the Government shall be entitled to a share, to be negotiated, of up to 50% of all net income from licensing received by the contractor above $250,000 (or the amount specified by the Director of the Office of Federal Procurement Policy); provided, however, that in no event shall the Government be entitled to an amount greater than that portion of the Government funding under the contract under which the subject invention was made which was expended on activities related to the making of the invention. The Director of the Office of Federal Procurement Policy is authorized and directed to revise the figure of $250,000 above at least every 3 years in light of changes in the consumer price index or other indices which he considers reasonable to use.

(d) The contract provision required under section 3(a) shall also provide that whenever the contractor subcontracts for experimental, developmental, or research work a provision shall be included in the subcontract and any such lower tier subcontracts which will prevent the vesting of title to sub-

contractor subject inventions in parties other than the Federal Government, or the university or nonprofit organization contractor, or a subcontractor that is a university or nonprofit organization except when specifically approved by the Federal agency after a subcontractor subject invention is identified. Federal agencies may, however, approve the use of different subcontract provisions on a case-by-case basis.

Section 4. (a) Except as provided in section 4(b), each contract with a small business firm shall include a provision allowing the contractor, within a reasonable time, to elect to retain title to any subject invention. Such provision shall, however, prescribe procedures for the reporting of subject inventions and the filing of patent applications and shall include such terms and conditions as are determined to be necessary to protect the public interest, including terms to effectuate those items set forth in section 4(c).

(b) In lieu of a provision as described in section 4(a), other provisions may be used by the Federal agency under the same circumstances as set forth in section 3(b) of this Act.

(c) The rights of a small business firm under section 4(a) shall be made subject to the same provisions as set forth in section 3(c)(1)-(5) and (8) and (10) of this Act. In addition, if the contractor receives net income in excess of $2,000,000 (or such larger amounts as the Director of the Office of Federal Procurement Policy specifies) on sales of products embodying a subject invention, the Government shall be entitled to a share, to be negotiated, of all additional income accruing from such sales up to the amount of the portion of the Government funding under the contract under which the subject invention was made which was expended on activities related to the making of the invention less any amounts received by the Government pursuant to the first sentence of this section 4(c). The Director of the Office of Federal Procurement Policy is authorized and directed to revise the figure of $2,000,000 above at least every 3 years in light of

changes to the consumer price index or other indices which he considers reasonable to use.

(d) The contract provision required under section 4(a) shall also provide that whenever a small business firm subcontracts for experimental, developmental, or research work a provision shall be included in the subcontract and any such lower tier subcontracts which will prevent the vesting of title to subcontractor subject inventions in parties other than the Federal Government, the small business firm contractor, or a small business firm subcontractor except when specifically approved by the Federal agency after a subcontractor invention is identified. Federal agencies may, however, approve the use of different subcontract patent provisions on a case-by-case basis.

Section 5. If a contractor or subcontractor does not elect to retain title to a subject invention in cases subject to this Act, Federal agencies may consider requests for retention of rights by any inventor in accordance with the terms of the contract or agency regulations.

Section 6. Any report of a subject invention under this Act may be treated by the Federal agency as a record exempt from disclosure pursuant to 5 USC 552(b)(4) unless (i) a United States patent application describing the invention has been filed (provided that copies of the actual patent application may be treated by the Federal agency as records exempt from disclosure pursuant to 5 USC 552(b)(4)), (ii) a description of the invention has been published elsewhere by the inventor, (iii) the contractor or a subcontractor has not elected to retain title and/or a contractor, subcontractor, or inventor has not requested the retention of title

or other commercial rights, or (iv) the contractor or subcontractor has not elected to retain title and/or the Federal agency has denied the request of the contractor, a subcontractor, or an inventor to retain title or other commercial rights.

Section 7. Nothing in this Act shall be deemed to preclude a Federal agency from obtaining rights in any background invention of a comtractor.

Section 8. As used in this Act--

(a) The term "Federal agency" means an "executive agency" as defined in 5 USC 105 and the military departments as defined by 5 USC 102.

(b) The term "contract" means any contract, grant, or cooperative agreement entered into between any Federal agency and any person for the performance of experimental, developmental, or research work funded in whole or in part by the Federal Government. Such term includes any assignment, substitution or parties, or subcontract of any type entered into for the performance of experimental, developmental, or research work under a contract.

(c) The term "contractor" means any person (as defined in section 1 of title 1, United States Code) that is a party to the contract.

(d) The term "invention" means any invention or discovery and includes any art, method, process, machine, manufacture, design, or composition of matter, or any new and useful improvement thereof, or any variety of plant, which is or may be patentable or otherwise protectable under the laws of the United States.

(e) The term "subject invention" means any invention of the contractor conceived or first actually reduced to practice in the course of or under a contract.

(f) The term "practical application" means to manufacture in the case of a composition or product, to practice in the case of a process, or to operate in the case of a machine

or system, and, in each case, under such conditions as to establish that the invention is being worked and that its benefits are available to the public either on reasonable terms or through reasonable licensing arrangements.

(g) The term "person" means any individual, partnership, corporation, association, institution, or other entity.

(h) The term "made" when used in relation to any invention means the conception or first actual reduction to practice of such invention.

(i) The term "small business firm" means a small business concern as defined at section 2 of Public Law 85-536 (15 USC 632) and implementing regulations of the Administrator of the Small Business Administration.

(j) The term "nonprofit organization" means an organization of the type described in section 501(a) of the Internal Revenue Code (26 USC 501(a)) as exempt from taxation.

Section 9. Nothing in this Act shall be deemed to convey to any person immunity from civil or criminal liability, or to create any defenses to actions, under any antitrust law.

Section 10. The Office of Science and Technology Policy and the Office of Federal Procurement Policy are authorized to jointly issue regulations which may be made applicable to all Federal agencies establishing standard contract provisions required under this Act.

Section 11. This Act shall take precedence over any other act which would require a disposition of rights in subject inventions in a manner that is inconsistent with this Act, including but not necessarily limited to the following:

(1) Section 10(a) of the Act of June 29, 1935, as added by title 1 of the Act of August 14, 1946 (7 USC 427i(a); 60 Stat. 1085);

(2) Section 205(a) of the Act of August 14, 1946 (7 USC 1624(a); 60 Stat. 1090);

(3) Section 501(c) of the Federal Coal Mine Health and Safety Act of 1969 (30 USC 951(c); 83 Stat. 742);

(4) Section 106(c) of the National Traffic and Motor Vehicle Safety Act of 1966 (15 USC 1395(c); 80 Stat. 721);

(5) Section 12 of the National Science Foundation Act of 1950 (42 USC 1871(a); 82 Stat. 360);

(6) Section 152 of the Atomic Energy Act of 1954 (42 USC 2182, 68 Stat. 943);

(7) Section 305 of the National Aeronautics and Space Act of 1958 (42 USC 2457);

(8) Section 6 of the Coal Research Development Act of 1960 (30 USC 666; 74 Stat. 337);

(9) Section 4 of the Helium Act Amendments of 1960 (50 USC 167b; 74 Stat. 920);

(10) Section 32 of the Arms Control and Disarmament Act of 1961 (22 USC 2572; 75 Stat. 634);

(11) Subsection (e) of section 302 of the Appalachian Regional Development Act of 1965 (40 USC App. 302(e); 79 Stat. 5);

(12) Subsection (a)(2) of section 216 of title 38, United States Code;

(13) Section 9 of the Federal Nonnuclear Energy Research and Development Act of 1974 (42 USC 5901; 88 Stat. 1878

(14) Section 3 of the Act of June 22, 1976 (42 USC 1959d, note; 90 Stat. 694);

(15) Subsection (d) of section 6 of The Saline Water Conversion Act of 1971 (42 USC 1959(d); 85 Stat. 161);

(16) Section 303 of the Water Resources Research Act of 1964 (42 USC 1961c-3; 78 Stat. 332);

(17) Section 5(d) of the Consumer Product Safety Act (15 USC 2054(d); 88 Stat. 1211);

(18) Section 3 of the Act of April 5, 1944 (30 USC 323; 58 Stat. 191); and

(19) Section 8001 of the Solid Waste Disposal Act (42 USC 6981; 90 Stat. 2829).

(b) This Act shall also be construed to take precedence over any future Act unless that Act specifically cites this Act and provides that it shall take precedence over this Act.

Section 12. This Act shall take effect 180 days after the date of enactment of this Act, except that the regulations referred to in section 10, or other implementing regulations, may be issued prior to that time.

SECTIONAL ANALYSIS

OF THE

UNIVERSITY AND SMALL BUSINESS RESEARCH UTILIZATION ACT OF 1978

Section 1

The official title of the Act is given in section 1 as the "University and Small Business Research Utilization Act of 1978." The Act deals with Government patent policy with respect to (1) universities and nonprofit organizations and (2) small business firms performing research with Government support, but does not establish policy with respect to contracts with larger, commercial concerns. Thus the Act focuses on two distinct classes of performers of Government R & D. It is believed that the principles that should be applied to these performers are clear and noncontroversial. Arguments raised against leaving rights in inventions to larger Government contractors, to the extent they are valid, clearly have no relevance when applied either to small business firms or to universities and nonprofit organizations that are not engaged in commerce. Indeed, if such arguments were accepted and applied with respect to these two groups, it is clear that a result opposite to that desired would occur.

Section 2

Section 2 sets forth the relevant findings that support the operative sections of the Act. The significant role of small business firms, universities, and nonprofit organizations in the performance of Government sponsored research is recognized. The need for additional private investment in inventions made by such organizations is also recognized as necessary for commercialization of such inventions. The fourth finding recognizes that Government patent policy can play an important role in promoting the commercial

use of such inventions, and that patent policy should also be designed to meet the equities of the parties and to promote other goals. Among the latter are listed the promotion of university-industry collaboration, small business participation in Government R & D programs, and the growth and competitive position of small business firms. Finally, it is recognized that Government patent policy must also meet the needs of the Government.

Section 3

Section 3 provides the basic framework for the allocation of rights to inventions made by universities and nonprofit organizations with Government support. It is designed to provide the minimal but critical rights needed to bring about commercialization of these inventions. At the same time sufficient safeguards are required to allow the Government the means to promote effective commercialization when a university or nonprofit organization either fails to elect rights in an invention or fails to achieve commercialization of an invention to which it elects rights. Section 3(a) provides that as a normal rule university and nonprofit organization grants and contracts are to contain a provision allowing the organization to elect to retain title to inventions subject to various terms and conditions as set forth in section 3(c) and 3(d). It also contemplates that the standard clause would include other administrative conditions dealing with such things as reporting time periods and patent application filing time periods.

Section 3(b) sets forth three situations in which Federal agencies may use different patent provisions. Section 3(b)(1) recognizes that in so-called "GOCO" situations, the contractor may have little equity, and the situation may be more suitable for direct Government licensing efforts. Or agencies might wish to use deferred determination clauses in such situations and decide the best way to promote identified inventions on a case-by-case basis.

Section 3(b)(2) recognizes that classified work relating to the national security may require different patent provisions. Section 3(b)(3) recognizes that in isolated cases there may be reason for the Government to take title or defer determinations of rights. Possibly this might be the case in some projects where the Government plans to carry the research through full development and marketing.

Section 3(c) is designed to ensure that the needs of the Federal Government and the public are fully protected. It requires provisions in the standard contract provisions to allow the Government to obtain title to inventions in which the university does not elect title or which were not reported to the Government within the times prescribed in the standard clause. It also allows the Government to take title in instances when the university fails to have a foreign or U. S. patent application filed, as the case may be. And though every detail is not spelled out, it is, of course, expected that the standard clause would have other provisions allowing the Government to take title in cases where patent applications are filed but not prosecuted or where patents are not maintained.

In cases where the contractor elects rights, the Government would obtain a royalty-free license for Governmental use. To ensure that the rights obtained by the university are not simply sold to the highest bidder, assignments are barred expect to patent management organizations unless the Federal agency approves of the assignment. Limits are placed on the period of exclusive license of U. S. rights.

Universities and nonprofit organizations would also be required to provide periodic reports on their licensing activities. And the Government is given the right to require licensing in fields of use where the contractor or its licensees are failing to take reasonable steps to bring the invention to the point of practical application. This could mean either non-use or commercialization on a scale insufficient to satisfy market demand or on terms that are unreasonable.

Section 3(c) also provides that in cases where a univeristy makes sizable royalty income a portion of the net income will be returned to the Government. Royalty sharing is required where the returns are substantial (above $250,000) so as to prevent the destruction of the incentive for universities to engage in licensing activity. In no event is the Government to receive more than it actually contributed to the making of the invention under the applicable contract or grant. In most cases this will be less than the total amount of the contract under which the invention was made. For example, it is likely that the contract will have involved activities subsequent to the making of an invention. It may also have funded activities of various investigators who were not inventors and who were working on aspects of the project unrelated to the invention. It is expected that the agency and the university will negotiate the agreed-to amount as well as a formula for royalty sharing above the $250,000 figure. The Office of Federal Procurement Policy is given authority to revise the threshold figure in light of general price changes.

Finally, section 3(c) requires that any net income from inventions be used to promote education or scientific research.

Section 3(d) requires the use of a subcontract provision that is designed to prevent any subcontractors that are not themselves universities or nonprofit organizations from automatically getting title to their inventions. Case-by-case agency approval either at the time of subcontracting or after an invention is identified would be required for title to be left in commercial subcontractors.

The following is envisioned as the type of standard contract provision that would meet the requirements of sections 3(a), (c), and (d). With appropriate modification a similar clause could be used to implement section 4:

PATENT RIGHTS - UNIVERSITIES AND NONPROFIT ORGANIZATIONS

(a) Definitions

(1) "Invention" means any invention or discovery and includes any art, method, process, machine, manufacture, design or composition of matter, or any new and useful improvement thereof, or any variety of plant, which is or may be patentable or otherwise protectable under the laws of the United States.

(2) "Subject invention" means any invention of the awardee conceived or first actually reduced to practice in the course of or under an award.

(3) "Award" means any contract, grant, or cooperative agreement entered into between the agency and any person for the performance of experimental, developmental, or research work substantially funded by the agency, and includes any assignment, substitution of parties, or subcontract of any type entered into for the performance of experimental, developmental, or research work under an award.

(4) "Awardee" means the recipient of an award.

(5) "Agency" means the "executive agency" as defined at 5 U.S.C. 105 or the "military department" as defined at 5 U.S.C. 102 that has made the award.

(6) "To bring to the point of practical application" means to manufacture in the case of a composition or product, to practice in the case of a process, or to operate in the case of a machine or system and, in any case, under such conditions as to establish that the invention is being worked and that its benefits are available to the public either on reasonable terms or through reasonable licensing arrangements.

(7) "Made" when used in relation to any invention or discovery means the conception or first actual reduction to practice of such invention in the course of or under an award.

(b) Allocation of Principal Rights

(1)(A) The awardee shall have the right to elect to retain the entire right, title, and interest throughout the world or in any countries thereof in and to each subject invention of the awardee submitted in an invention disclosure pursuant to (e) below, subject to the provisions of this clause. The awardee shall include with each invention disclosure an election as to whether or not it is exercising this right; provided that when the awardee desires additional time to determine the commercial potential of the invention, the awardee may request an extension of the election period. In such cases, the election must be made within such time as directed by the Agency. In the event a request for additional time is made and granted, the awardees shall (i) promptly advise the of any decision not to elect rights and (ii) shall promptly notify the Agency of any on sale, public use, or publication of the invention of which it becomes aware after the time of its initial invention disclosure.

(B) At any time within 30 days from the date an awardee elects not to retain rights in a subject invention, any inventor of that invention may submit a request to the agency that he or she be allowed to retain title and principal rights in the invention. Such a request shall be subject to procedures set forth in applicable agency or other Government regulations.

(2) The awardee agrees to convey to the Government, upon request, the entire domestic right, title, and interest in any subject invention when the awardee:

(i) does not elect under paragraph (b)(1) to retain such rights; or

(ii) fails to have a United States Patent application filed on the invention in accordance with paragraph (e), or decides not to continue prosecution of such application; or

(iii) at any time, no longer desires to retain title.

(3) The awardee agrees to convey to the Government, upon request, the entire right, title, and interest in any subject invention in any foreign country when the awardee:

(i) does not elect under paragraph (b)(1) to retain such rights in the country; or

(ii) fails to have a patent application filed in the country on the invention in accordance with paragraph (f), except that if an application has been filed in a foreign country after the time specified in paragraph (f) but prior to such request by the Government, the awardee shall retain the entire right, title, and interest in the Subject Invention in the country involved; or decides not to continue prosecution of such application or to pay any maintenance fees covering the invention. The awardee shall provide the agency with the earliest possible notice of any decision or contemplated decision to abandon a patent application or discontinue the payment of maintenance fees.

(4) A conveyance, requested pursuant to paragraph (b)(2) or (3), shall be made by delivering to the agency duly executed instruments (prepared by the agency) and such other papers as are deemed necessary to vest in the Government the entire right, title, and interest to enable the Government to apply for and prosecute patent applications covering the invention in this or the foreign country, respectively, or otherwise establish its ownership of such invention.

(c) Minimum Rights Acquired by the Government

(1) With respect to each subject invention to which the awardee retains principal or exclusive rights, the awardee:

(A) Hereby grants to the Government of the United States a nonexclusive, nontransferable, paid-up license to make, use, and sell each subject invention throughout the world by or on behalf of the Government of the United States (including any Government agency).

(B) Hereby agrees to grant, upon the request of the agency, a nonexclusive, partially exclusive, or exclusive license to a responsible applicant or applicants in any field of use to an invention, upon terms reasonalbe under the circumstances; and further grants to the agency the right to issue such licenses itself if the awardee refuses to grant such licenses if the agency determines such action is necessary because the awardee has not taken, or is not expected to take within a reasonable time, effective steps to bring to the point of practical application the subject invention in such field of use. Any requests made pursuant to this paragraph shall be by the head of the agency or a duly authorized agent, and the awardee shall be given written notice of any proposed request not less than thirty days prior to the issuance of a formal request and, if the awardee so requests, a hearing shall be held before the request is issued and otherwise made effective.

(2) Nothing contained in this section shall be deemed to grant to the Government any rights with respect to any invention other than a subject invention.

(d) Invention Identification, Disclosure and Reports

(1) The awardee shall furnish the agency a complete technical disclosure for each subject invention promptly after the awardee has completed such technical evaluations and market studies that it finds necessary to determine whether an election to retain rights should be made; provided that in no event shall such disclosure be made later than two years after the subject invention is first known to awardee officials responsible for administering invention matters; and provided, further, the disclosure shall be made immediately in any case where publication or use has initiated the one-year statutory bar period for patenting. The disclosure shall identify the award and inventor(s) and shall be sufficiently complete in technical detail and appropriately illustrated by sketch or diagram to convey to one skilled in the art to which the invention pertains a clear understanding of the nature, purpose, operation, and, to the extent known, the physical, chemical, biological, or

electrical characteristics of the invention. The disclosure shall include a statement as to whether or not the awardee is aware of any on sale, public use, or publication of the invention, and, if so, details shall be provided.

(2) It is agreed and understood that each technical disclosure furnished under paragraph (d)(1) is submitted in confidence and is not to be disclosed outside the Government until after either a United States or foreign patent application has been filed by or on behalf of the awardee or until a description of the invention has been published elsewhere by the inventor or awardee, provided that the agency may duplicate and disclose any disclosure to which the awardee does not elect to retain rights beginning any time after 30 days from such non-election. However, if an inventor, in such a case, has made a timely request for rights, then the agency shall continue to hold the disclosure in confidence until such time as the agency determines that the inventor will not be allowed to retain rights.

(3) The awardee shall obtain patent agreements to effectuate the provisions of this clause from all persons in its employ who perform any part of the work under the award except nontechnical personnel, such as clerical employees and manual laborers.

(e) Filing of Domestic Patent Applications

(1) With respect to each subject invention in which the awardee elects to retain domestic rights pursuant to paragraph (b)(1) of this clause, the awardee shall have a domestic patent application filed within six months after the election or such longer period as may be approved in writing by the agency.

(2) For each subject invention on which a U. S. patent application is filed by or on behalf of the awardee, the awardee shall: ---

(A) within six months after the filing, or within six months after submission of the invention disclosure if the patent application was filed prior to the contract, deliver to the agency a duly executed and approved confirmation instrument on the form specified in paragraph (1).

(B) within six months after the filing, or within six months after submission of the invention disclosure if the patent application was filed prior to the award, notify the agency of the filing date and serial number of the application and deliver to the agency (a) a copy of that portion of the application as filed, which contains the statement required by paragraph (e)(2)(C), and (b) a copy of an assignment from the inventor or inventors to the institution of all right, title, and interest in the invention properly recorded in the United States Patent and Trademark Office;

(C) include the following statement, appropriately completed, in the second paragraph of the specification of the application and any patents issued on the subject invention, "The Government has rights in this invention pursuant to Contract(s) (or Grant(s)) No(s). _____ awarded by the (Agency) _____."

(D) not less than thirty days before the expiration of the response period for any action required by the United States Patent and Trademark Office, notify the Agency of any decision not to continue the agency of the application and deliver to the agency executed instruments granting the Government a power of attorney;

(E) upon request, fully advise the agency concerning all actions taken during the prosecution of any patent application and furnish copies of any relevant documents as requested; and

(F) provide the agency with a copy of the patent within six months after a patent issues on the application.

(f) Filing of Foreign Patent Applications

(a) With respect to each subject invention in which the awardee elects to retain principal rights in a foreign country pursuant to paragraph (b)(1) of this clause, the awardee shall have a patent application filed on the invention in that country, in accordance with applicable statutes and regulations, and within one of the following periods:

(i) eight months from the date of a corresponding United States application filed by or on behalf of the awardee, or if such an application is not filed, six months from the date an election is made pursuant to paragraph (b)(1) of this clause;

(ii) six months from the date a license is granted by the Commissioner of Patents and Trademarks to file foreign applications when such filing has been prohibited by security reasons; or

(iii) such longer period as may be approved by the agency.

(b) The awardee shall notify the agency of foreign applications filed and, upon request, shall furnish an English version of such application without additional compensation.

(g) Subcontracts

(1) Except as provided in (2) below, the awardee shall include in any subcontract where a purpose of that subcontract is the conduct of experimental, developmental, or research work the following clause:

Patent Rights

(a) The Contractor hereby agrees to furnish a complete technical disclosure to the _____ (Awardee) within six months after any invention is conceived or first actually

reduced to practice in the course of or under this contract (hereinafter referred to as "subject inventions(s)") and, subject to (b), below, to assign all right, title, and interest in and to such invention to awardee or its designee.

(b) At the time the Contractor reports any "subject invention" to _____ (Awardee), the Contractor, at its option, may also report the invention to the agency with which the institution holds the prime contract, and request that the agency make a determination whether and on what terms the contractor may retain principal rights in the invention in lieu of assigning it to _____ (Awardee). Such determinations by the agency shall be in accordance with the policies and procedures of applicable agency or other Government regulations. Such determination shall be final on both the Contractor and _____ (Awardee), provided that the Contractor may elect not to accept the agency's determination and instead assign all right, title, and interest in the invention to _____ (Awardee) or its designee.

(c) In addition, the Contractor agrees to furnish the following materials, disclosures and reports:

(i) Upon request, such duly executed instruments (prepared by the _____ or its designee) and such other papers as are deemed necessary to vest in the _____ (Awardee) or its designee the rights granted under this clause and to enable the _____ (Awardee) or its designee to apply for and prosecute any patent application, in any country, covering such invention.

(ii) Prior to final settlement of this contract, upon request a final report listing all subject inventions or certifying that no inventions were conceived or first actually reduced to practice under the contract.

(d) The Contractor shall include in any subcontract a clause identical to this clause, if a purpose of the subcontract is experimental, developmental, or research work. If a subcontractor refuses to accept this cluase or if, in the opinion of the Contractor, this clause is inconsistent with the policy set forth in 41 CFR 1-9. 107-3 and/or applicable agency regulations, the Contractor (i) shall promptly notify the Institution and (ii) shall not proceed with the subcontract without the written authorization of the Institution. It is understood that the Institution will seek direction from the appropriate federal agency.

(e) The Contractor shall not be obligated to enforce the agreements of any Subcontractor hereunder relating to the obligations of the Subcontractor to the Government in regard to subject inventions.

(End of Subcontract Clause)

(2) In the event of a refusal by a subcontractor to accept the clause specified in (1), or if, in the opinion of the awardee, this clause is inconsistent with the policy set forth in agency regulations or 41 CFR 1-9 107-3, the awardee (i) shall promptly submit a written notice to the agency setting forth reasons for the Subcontractor's refusal and other pertinent information which may expedite disposition of the matter; and (ii) shall not proceed with the subcontract without the written authorization of the agency.

(3) It is understood that the Government is a third party beneficiary of any subcontract clause granting rights to the Government in subject inventions, and the awardee hereby assigns to the Government all rights that it would have to enforce the Subcontractor's obligations for the benefit of the Government with respect to subject inventions. The awardee shall not be obligated to enforce the agreement of any subcontractor hereunder relating to the obligations of the Subcontractor to the Government in regard to subject invention.

(4) Nothing in this Agreement is intended to preclude the awardee from granting a subcontractor rights or an option to rights in any inventions made by the subcontractor to the extent such rights are consistent with the provisions of this clause.

(h) Administration of Inventions in which the Institution Elects to Retain Rights

(1) The awardee shall administer those subject inventions to which it elects to retain title in the public interest and shall, except as provided in subsection (2) below, make them available through licensing on a nonexclusive or exclusive, royalty-free or reasonable royalty basis.

(2) Any exclusive license issued by the awardee under a U. S. patent or patent application shall be for a limited period of time and such period shall not, unless otherwise approved by the agency, exceed five years from the date of the first commercial sale or use in the United States of America of a product or process embodying the invention, or eight years from the date of the exclusive license excepting that time before regulatory agencies necessary to obtain premarket clearance, whichever occurs first. However, commercial sale or use in one field of use of a subject invention shall not be deemed to end the exclusive period as to other fields of use. Such license shall also provide that the licensee shall use all reasonable effort to effect introduction into the commercial market as soon as practicable, consistent with sound and reasonable business practices and judgment. Any extension of the maximum period of exclusivity shall be subject to approval of the agency. Upon expiration of the period of exclusivity or any extension thereof, licenses shall be offered to all qualified applicants at a reasonable royalty rate.

(3) The balance of the royalty income after payment of expenses, including payments to inventors, incidental to the administration of all inventions assigned to it pursuant to the provisions of this clause shall be utilized for the support of education or scientific research.

(4) All licenses issued by the awardee to other than the Government of the United States under any patent applicationor patent on a subject invention shall be made expressly subject to the conditions of this clause. The awardee shall, upon request, promptly furnish copies of any license agreements to the agency, provided that such licenses shall be considered privileged or confidential and the agency will not disclose such licenses to persons outside the Government.

(i) Patent Management Organizations

Except with the specific approval of the agency, the awardee shall not assign any subject invention to any person or organization other than the Government of the United States or an organization which has as one of its primary functions the management of inventions and patents and which is not, itself, engaged in the manufacture or sale of products or processes that might utilize the invention or be in competition with embodiments of the invention, provided that any assignment to a patent management organization shall specifically be made subject to all the terms and conditions of this clause.

(j) Reports on Development and Commercial Use

The awardee shall provide a written annual report to the agency on or before December 31st of each year covering the preceding year ending September 30th, regarding the status of development and commercial use that is being made or intended to be made of each subject invention left for administration to the awardee and the steps that have been taken by the awardee to bring the invention to the point of practical application. Such reports shall include information regarding status of development, the date of first commercial sale or use, gross royalties received by the awardee and such other data and information as the awardee may reasonably specify. To the extent data or information supplied to this section is considered by a licensee to be privileged or confidential and is so marked, the agency agrees that it will not disclose such information to persons outside the Government.

(k) Return of Government Support

If the awardee receives $250,000 in net income from the licensing of a subject invention, it shall advise the agency. In such event the parties shall enter into negotiations to establish the amount of funds provided under this award which were expended on activities related to the making of the invention. The Government shall be entitled to receive up to this amount out of any additional net income about $250,000 which is received by the awardee. The parties shall negotiate a reasonable share (not in excess of 50%) which the Government shall receive from net income above $250,000 until the amount agreed upon has been reached. Equitable adjustments to any agreements entered into pursuant to this paragraph (k), including the return of income by the Government as appropriate, shall be made in the event that future costs of the awardee in connection with the invention such as litigation costs, have the effect of substantially reducing its net income before payment to the Government.

(l) Communications

Requests for Foundation approvals, extensions, or similar actions and other correspondence required by the Agreement should be addressed to the (To Be Inserted by the Agency).

(m) Confirmation Instrument

The following is the format for the confirmatory instrument required by paragraph (e)(2)(A) of this clause.

CONFIRMATORY INSTRUMENT

Application for: _____ (Title of Invention)
Inventor(s) _____
Serial No. _____ Contract (Grant) No. _____
Filing Date: _____ Institution _____

The invention identified above is a "Subject Invention" under Award No. _____ with (Name of Agency).

This document is confirmatory of the paid-up license granted to the Government under this award in this invention,

patent application and any resulting patent, and of all other rights acquired by the Government by the referenced award.

It is understood and agreed that this document does not preclude the Government from asserting rights under the provisions of said Agreement or of any other agreement between the Government and the Awardee, or any other rights of the Government with respect to the above identified invention.

The Government is hereby granted an irrevocable power to inspect and make copies of the above-identified patent application.

Signed this ____day of_____, 19_.

_____
(Institution)

_____
(Signature)

_____
(Print or type name)

_____
(Official title)

CERTIFICATE

I,_____, certify that I am the _____of the Institution named as licensor herein; that _____, who signed this License on behalf of the Institution is _____of said Institution; and that said License was duly signed for and in behalf of said Institution by authority of its governing body, and is within the scope of its corporate power.

_____
(Signature)

(END OF SAMPLE CLAUSE)

Section 4

Section 4 provides the basic framework for the allocation of rights to small business firms. It is substantially identical to section 3 except that the assignment, licensing, and use of income limitations found at section 3(c)(6),(7), and (9) are not made applicable to small business firms. It is considered necessary to give small business firms greater flexibility in the use of their rights in order to maximize the growth and profitability of such firms. Income sharing with the Government is also provided in the case of substantial sales of products embodying subject inventions as well as royalty sharing where a small business contractor licenses a subject invention. The provisions and philosophy are similar to that discussed in connection with section 3(c)(10).

Section 5

Section 5 is intended to make clear that agencies may consider requests by individual inventors for retention of rights in cases where the contractor or subcontractor does not elect or seek rights. It is, of course, expected that the standard clause will require that persons performing research functions under a contract or grant will be required to assign rights to subject inventions either to their employer or the sponsoring Federal agency upon request.

Section 6

Section 6 is intended to allow agencies to withhold disclosure of invention reports up until the time that this is no longer needed to prevent the commencement of a statutory bar to patenting on account of the publication of the invention. Provision is also made for nondisclosure of copies of any patent applications in the possession of the Federal agency in order to prevent disruption of normal patent office procedures including the possibility that a party to an interference proceeding could obtain an unfair advantage through premature access under the Freedom of Information Act.

Section 7

Section 7 is intended to make clear that Federal agencies may negotiate for rights in background patents as part of the award process. It is expected that the need for this will be relatively rare.

Section 8

Section 8 is a definitional section.

The definitions of "invention", "subject invention", and "made" are substantially similar to the definitions now given these terms in standard Government patent clauses. They represent terms of art that have been in use for many years.

The definitions of the terms "contract", "contractor", and "person" cover all forms of contracts, grants, and cooperative agreements now in use to support Federal research. Of special note is the fact that subcontractors are covered by the definition of "contractor". Thus the terms of this Act are applicable to small business subcontractors even if the prime contractor is a large business concern that is subject to more restrictive patent provisions.

The term "practical application" is based upon the definition of the same term found in the Presidential Memorandum and Statement of Government Patent Policy and current Government patent clauses.

The terms "Federal agency", "small business firm", and "nonprofit organization" are self-explanatory.

Section 9

Section 9 makes clear that the fact that a person obtains rights in an invention in accordance with this act does not give him the right to use that invention in a manner that is violative of the anti-trust laws.

Section 10

Section 10 provides the Office of Federal Procurement Policy and the Office of Science and Technology Policy authority to jointly issue regulations establishing a standard contract provision. Since OFPP has authority over contracts but not grants and because OSTP has cognizance over interagency patent policy activities, it is considered desirable to have a joint drafting effort. In turn, it is expected that additional regulations will be issued through normal OFPP, OMB, or agency channels implementing other aspects of the Act or otherwise amending existing regulations to take account of the Act and the standard OFPP/OSTP clause.

Section 11

Section 11 provides that the Act shall govern Federal patent policies and practices as they relate to universities and nonprofit organizations and small business firms. Section 11(a) lists nineteen statutory provisions that could arguably or clearly be interpreted as requiring a disposition of rights in a manner contrary to this Act. This Act will take precedence over these Acts and any other Acts that may have been overlooked that are inconsistent. Similarly, this Act is intended to take precedence over any future Acts dealing with the subject of patent policy vis-a-vis Government supported research unless such Act clearly states otherwise.

Section 12

Section 12 provides that the Act will take effect 180 days after its enactment. This is to enable the issuance of the necessary OFPP/OSTP joint regulations and other regulatory changes which are authorized to be issued prior to the 181st day.

BACKGROUND PAPER
TO
SUPPORT AND EXPLAIN THE NEED FOR THE PROPOSED
"UNIVERSITY AND SMALL BUSINESS RESEARCH
UTILIZATION ACT OF 1976"

Introduction

The University and small business communities are jointly seeking Congressional support for legislation to improve current Government policies as they affect the allocation of rights to inventions made by these organizations under Government grants and contracts.

The proposed Act represents an attempt to seek a solution to specific problems that face both of these groups, but does not try to arrive at an overall solution to the Government patent policy issue. In the past almost all bills proposed in this area have been broad in scope and have dealt with the whole range of Government R & D contractors and grantees. The result has been that the interests and needs of the university and small business communities (which collectively perform at least 36% of all Government-sponsored, extramural R & D) have been lost in heated argument and debate over the treatment of large, industrial contractors. As will be discussed in more detail, it is becoming increasingly evident that the interests of these two groups were not understood by the framers of Section 9 of the Federal Nonnuclear Energy R & D Act of 1974 which has become the model for subsequent legislation. Other recent administrative developments do not portend well for the future. Hence, the proposed bill represents a viable and responsible approach to Government patent policy that will satisfy the needs of these two groups and at the same time promote and protect the wider public interest.

The Goals of the University and Small Business Communities

The proposed Act is designed to achieve a number of goals of the small business and university communities. Most, if not all, of these goals coincide with wider national goals such as increasing competition, economic growth, and job expansion.

The university community seeks a Government patent policy that will have the following characteristics:

(1) A simple and uniform system that minimizes administrative burdens on the university community (and coincidentally the Government.)

(2) A system that provides at least the minimum incentives and conditions necessary to achieve to the maximum extent practicable the commercialization of university inventions made under Government awards.

(3) A system that will encourage industrial sponsorship of university research.

(4) A system that will recognize the equities of the universities, other university sponsors, and, in many cases, the States which support the universities.

The small business community also seeks a system that is simpler and less burdensome and which recognizes their equities. However, small business is especially concerned that Government patent policy-

(1) make it attractive for small business to participate in Government sponsored research and allow small business to more effectively compete with larger competitors for Government support, and

(2) allow small business to use inventions made by them with Government support to maximize firm growth and enhance their competitive positions in non-government markets.

The Act proposed will accomplish these goals while at the same time promoting larger national goals of increased competition, increased innovation and product development, and increased economic growth and job expansion. At the same time the Act would protect the Government's interests by providing it with a royalty-free license. It also would allow the Government to make exceptions in certain classes of cases or on a case-by-case basis. And the right of the Government to require licensing in

cases when small business firms or universities fail to take effective steps to develop inventions is a feature of the proposed Act.

The Current Situation and Policies

At the outset, it must be understood that the current situation is generally counterproductive to these goals, and, if anything, seems to be moving in an even more counterproductive fashion.

As identified in section 11 of the proposed Act, there are currently 19 different statutes governing different Government agencies or programs. Sometimes different programs within the same agency will be governed by different statutes, or some programs of a given agency may be governed by statute and others not. These statutes tend, with a few exceptions, to encourage retention of title to inventions in the Government, but normally allow agencies flexibility to grant waivers.

In addition to these statutes, most agencies have shaped their policies around the Presidential Memorandum and Statement of Government Patent Policy issued in 1963 by President Kennedy. However, this Statement is so structured to accomodate a myriad of practices and leaves considerable operational flexibility in the individual agencies.

The result of the above is that there are at least as many different patent policies and procedures as there are agencies. Agency clauses tend to differ. Willingness and procedures for negotiating clauses and after the fact waivers vary considerably from agency to agency, and even sometimes within different elements of the same agency. Similarly, the terms upon which waivers are granted tend to vary considerably. For universities and small business firms that deal with several agencies, it becomes an enormous burden just to understand the differing requirements and procedures imposed by these agencies.

However, while the details and specific procedures tend to differ considerably, the broad outlines and net result are often the same. Universities can expect their Government awards to include terms allowing the Government to take title, but allowing deferred determinations of rights after inventions are identified. The only current exceptions to this are DHEW and MSF which have entered into Institutional Patent Agreements with some universities which give them a first option to retain title. Up until a few years ago DOD gave favorable treatment to universities on a list of institutions with approved patent policies. However, this was discontinued when, the Armed Services Procurement Regulations were conformed to the Federal Procurement Regulations, and it is not clear what DOD's present intentions are. Small business firms can also normally expect to receive a title-in-the-Government or deferred determination clause from all agencies except DOD. Usually, they would have to negotiate on a case-by-case basis for more favorable treatment.

Moreover, the ability of agencies to grant more favorable treatment as a result of negotiations, or under deferred determinations, or through IPAs is increasingly being placed under legislatively created burdens and procedures. For example, Section 9 of the Federal Nonnuclear Energy R & D Act of 1974 places a presumption in favor of title in the Government, and though it does allow DOE the flexibility to grant waivers it requires the consideration of a rather extensive list of factors prior to such grants. This Act has been interpreted by DOE as preventing it from using an Institutional Patent Agreement approach with respect to universities, thus making it more restrictive than the President's Policy Statement. It also plays mere lip service to the needs of small business firms and essentially requires their compliance with the same expensive and time consuming procedures with which larger and more financially able competitors are faced. Unfortunately, section 9 has since been incorporated by reference and made applicable to three more Government R & D programs. It appears to be the waive of the future.

Recent developments on the administrative front also point to a movement in Government patent policy more in the direction of a title-in-the-Government approach regardless of the type of performer involved. The primary example of this was the recent decision of OMB/OFPP to suspend recently issued amendments to the Federal Procurement Regulations which for the first time formally recognized and authorized the use of Institutional Patent Agreements for university contracts. These regulations had been widely supported and commented upon in draft form by the university community and others in 1976. They implemented recommendations in a report on Government patent policy vis-a-vis universities that was approved unanimously by the FCST Committee on Government Patent Policy in 1975.

Equally disturbing are recent developments within DHEW which currently funds approximately one-half of all Federally-supported, university research. It is understood that waiver petitions from institutions and contractors not holding IPAs are all now being held up within DHEW. It is also understood that a paper is being discussed internally within DHEW which seriously proposes the abolition of IPAs. Thus DHEW may be headed back to its regressive policies of the early 1960's which were sounding criticized by the General Accounting Office in 1968. The current policy follows suggestions of the GAO.

Furthermore, it is our understanding that President Carter has indicated a predelection towards use of a title-in-the Government approach. Why he has done so we do not know, but it seems to stem from his association with Admiral Rickover who, contrary to almost everyone else in DOD, has been a long time advocate of a title-in-the-Government approach for all Government contractors be they large or small, profit or nonprofit.

In view of all these trends, both legislative and administrative, the university and small business communities consider it imperative that legislation extracting them from the

deeping morass of Government patent policy be enacted lest their positions become completed eroded.

The Proposed Act's Treatment of Universities and Nonprofit Organizations

The proposed Act is designed to overcome the current problems and to achieve the goals of the university community by normally allowing universities and nonprofit organizations the right to elect to retain title to inventions made by them with Government support, subject to various requirements and safeguards substantially similar to those now included in the Institutional Patent Agreements awarded by DHEW and NSF.

(1) Commercialization of University Inventions

This mix of rights and obligations represents the minimum but critical rights necessary to obtain the commercialization of inventions made by universities. In order to understand why this is so, one must understand the nature of university research, the inventions that flow therefrom, and the factors that affect the transfer of these inventions to the commercial marketplace.

The Federal government sponsors research in universities to expand the boundaries of existing knowledge in areas or on problems deemed to be in the public interest or to be related to national goals. Universities are usually (unless they are doing classified research) free to publish research results which are generally made available to all. The right to publish is normally preserved in the negotiation of grants and contracts, as is the sponsoring agency's right to receive agreed upon reports.

The generation of inventions is almost never the main objective of the research conducted with federal funds; rather, an invention generally is an incidental "byproduct" of the research activity, largely attributable to serendipity and/or the personal creativity of the investigator backed by his years of professional training and experience, and to the scholarly environment and research resources provided by the university.

Moreover, these inventions, unlike those of larger industrial firms, normally stand alone. As explained in a Harbridge House study:

> "Their isolation is a major obstacle to utilization since most inventions are not marketable products in themselves. The industrial product is often protected by a cordon of patents, as illustrated by the list of patents on a packet of Polaroid film. A university invention, on the other hand, is a one-shot patent. Even if the patent specification discloses an ingenious invention, the patent claims which define the scope of monopoly are likely to be narrowly drawn. Whereas industry will add to its patent arsenal as a product is improved, a university patent, if it is to be licensed at all, must be licensed on the initial effort."[1]

Education institutions are, of course, not organized either to manufacture or to produce and market patentable inventions. Neither, for that matter, is the Federal government. Accordingly, if university inventions are to be used, such institutions must seek to interest those in the industrial world who have the commercial capability for invention development and also, very importantly, market development, which the university lacks. This is often a difficult task, since few inventions coming out of university research offer readily recognizable prospects of a large market or a high return on investment. Moreover, the "not-invented-here" syndrome often poses a difficult institutional barrier. University inventions, since they most often correlate with the results of fundamental research, tend to be, at best, in the early stages of development, and therefore require the investment of substantial private risk capital to develop the invention to the appropriate state for introduction into the market.

At the same time, universities are in a unique position to objectively seek the best qualified industrial developer and under appropriate licensing arrangements monitor the diligence of development efforts by such a developer. If universities cannot

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[1] Harbridge House, Inc., Legal Incentives and Barriers to Utilizing Technological Innovation, pp. 11-13 (March 1974).

furnish, if appropriate, an exclusive license to developers for a limited period and thereby secure the investment of necessary capital, inventions resulting from government awards are less likely to be developed to the point of marketability, and thus the public is less likely to receive the benefits from such inventions, or at least may not receive them as quickly as otherwise would be the case. Moreover, most universities, though they rarely make any sizeable income from inventions, would largely lose all incentive to seek licensees if they did not hold patent rights. Because of the "publish or perish" ethic and the wide availability of the results of Government supported research, the university normally neither could nor would consider it appropriate to deal in "trade secrets."

When the right to seek patents resides in universities, appropriate patent applications can be filed promptly and negotiations immediately commenced with prospective developer/licensees, with the active assistance of the inventor. When this right does not exist at the time of contracting, but must await a determination after the invention has been identified, substantial time is usually required to prepare the necessary documentation for the sponsoring agency and for the agency to make a determination. While awaiting the outcome of such administrative process, the invention lies dormant, with the attendant risks that the inventor's interest in assisting in the development becomes attenuated and that intervening events may foreclose successful transfer of the invention to the public. For example, a potential licensee may decide to put his efforts elsewhere rather than wait for a decision.

Since deadlines for domestic and foreign patent applications are affected by publication of patentable ideas in scientific journals or thesis papers, delays in determining the disposition of rights to an invention can result either in delay of publication of research results or, what is more normally the case, the expiration of the time limit in which patent applications can be filed. Neither choice benefits the public.

The public will obtain the greatest benefit from university generated inventions under a system which offers adequate inducement to those who can bring the fruits of the research into a form useful to the consuming public. Mere exclusivity in patent rights does not ipso facto create artifically high prices for related products and royalties generally represent only a very small fraction of the retail price of marketed goods. Moreover, one must face the inescapable conclusion that the development of inventions under a reasonable Government patent policy will benefit the public by making available products that would otherwise not have been available at any price and which are presumably more attractive to the purchaser than other alternatives or substitutes.

Without exclusivity to some degree, private sources are unlikely to have sufficient incentive to invest in the effort necessary to develop most university inventions. Indeed, the investment required to bring a product or process to a marketable condition and to introduce it into the market is almost always far greater that the investment in the original research from which the invention resulted.

To bring an invention to public use, further development or engineering is required, such as testing or "screening" of new chemical compounds. Before the efforts and expenses incident to testing or screening are undertaken, investors need to know who has the title to or ownership of the invention (i.e. the right secured to inventors and their assignees or licensees, for limited times, as authorized in the Constitution.)

Often prospective licensees will refuse to undertake the testing, screening, or development of inventions unless the licensor can grant an exclusive license for commercial use or sale. In some cases, no viable alternative has been available and, in the absence of an exclusive license, the use of the invention has been denied to the public. Indeed in the case of pharmaceuticals this has

been well developed in the 1968 GAO report mentioned above and by subsequent comparisons of investment in HIH supported, university inventions ante and post 1968.

Universities usually do not possess the resources, critical facilities, or controls necessary to bring drug products, for example, through the clinical testing stages to marketability. Thus, it is imperative that they be in a position to supply an incentive under appropriate licensing arrangements to those organizations which have those facilities and control capabilities.

Since Government personnel would not be as intimately familiar with an invention as those that have made it at a university, they would be in a much less favorable position to ascertain or pursue the commercial marketability of such an invention, and it is feared that the time that would have to be invented in such activity could well cause a significant reduction in invention disclosures from university researchers, with a consequent reduction to public access to potential research applications.

Thus, the primary result of the economic stimuli afforded by a realistic patent policy is the introduction and production of new goods or services into the economy. The influx of new technology and products should stimulate competition and economic growth.

(2) University/Industrial Collaboration

The University community also believes that a Government patent policy such as that proposed in the Act is needed to foster greater industrial sponsorship of University research.

In FY 1976 of a total of $3.724 billion spent on R & D at universities around two-thirds or $2.501 billion came from the Federal government. Of the remainder only $123 million came from industrial sources with the other $1.1 billion coming from institutional funds, state and local governments, and other nonprofit institutions such as foundations. The university community believes that there exists a real potential to increase industrial support

for university research. At the same time it is apparent that to exploit this potential more favorable Government patent policies must be developed. Because such a high percentage of university investigators receive Federal support under conditions allowing the Government to obtain principal rights in any inventions, many firms that might otherwise be interested in supporting or collaborating with university scientists are reluctant to do so. They fear that the results of work they sponsor may become entangled with Government claims under its work such as to jeopardize any exclusivity they might gain.

The proposed Act would largely eliminate this problem. The benefit to the universities and nonprofit section should be obvious. At the same time, increased industrial sponsorship might ease the burden on State governments and would also have the tendancy of decreasing the absolute amount of Federal support required and/or decreasing overhead and other indirect costs paid by the Federal government by widening the base of university sponsorship.

(3) Uniformity

The proposed Act would eliminate the extensive burdens of the current deferred determination approach. Moreover, the adopting of a single, standard clause will eliminate unnecessary administrative differences.

(4) Recognition of Equities

Finally, when patentable inventions occur, the equities to be considered include not only those of the Federal government, but also those of the inventor, the university, and, occasionally, other sponsors. Rarely are federal funds the sole factor contributing to the making of an invention. Beyond the critical contribution of the investigator, the university itself virtually always helps to finance the laboratories, equipment, and personnel contributing to an invention. It also provides a scholarly atmosphere, and sometimes the infusion of funds obtained from nongovernment sources. Each of the parties has a claim in equity.

A policy which assigns patent rights to the Government for all federally supported research eliminates the equities of all parties but the Government. The proposed Act overcomes this by allowing the equities of the university, the inventor (through royalty-sharing), and other sponsors to recognized. At the same time, the Government's interest is protected by a royalty-free license to practice any inventions for Governmental purposes. Beyond this, since the taking of title by the Government would tend to inhibit commercialization, it is difficult to understand what other need the Government has for any greater rights (other than "march-in" rights and other such safeguards included in the Act.) The proposed act also provides that the Government will receive its investment back in those cases when a university earns substantial income from an invention.

The Proposed Act's Treatment of Small Business

As with universities, the proposed Act would normally allow small business firms to retain rights in any inventions made under Government contracts and subcontracts, subject to various conditions.

(1) Improving the Competitive Position of Small Business Firms

For reasons closely related to those discussed in the previous section, small business concerns often require the retention of patent rights in their inventions in order to attract investment capital or to otherwise make risk taking a reasonable proposition. It ought to be obvious that if the Government takes title to inventions made by small business firms it is, in effect, removing the incentive for those firms to develop the inventions. That is, when a large company makes an invention it may be better able to develop it without patent rights because it enjoys other advantages such as financial resources, economics of scale, access to resources, and well developed marketing and distribution systems. On the other

hand, most small firms must place much greater reliance on patent protection to prevent larger competitors from undercutting new products and markets which they may develop. The result of a title-in-the-Government approach vis-a-vis small business firms is thus to favor larger, more dominant firms, either foreign or domestic.

Since almost all the arguments of those who advocate a title-in-the-Government approach are based on the conjecture that leaving title in large contractors will be anticompetitive, we fail to understand why these arguments should be extended to small business firms.

We believe that the proposed bill leaves sufficient safeguards in the Government either at the time of contracting or after a contractor has elected rights to ensure that the goals of the Act are met with due recognition of unusual circumstances. We also believe that the benefits that will accrue to small business firms will translate directly into greater economic growth and job expansion.

Although we believe the relationship between innovation and new product development and long-term economic growth and job expansion are intuitively and historically obvious, several recent studies are cited below to illustrate this. They stress the importance of a healthy small business enterprise to these goals.

A 1967 Department of Commerce study 1/ and a more recent update of that study by John Flender and Richard Morse of the MIT Development Foundation, Inc. 2/ lend strong support to the proposition that sales growth and job creation occurs more rapidly in innovative companies than in mature (dominant) companies. And even more significant for purposes of this analysis is the fact that job expansion

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1/ Technological Innovation: Its Environment and Management, U. S. Panel on Invention and Innovation. (Washington, D. C., GPO, 1967).

2/ John O. Flender and Richard S. Morse, The Role of New Technical Enterprises in the U. S. Economy, M.I.T. Development Foundation, Inc., October 1, 1975.

at young (i.e. small) high technology companies was even more spectacular. 3/ These findings indicate that a patent policy that would deemphasize the needs of smaller firms and emphasize concerns with larger firms could have a negative impact on job expansion.

The potential harm that could accrue from discounting the need to be concerned with inventions from nondominant firms is further emphasized by a study done by Gelman Research Associates. An international panel of experts selected the 500 major innovations that were introduced into the market during 1953-73 in the U. S., U. K., Japan, West Germany, France, or Canada. Of the 319 innovations produced by U. S. industries, 24% were produced by companies with less than 100 employees. Another 24% were introduced by companies with 100 to 999 employees.

(2) The Ability of Small Business to Compete For Government R & D

As previously noted current patent policies of all agencies except DOD generally require all potential profit-making contractors, be they big or small, to accept a title-in-the-Government or deferred determination type patent cluase or to engage in negotiations on this point. The effect of this is to actually place smaller firms at a relative disadvantage to larger firms. The situation might be analogized to the old saw about the law imposing the same penalty for sleeping under the bridge be the offender rich or poor.

Put simply, current policies often place a high-technology, small business firm in the position of acception Government dollars at the cost of jeopardizing its future non-Government market position. While the same could be said of larger firms, it must be remembered that for them patents do not usually play as important a role in the maintenance or expansion of their markets. Moreover, larger firms may be in a much better financial position to resist

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3/ The authors found that during the 5 year period of 1969-74 "six mature companies with combined sales of $36 billion in 1974 experienced a net gain of only 25,000 jobs, whereas the five young, high technology companies with combined sales of only $857 million had a net increase in employment of 35,000 jobs.

Government demands and negotiate more equitable patent provisions. And they will normally have more resources to allocate to contract negotiations or after-the-fact waiver petitions. Furthermore, larger companies are better able to segregate Government and non-Government work in separate divisions so as to guard against their commercial lines being jeopardized by Government claims under R & D contracts.

For these reasons, we believe that a patent policy along the lines of the proposed Act will have an appreciable impact on the ability of the small business community to compete for Government support. At a minimum it will end the unfortunate dilemma of choosing between one's corporate "birthright" and a "mess of Government porridge."