DRAFT: FOR INTERNAL CIRCULATION ONLY

Days 3 and 4 (half day) - Proposed Workshop Sessions

Purpose: "How to" sessions conducted to provide some working familiarity with the practical aspects of: (1) motivating laboratory personnel; (2) evaluating and pricing technology; and (3) transferring technology.

Day 3

Introduction: What We Are Going To Do (Williams, 5 minutes) - 9:00-9:05

Session 1 - Motivating Laboratory Personnel (Gellman and Shackson, 1 1/2 hours)

- Invention Awareness
- Incentives and Disincentives

Break: 10:35-10:45

Session 2 - Pricing technology (Gellman and Shackson, 1 1/4 hours)

Lunch: 12:00-1:30

Day 3 and Day 4 (half day)

Sessions 3 and 4 - Transferring Technology (Williams, Shackson, Gellman, someone to play the role of the attorney, someone to play the role of an inventor: 1:30-4:30, Day 3 and 9:00-noon, Day 4, with breaks)

This session requires "role playing" by the panel to demonstrate transferring technology. Individuals represent the following key participants in the process:

- the inventor;
- technology transfer agent (from the originating laboratory or organization);
- marketing person (from the originating laboratory or organization);
- patent/licensing attorney (from the originating laboratory or organization); and
- industry person (receiving the technology).

It is assumed that the laboratory is the originating organization. Consequently, this session is approached primarily from the perspective of laboratory management planning a transfer strategy.

Lunch: 12:00-1:30

Course participants would be told in the Monday morning introduction session that the information presented in the first two days would provide background for the transfer cases that would be discussed on Wednesday afternoon and Thursday morning. At the end of the Tuesday sessions, participants would be given an information packet providing background on the cases to be discussed. Background information would include historical and market information. Participants would be asked to think about how they would handle various aspects of the transfer process. Questions would be posed to guide their thinking. The intention is to elicit participation in sessions 3 and 4.

Two case studies (one on Wednesday afternoon and one Thursday morning) will be presented and **worked through** the transfer and innovation process by the panel. One case should involve the transfer of software; the second should focus on the transfer of "hard" technology. The cases will be based on real situations, for which we have some market information and know the actual outcome; however, some details may be changed in order to illustrate specific points or to protect proprietary information. Attempts will be made to elicit audience participation in the session. Decisions will have to be made throughout the session, and hopefully the audience will make suggestions as to what should be done and why. However, the panel will be prepared to conduct this session without audience participation, if necessary.

Specific points that need to be made and topics that need to be covered include:

- identifying the technology
- identifying other applications for the technology
- assessing stage of development (within the innovation process)
- gathering of preliminary market information to estimate commercial potential; make decisions as to whether to protect and if so, how to protect. (Here can discuss reasons to patent or not to patent; whether to file for foreign patent(s), and if so, where.) Can also discuss that publication should be withheld until patent applications, if any, are filed
- issue of whether lab wants to put some money into further development, so lab will have some claim to the product developed; or whether to seek a cooperating company to pay for or do all the development work (either by paying lab people to develop or by sending people in to work with lab people to develop, or both)
- deciding transfer and commercialization strategy: what types of companies might be interested in participating in development and in licensing the product; how many are out there (where are they located; where do they sell; how large are they, etc.)

participation, if necessary

- Valuing the technology. More detailed market information is gathered and discussion on market information takes place. Need to determine what products may compete; what companies make these products; what are annual sales in this or related products; what is demand now and projected; is demand expected to continue to increase and why or why not; estimate the product's market share now and projected
- Choose company or companies to approach. Develop strategy for approaching them. Is secrecy agreement needed? Are they likely to sign one?
- Pricing and negotiating with the company -- R&D plan (industry stresses market criteria as part of design), publication, exclusive vs. nonexclusive, expectations of each party, funding, fees, and royalties
- Final outcome

NOTE: The issues involved in the licensing of software as opposed to "hard" technologies should be brought up in the software example. Issues related to the transfer of technology developed in a government laboratory to an overseas company should be discussed in the example on the transfer of a "hard" technology.

Proposed examples are: (1) literacy software; and (2) soft denture liner.

POINTS OF DISCUSSION ON LEAD AGENCY

1. Serve as CUFT under Section 11 of Stevenson-Wydler-Strire. . .to transfer Federally owned or orginated technology to state and local Governments and to the private sector -- coordinate the activities of the offices of Research and Technology Applications of the Federal laboratories -- serve as a central clearinghouse for the collection, dissemination and transfer of information on Federally owned or originated technologies having potential. . . .

   Seems clear that this is aimed at patents as well as information because of ownership terminology -- also seems clear that this is aimed at patent licensing because of transfer terminology.

   Could try to end agency licensing efforts on basis of this authority and poor showing by agencies ------?

2. Establish close ties with University Technology Transfer Offices in compliance with Section 6 of Stevenson-Wydler Univeristy Technology Transfers offices perform virtually all the functions listed.

3. Establish an appropriate screening system to identify Government owned inventions on which patent applications should be filed. This will require a uniform criteria and a uniform invention report form providing answers to common questions. Purpose -- reduce load on PTO and reduce unnecessary filing.

4. Formulate uniform copyright policy (Aid in drafting FAR) - GPO Rule 38.

5. Formulate uniform policy on technical data. (Aid in drafting FAR)

6. Aid in drafting implementing regulations for S.1657/

7. Aid in drafting implementing regulations for S.881.

8. Revise President's memorandum on patent policy if S.1657 bogs down.

9. Revision of FOIA.

10. Reverse Herbert Hooper case (award to low bidder notwithstanding valid patent.

11. Review FFRDC practices on licensing patents.

12. Develop policy on Government employee inventions.

applications should be filed. This will require

Draft

	Start -Up And Completion Date
1. Development of Policy on Consolidating and Expanding quasi-public program to aid inventors and small business in testing the initial feasibility of their inventions.	
a. Determination of whether 9(a) of Small Business Act can be used as authority for 1.	
2. Strengthening the Patent System	
a. Establishment of a single specialized Federal court to handle all patent cases.	
b. Restoration of patent life lost during period in which patent holder is seeking pre-market clearance of patented product.	
c. Establishment of an independent patent and trademark office.	
d. Monitoring regulations on re-examination of patents section of P.L. 96-517.	
e. Participation in OTA Study on the effect of patent system on small business.	
f. Monitoring revision of Paris Convention on International Patent System.	
g. Establishment of a policy on agency use of 28 U.S.C. 1498 as authority to infringe patents subject only to payment of reasonable royalties on a finding of infringement by the U.S. Court of Claims.	
3. S.B.A. programs and actions intended to aid individuals and small business through the innovative process.	
a. Monitoring research undertaken by newly funded small business development centers.	
b. Completion and implementation of SBA-NASA Interagency Patent Agreement.	
c. Negotiation of interagency agreement with DOE's Energy Related Inventions program.	

	Start-Up and Completion Date
d. Coordinate various inventor aid programs, i.e., SBA A.P.L.A.	
e. Redraft of "Ideas Into Dollars".	
4. Legislation to enhance the climate for innovation.	
a. Establishment of a Government Patent Policy covering disposition of inventions made with Government support by contractors other than small business and universities.	
b. Special tax write offs for businesses that invest in university research.	
c. Drafting regulations on P.L. 96-517 section covering disposition of inventions made by universities and small businesses in performance of Government funded R & D.	
d. Set-up hearings on ownership of Government employee inventions.	
5. Monitoring Commerce Programs on Innovation	
a. Monitoring implementation of Stevenson-Wydler Technology Act.	
b. Monitoring of Department of Commerce Generic Technology Program.	
c. Monitoring of Department of Commerce centers for innovation development.	
d. Review of Israel-U.S. joint invention development program.	
6. Advocacy of opening entire N.I.H. and N.S.F. Grant Programs to small business participation.	
7. Advocacy of a program to develop significant drugs with little commercial value with small business set-aside.	

	Start-Up And Completion Date
8. Problems with protection of Intellectual Property other than patents. a. Revision of Freedom of Information Act to protect proprietary information submitted to the Government for various purposes. b. Development of theory on protection of computer programs.	
9. Service on Interagency Patent Committee.	

Paper 5

INCREASED COMMERCIALIZATION OF FEDERALLY FUNDED RESEARCH AND DEVELOPMENT

Issue

The Federal Government operates many laboratories, employs contractors to operate many more, and provides extensive funding for research performed outside the Government. The result is a continuing stream of new knowledge and technology. The extent to which the new knowledge and technology is converted into commercially useable products and processes depends in part upon the legal rights conveyed by participation in Federally-funded R&D and in part upon the ease of access to the knowledge and technology generated by Federally-funded projects. For a host of legal and institutional reasons, the transfer of knowledge and technology from Government to the private sector is not uniformly effective or rapid. How, therefore, can technology developed through Federally-funded R&D be better used to stimulate private sector activity while, simultaneously, reducing the cost to Government of technology transfer and patent operations?

Objectives

- Remove inconsistencies in statutes and administrative policies governing ownership of inventions and technical data generated by contractors (including those operating government-owned laboratories) in performance of Federally-funded research and development,

- Assign authority to a lead agency to develop and administer a uniform technology transfer system that functions through designated agency transfer officials.

Analysis

Experience has shown that firms will invest in development and commercialization of an invention only if they are assured of some form of intellectual property protection. The Government is moving toward allowing contractors to own an increasing number of inventions resulting from R&D funding. If this policy is successful, a major portion of the federally-funded technology produced under contract will automatically be transferred to the private sector.

Although originally created to perform unique government R&D, the Federally-funded laboratories have developed a significant overlap with the private sector. To the extent that this overlap could be reduced by performance of R&D under contract in the private sector, the technology developed would come under the new intellectual property policies, a step further encouraging technology transfer to the private sector.

technical data generated by contractors (including

Notwithstanding the changes in policy in effect and proposed, a substantial volume of technology and inventions will continue to be generated by Government laboratories. There is strong evidence that several agencies with large in-house R&D operations could improve their technology transfer performance while reducing their cost of protecting intellectual property rights. Doing this will involve: shifting more R&D to contracts rather than in-house performance; reviewing and modifying the policies governing employee and contractor ownership of inventions; and establishing responsible technology transfer expertise, along the lines of recent developments at the university level.

Recent studies indicate that universities, on the average, license about 40% of the inventions they patent. Their success results primarily from two factors. First, they screen new ideas and incur patent costs only for those inventions with market potential. Second, they are increasingly concentrating responsibility and authority to transfer intellectual property rights in specialized technology transfer offices.

By contrast, Federal agencies obtain over 1000 patents a year, but the most recent data indicate that less than 5% of the Government's patents are licensed for commercial use. This comparatively poor performance appears to be based on agency failure to consolidate necessary authorities to accomplish technology transfer in a single designated office, as the universities are doing.

An Alternative

The recommendations presented below comprise an integrated system in which commercialization of the results of government-funded R&D will be substantially increased.

The Pros and Cons of the recommended system are:

Pros

- A strengthened environment for the transfer and commercialization of government-funded technology.
- Rationalization of the objectives of the Stevenson-Wydler Act.
- Reduction of the costs of obtaining intellectual property protection for government-owned technology.

Cons

- Resistance by agency officials whose authority is affected by reorganization.
- Need to gain passage of difficult and complex legislation.

Recommendations

1. The Administration should continue to seek a Presidential Memorandum that would require agencies to allow the maximum degree of contractor ownership of inventions and technical data allowed by current statutes.

2. New legislation should be prepared that would remove present statutory inconsistency and require all agencies to allow R&D contractors to own their federally-funded inventions.

3. Legislation should be proposed to give lead agency authority to develop and administer a consolidated and uniform management system for inventions and technical data developed at government-funded laboratories. This would include policies governing the establishment of Federal agency technology transfer offices, invention and technical data reporting requirements, disposition of invention ownership, evaluation of commercial potential, means of establishing intellectual property rights, and licensing and promotion of inventions and technical data covered by such rights.

4. An Executive Order should be issued directing government laboratories to begin to reduce their overlap with the private sector by shifting R&D performance from in-house to contracts, where the private sector has the capability to perform. Reporting of plans and progress should be made to the lead Federal agency for technology transfer.

12/16/82

Intellectual Property and Productivity

Introduction

Some of the most significant improvements in productivity have and will continue to come from advances in technology. The inventions, designs, technical data, and know-how that comprise a new technology are forms of intellectual property that may be of great value. This property must be effectively protected and managed if there are to be the necessary incentives for inventors, developers, investors, and manufacturers to convert the ideas into products on the market. Ten significant intellectual property issues (some reflected in proposal now pending before Congress) are:

1. Contractor ownership of Federally funded inventions.

   The Administration has consistently supported the concept of contractor ownership of inventions made with Federal support and endorsed legislation to achieve it. When the Schmitt Bill (S. 1657) became stalled in the last session of Congress, the President issued a Memorandum on Government Patent Policy. The Memorandum directs agencies, to the extent permitted by law, to allow nearly all R&D contractors to own inventions under policies that are the same or substantially the same as those applied to small businesses and nonprofit organizations under P.L. 96-157.

   The implementing regulation will be the Federal Acquisition Regulation (FAR). A draft of the patent and technical data part has been published for comment and is under review. A committee under the Federal Coordinating Council for Science, Engineering, and Technology (FCCSET) is expected to address the more significant elements of the draft.

   When issued in final, the Part 27 of FAR is scheduled to replace all existing agency patent regulations on September 30, 1983 and would thereby be the vehicle implementing the President's Memorandum, unless withdrawn.

   A related issue in part of FAR is contractor ownership of technical data, that, in addition to enhancing the incentives for commercialization, could serve at least the following purposes:

   a) Place control of the data in the hands of U.S. companies and end the free access foreign competition has to this data under present policy.

   b) Dampen the flow abroad of sensitive but unclassified data to the extent it has an identifiable commercial potential.

same of availability the same as those applied to

2. Audio/video recording.

Two bills are intended to modify the law of first sale of audio and video recordings to preclude the owners of audio and video recordings from disposing of these articles for commercial advantage by rental, lease or lending unless authorized by the copyright holder. These bills would permit the copyright holder to negotiate a royalty from purchasers who intend to rent, lease or lend recordings. This appears to be an equitable solution for copyright holders whose rate of return is adversely affected by rentals that decrease sales.

3. Protection of ornamental designs of useful articles.

This bill is intended to provide design protection under copyright principles. The protection will be obtained by simple registration rather than by the present system which requires a time consuming novelty examination. Given the prospect that the bill will afford the same degree of protection as an examination system, the bill is being reviewed in a favorable light.

4. Semi-conductor chips protection.

This bill is intended to enhance protection of semiconductor chip designs. Since a chip can be copied for about one-tenth the investment the chip originator needs to make, enhanced protection is considered important. This is particularly so in light of the rapid growth of the semiconductor industry.

5. The Drug Color Bill.

This bill is intended to permit generic drug manufacturers to use the same color coatings used by the originating manufacturer in order to enhance entry into the marketplace after the patent protection has expired. At issue is whether the drug's originator should be able to continue to capitalize on its choice of drug colors after its patent protection has ended. Generic drug manufacturers argue that this has permitted the drug's originator to unfairly retain its market position after it patent has expired..

6. Protection of Computer Software.

The National Productivity Advisory Committee (NPAC) has recommended that protection of software be enhanced in the following ways:

7. Semiconductor chips protection

a) Enact legislation to grant software authors protection under trade secret and copyright laws simultaneously.

H.R. 6983 incorporates this concept by providing that a copyright notice on a program would not constitute publication in a way that would prevent trade secret protection. It also would provide for confidential deposit of copyrighted programs so that trade secrets are not revealed.

b) Strengthen the penalties against piracy and counterfeiting of computer programs by including criminal liability in the copyright laws. Current copyright laws permit damage suits for infringement, but these are costly and time consuming. The potential for criminal penalties being imposed could strengthen the disincentives for infringement.

c) Amend the copyright law to permit a software author to copyright a detailed description of the program as well as the program itself so that protection would extend to any program written by another author following the original author's description or program.

Copyrights protect the form and not the expression. NPAC believes that the expression of computer software also should be protected. How this can be done, however, would require further study and a legislative proposal in order to determine whether the theory is viable.

7. Patent Term Restoration Legislation.

Administration supported legislation intended to restore the time lost by patentholders or its assignees in gaining Federal market clearance for their products will be shortly reintroduced. At issue is whether the time lost to patentholders in gaining market clearance acts as a disincentive to the introduction of new drugs.

8. Redefinition of computer software as R&D to qualify for R&D tax credits.

Internal Revenue Service Proposed Rule 1.174-2(a)(3) says that R&D credits would not be allowed for the development of software if its operational feasibility is not seriously in doubt. This imposes a more restrictive requirement on the development of software than is imposed on other types of development. Critic argue that the operational feasibility requirement should be deleted from the proposed rule. Further, IRS indicates that development costs for

software will not normally be treated as R&D costs, even for a novel application if it involves standard or well-known programming techniques. Such regulations can adversely affect electronics firms whose products include some software content.

9. Rights of employed inventors.

Two bills are intended to clarify the rights of employed inventors to non-service inventions. While legislation of this type may be useful in creating uniform treatment of the issue between states there is some argument as to whether these bills are the best way to do it.

10. National Innovation and Productivity Act.

The Dept. of Justice is sponsoring a bill now is in its final stages of OMB clearance, which would:

a) Make the import of foreign made products produced by processes patented in the U.S. subject to patent infringement,

b) Make five types of commercial transactions involving patents a misuse subject to penalty only if a violation of the anti-trust laws is proven,

c) Allow actions to preclude the licensing of intellectual property only if an anticompetitive effect is proven,

d) Liberalize the principles under which companies may do joint R&D, and

e) Eliminate treble damages for most civil anti-trust violations.

Prepared by: Department of Commerce
July 15, 1983

This proposed agenda is directed to current initiatives impacting on the management and introduction of new technologies or other useful articles into commerce.

1. The management and commercialization of technology resulting from federally funded research and development.

   a) Contractor ownership of federally funded inventions and the conditions attached to the management of such ownership.

      The Administration and the Cabinet Counsel have consistently supported the concept of contractor ownership of inventions made with Federal support and endorsed legislation to achieve it. When the Schmitt Bill (S. 1657) became stalled in the last session of Congress, the Department of Commerce initiated the February 18, 1983 Presidential Memorandum on Government Patent Policy. The Memorandum directs agencies, to the extent permitted by law, to allow nearly all R&D contractors to own inventions under policies that are the same or substantially the same as those applied to the small business and nonprofit organizations under P.L. 96-157.

      The President's Memorandum, was intended to direct the Patent Counsels at DOD, NASA, and Energy, who were drafting the patent section of the new government-wide Federal Acquisition Regulation (FAR). The drafters only partially followed the Memorandum and drafted the FAR to allow contractor ownership but under policies substantially different than those extended to small businesses and nonprofit organizations under P.L. 96-517.

      FAR is scheduled to replace all existing agency patent regulations on September 30, 1983 and would thereby be the vehicle implementing the President's Memorandum. The public comment period is scheduled
      The clear ownership under the current practices of some agencies would be severely clouded by conditions included in the proposed FAR. For instance under FAR, contractors must report an invention within 6 months from its conception (which is undefined), and elect rights and file a patent application within 6 months thereafter or be subject to loss of ownership if the prescribed actions are not taken within the allotted periods. The spector of loss of ownership as a penalty for late reporting within 6 months from "conception" has no precedent in present regulations. Since it is not readily feasible to report 6 months from something so unverifiable as "conception", title to many inventions will be clouded. Small business and unversities were able to eliminate a similar

provision in the development of regulations implementing P.L. 96-517 but only after vigorous opposition. There are a number of similar conditions in which performers other than small business and universities are treated in a more restrictive manner than small business and universities under P.L. 96-517.

In addition, the FAR clouds the conditions of ownership provided to small business and universities under P.L. 96-517 as it fails to comply with the implementing regulations for P.L. 96-517 which were developed in public consultation with the small business and university community.

b) Contractor ownership of federally funded technical data and the conditions attached to the management of such ownership.

In addition to the problems in the patent provisions of the FAR, the technical data provisions include a first attempt to prescribe a government-wide policy on ownership of technical data made or submitted in performance of government contracts. In most part, the section on technical data implements the policies of large procurement agencies to retain government ownership of technical data generated in the performance of such contracts. Since this policy is now being extended to all other agencies for the first time, and in light of the February 18, 1983 Presidential Memorandum endorsing contractor ownership of inventions, it appears that this is the correct time to raise the appropriateness of a general principle of government ownership of technical data. Consistency with he February 18, 1983 Presidential Memorandum suggests a reversal of such presumption of ownership in technical data.

This could be accomplished by protecting the government's interest as it is under the new patent policy, by negotiating the rights agencies need to perform this mission at the time of contracting.

Contractor ownership of technical data (subject to appropriate license rights in the agency) could serve at least the following purposes:

It would place control of the data in the hands of U.S. companies to the exclusion of foreign competition. Clearly this is a better choice than

permitting foreign competition the free access they have under present policy.

It would dampen the flow of sensitive but unclassified data to the extent it had an identifiable commercial potential.

c. Management of government-owned technology produced in federal laboratories.

The Packard, the Business-Higher Education and the Energy Research Advisory Board (ERAB) Reports all recommend sweeping improvements in the way Federal laboratories cooperate and collaborate with industry. All the reports call for increased transfer of technology resulting from laboratory efforts.

It is Commerce's view that enhanced transfer of technology must begin with establishment of focal points at laboratories with the authority to make "deals" with industry to fund the continued development of new products and processes they have evaluated to have commercial potential.

The laboratory authority should include at least the ability to:

- Identify, evaluate an protect new technologies,
- Promote commercial use of the new technologies laboratories produce,
- Initiate research and develop limited partnerships,
- Seek venture capital,
- Enter into collaborative research protects,
- Establish policies encouraging employee-inventor startups,
- Share royalties with inventors,
- Assess potential conflicts of interest, and
- Grant patent licenses or assign invention ownership rights as a quid pro quo for private sector guarantees to develop, participate in or contribute resources to further development.

To the extent that the government has some of these authorities, they have not been delegated to the laboratory management most knowledgeable with the new technology. The centralization of existing authorities have acted as a substantial disincentive to optimum technology transfer.

d) The responsibility and process for review of FAR.

The draft FAR appears to the public as a statement of the Administration's policies toward commercialization of new technologies developed by Federal R&D contractors, but they are at odds with the Administration's stated position. At present, there is neither an organization nor a process for reviewing the regulations that could lead to corrective action. Present plans call for review of the regulations and public comments on them by agency patent and procurement staffs. But the terms of contractor ownership are not procurement issues, and patent and procurement staffs do not necessarily understand the business, economic, and international competitiveness implications of various alternative patent and technical data ownership policies.

e) Legislation extending contractor ownership to all performers.

P.L. 96-517 allows small businesses and nonprofit organizations to own inventions they produce with Federal R&D funds. An Administration supported bill to extend the right of ownership to all contractors (including operators of Government-owned laboratories) was not enacted in the last Congress, and a similar bill is being introduced now. There is no proposed legislation that deals directly with the issues of technical data and technology management in the Government-operated laboratories.

A statute that addresses all three subjects could be a clean and systematic way to handle them but there has been no signficant public discussion of the alternative ways to handle the technical data issue. Inclusion of the data ownership issue with contractor ownership legislation could delay the whole package.

Provisions for improving laboratory management of government-owned technology might be resisted by several federal agencies, but public resistance is not likely.

It is important to note that the patent provisions of the proposed FAR conflict with the Administration supported bill on contractor-ownership that died in the last session. If the FAR is left unchanged and the same bill reintroduced (which is likely), agency

organizations to own inventions they produce with

review will result in a recommendation that the bill not be endorsed or be endorsed with changes that make the bill consistent to FAR.

2. Actions intended to enhance intellectual property protection for new technologies on other useful articles.

a) S. 32, "The Record Rental Amendment of 1983" and S. 33, "The Consumer Video Sales/Rental Amendment of 1983" are intended to modify the law of first sale of audio and video recordings to preclude the owners of audio and video recordings from disposing of these articles for commercial advantage by rental, lease or lending unless authorized by the copyright holder. These bills would permit the copyright holder to negotiate a royalty from purchasers who intend to rent, lease or lend recordings. This appears to be an equitable solution for copyright holders whose rate of return is adversely affected by rentals which decrease sales. Endorsement should be considered.

b) H.R. 2985, "To amend the copyright law to provide for protection of ornamental designs of useful articles", is intended to provide design protection under copyright principles. The protection will be obtained by simple registration rather than by the present system which requires a time consuming novelty examination. Given the prospect that H.R. 2985 will afford the same degree of protection as an examination system, endorsement should be considered.

c) S. 1201, "Semi Conductor Chip Protection Act of 1983", is intended to enhance protection of semiconductor chip designs. Endorsement should be considered. However, the bill includes a compulsory licensing provision that have been traditionally considered a negative factor in any legislation establishing intellectual property protection as an incentive to develop.

d) H.R. 3320 - The Drug Color Bill is intended to permit generic drug manufacturers to use the same color coatings used by the originating manufacturer in order to enhance entry into the marketplace after the patent protection has expired. It is inequitable to eliminate the market position gained by a drug's originator through fair advertising techniques. Endorsement is not recommended.

e) Current law permits the foreign manufacture and import of inventions using processes patented in the U.S. without liability. The Department of Justice is currently circulating for comment legislation that would make such imports subject to patent infringement.

f) Legislation should be considered to overrule the holding of the Deep South Packing case. This holds that the foreign assembly of an invention patented in the U.S. and whose parts are manufactured in the U.S. is not an infringement. This is an unequitable decision that should not be permitted to stand as a precedent.

g) Legislation should be considered to mitigate the harshness of the elimination of the licensee estoppel doctrine by the Lear vs Adkins case. Under this case a licensee who challenges the validity of a license agreement is no longer responsible for the payment of royalties during the pendency of its challenge. This decision has created severe hardship on patent holders and should be remedied.

h) The National Productivity Advisory Committee (NPAC) has recommended that protection of software be enhanced in the following ways:

1) Enact legislation to grant software authors protection under trade secret and copyright laws simultaneously.

H.R. 6983 incorporates this concept by providing that a copyright notice in a program would not constitute publication in a way that would prevent trade secret protection. It also would provide for confidential deposit of copywritten programs so that trade secrets are not revealed. Endorsement should be considered.

2) Strengthen the penalties against piracy and counterfeiting of computer programs by including criminal liability in the copyright laws. Current copyright laws permit damage suits for infringement, but these are costly and time consuming. The potential for criminal penalties being imposed could strengthen the disincentives for infringement.

3) Amend the copyright law to permit a software author to copyright a detailed description of the

program as well as the program itself so that protection would extend to any program written by another author following the original author's description or program.

Copyrights protect the form and not the expression. NPAC believes that the expresion of computer software also should be protected. How this can be done, however, would require further study and a legislative proposal in order to determine whether the theory is viable.

i) Patent Term Restoration Legislation.

Administration supported legislation intended to restore the time lost by patentholders or its assignees in gaining Federal market clearance for their products will be shortly reintroduced after being stymied by a coalition of consumer advocates and generic drug manufacturers in the last Congress. Passage of the reintroduced bill will clearly be dependent on strong Administration support.

3. The management and commercialization of technology resulting from privately funded research and development.

a) Redefinition of computer software as R&D to qualify for R&D tax credits. Internal Revenue Service Proposed Rule 1.174-2(a)(3) says that R&D credits would not be allowed for the development of software if its operational feasibility is not seriously in doubt. This imposes a more restrictive requirement on the development of software than is imposed on other types of development. The operational feasibility requirement should be deleted from the proposed rule. Further, IRS indicates that development costs for software will not normally be treated as R&D costs, even for a novel application if it involves standard or well-known programming techniques. The regulations adversely affect electronics firms whose products include some software content.

b) H.R. 3284 and H.R. 3285 are intended to clarify the rights of employed inventors of non-service inventions. While legislation of this type may be useful in eliminating conflicting state laws, review indicates that the treatment of the issue by North Carolina and other states is more desirable than that of these bills. Endorsement is not recommended.

c) The inadequacy of B(4) exemption of the Freedom of Information Act (FOIA) in protecting privately developed technical data required to be delivered in performance of Federal contracts.

The Business-Higher Education Report specifically recommends that this problem be addressed. The fourth exemption of FOIA permits agencies to freedom of information requests for information that are:

"trade secrets and commercial or financial information obtained from a pension and priviliged or confidential."

Unfortunately, the application of this exemption by the agencies and the courts has been so uneven that the Justice Department has testified that government protection of intellectual property and its withholding under the exemption is totally unpredictable.

The leading case on the fourth exemption, National Parks and Conservation Association v. Morton, 498 Fed. 765 (1974), D.C. Circuit Court, states that the fourth exemption applies if it could be shown that disclosure was either likely, first, to impair the Government's ability to obtain necessary information or second, to cause substantial harm to a competitive position of a person providing the information.

The unpredictability is due primarily to the fact that agency withholding has been left to a case-by-case determination of the harm anticipated to the information submitter if the information is released.

Case-by-case determination could be eliminated for the category of privately developed technical data under contract by simply applying the first test of the National Parks case. The first test provides to the government the right to establish a government-wide policy to protect privately developed technical data submitted on the basis that to do otherwise "will impair the government's ability to obtain necessary information."

The appropriate place to institute this policy is in the technical data provisions of the proposed FAR. Given such an instruction and a contractual commitment in FAR that privately developed technical data submitted in performance of contract is not

releaseable, agency Freedom of Information officers would no longer be required to determine, "substantial harm" on a case-by-case basis. The FAR as drafted perpetuates and compounds the already identified problem in this area by making it appear that case-by-case determination is the only approach available to agencies.

UNIVERSITY AND FEDERAL LABORATORY INNOVATION AND TECHNOLOGY TRANSFER AWARENESS

The law now allows universities to own inventions that result from Federal R&D funding. Many universities have not yet developed or are not aware of the value of strong internal programs for managing inventions. Further, many researchers have not been made aware of the importance of identifying and reporting inventions. The same conditions exist in many Federal laboratories.

We propose to fund a cooperative agreement with Research Corp. to develop and run an innovation education program for universities--presidents, faculty, and key staff. It will show how smart management of inventions can lead to more university income and aid the nation's economy. It will cover a broad range of technology transfer techniques, such as patent licensing, limited partnerships, equity in startup firms, and private sector funding of research. Preliminary discussions with Research Corp have led to the conclusion that a first year effort should consist of developing the program and running it for ten universities on an experimental basis. Criteria for selecting the test universities would include existenct of a State high technology program. A similar program will be developed for Federal laboratories. First year funding should be $80,000.

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transfer techniques, such as patent licensing, limited partnerships, equity in

EFFECTIVE UTILIZATION OF INTELLECTUAL PROPERTY BY THE PRIVATE SECTOR

ISSUE: A significant portion of federally funded R&D ($40 billion in 1983) has commercial potential but is never exploited by the private sector. Other nations have learned that they can acquire and exploit this enormous resource (for example, the ceramic engine being developed in Japan is based on heat-shield technology from the U.S. space program). An important issue is to remove barriers to, and provide incentives for, more effective utilization of intellectual property by the private sector, but without direct intervention by the government in the private sector.

- Exclusive grantback of inventions and retention of technical data by contractors for federally funded work carried out in private sector laboratories.
- Systematic screening of technology developed in government labs for commercial viability, followed by selective patenting based on commercial value.
- Integration (by area of industrial application) of government technology into prototype business plans and patent portfolios for licensing to private sector firms and consortia of firms (CUFT).
- Encouragement of private sector formation of R&D limited partnerships to effectively fund development and commercially exploit government technology.
- Provision for increased tax incentives for development of early-stage high-risk technology.
- Redefinition of R&D to include software development; trade secret and copyright protection for software programs; criminal liability for piracy and conterfeiting also should be considered.

- Modification of the federal regulations to state that privately developed technical data submitted in performance of a contract is not releasable, in order to prevent competitors from gaining free access to proprietary information.

- Legislation to prevent foreign manufacture and import into the U.S. of products based on processes patented in the U.S.; Also legislation to disallow import of inventions patented in the U.S. and using U.S.-manufactured components but assembled outside the U.S.

- Endorsement of currently introduced bills to:

  - Preclude "home recordings" from being commercially exploited without authorization of the copyright holder. (S. 32 and S. 33)

  - Provide protection for ornamental designs of useful articles (H.R. 2989) under copyright law.

  - Enhance protection of semi-conductor chip designs (S. 1201) but eliminating the compulsory licensing provision.

  - Restoration of patent terms to restore the time lost in obtaining government clearance to market products.

Potential Action Items:

1) Create a process for policy level review of the Federal Acquisition Regulations (FAR) which will assure provision of the incentives for achieving the above objectives;

2) Develop proposed legislation for other areas where that is required, e.g. contractor ownership of inventions; and

3) Establish an interagency committee on utilization of intellectual property to monitor the implementation of the above objectives.

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Title of Project

Technology Transfer from the Federal Laboratories

Agency Name: EA/OPTI

Prepared by: Tip Parker

Description:

DOC Strategic Objective: Stimulate Productivity, Economic Recovery, and Growth (Promote the development and application of science and technology in U.S. business and industry), II-K.

Value/Benefits: The Federal laboratories have, and will continue to produce some of the most advanced and potentially useful technology in the world. By directing this flow toward the domestic industries that can convert it into new products, industries, and jobs, the labs can become major contributors to the country's growth and international competitive standing. Exposure of the labs to the needs of industry will also have the effect of causing their research programs to incline toward market needs. A self-reinforcing loop can be expected to result, where both industry and the labs tend to guide eachother to the national benefit.

Significance: The Government annually funds $6-8 billion in research performed in about 700 Federal laboratories. Numerous studies have all found that too little of the technology they develop is transferred to the private sector for commercial use by domestic firms, while foreigh firms frequently use U.S. funded developments in world competition. Steps taken so far, include some implementation of the Stevenson-Wydler Act by the agencies, creation of the Center for Utilization of Federal Technology (CUFT), and the NTIS Patent Licensing Program. Far more needs to be done.

Proposed Solution: During FY-83, OPTI has been identifying the problems of transferring technology from the Federal laboratories, and developing solutions. A plan for managing Federally developed technology has been drafted and is undergoing a continuing series of outside reviews. The grant to the University of Illinois is producing descriptions of present transfer barriers and methods of evaluating the commercial potential of new technologies.

By the end of FY-85, we plan to have:

° Changed existing policies so that the contractor operators of the Government-owned, contractor-operated laboratories (GOCOs) may retain title to inventions they produce. This is part of the present effort to attain ownership rights for all R&D contractors.

In about 700 Federal laboratories. Numerous studies have all found that too

° Installed in the agencies, a system for managing and promoting commercial use of new technologies developed in the Government-operated laboratories, that includes:

- Forms of institutional incentives that encourage/reward industry cooperation and transfer for domestic private sector use, reversing present disincentives.

- Coordination of activities of the Stevenson-Wydler Technology Transfer Offices and Agency Patent Staffs, with clearly identified points of authority to make transfer deals.

- Techniques for evaluating the potential commercial value of new technologies and inventions.

- Incentives for Federal employee inventors.

° Started 10 ventures that involve significant levels of cooperation between Federal laboratories and domestic industries.

Resources:

FY 1984		FY 1985		FY 1986 -?	
Staff Years	Amount	Staff Years	Amount	Staff Years	Amount
2 FTE	$200,000	4 FTE	$500,000	2 FTE	$200,000

This proposed agenda is directed to current initiatives impacting on the management and introduction of new technologies or other useful articles into commerce.

1. The management and commercialization of technology resulting from federally funded research and development.

   a) Contractor ownership of federally funded inventions and the conditions attached to the management of such ownership.

      The Administration and the Cabinet Counsel have consistently supported the concept of contractor ownership of inventions made with Federal support and endorsed legislation to achieve it. When the Schmitt Bill (S. 1657) became stalled in the last session of Congress, the Department of Commerce initiated the February 18, 1983 Presidential Memorandum on Government Patent Policy. The Memorandum directs agencies, to the extent permitted by law, to allow nearly all R&D contractors to own inventions under policies that are the same or substantially the same as those applied to the small business and nonprofit organizations under P.L. 96-157.

      The President's Memorandum, was intended to direct the Patent Counsels at DOD, NASA, and Energy, who were drafting the patent section of the new government-wide Federal Acquisition Regulation (FAR). The drafters only partially followed the Memorandum and drafted the FAR to allow contractor ownership but under policies substantially different than those extended to small businesses and nonprofit organizations under P.L. 96-517.

      FAR is scheduled to replace all existing agency patent regulations on September 30, 1983 and would thereby be the vehicle implementing the President's Memorandum. the public comment period is scheduled
      The clear ownership under the current practices of some agencies would be severely clouded by conditions included in the proposed FAR. For instance under FAR, contractors must report an invention within 6 months from its conception (which is undefined), and elect rights and file a patent application within 6 months thereafter or be subject to loss of ownership if the prescribed actions are not taken within the allotted periods. The spector of loss of ownership as a penalty for late reporting within 6 months from "conception" has no precedent in present regulations. Since it is not readily feasible to report 6 months from something so unverifiable as "conception", title to many inventions will be clouded. Small business and unversities were able to eliminate a similar

drafting the patent section of the

provision in the development of regulations implementing P.L. 96-517 but only after vigorous opposition. There are a number of similar conditions in which performers other than small business and universities are treated in a more restrictive manner than small business and universities under P.L. 96-517.

In addition, the FAR clouds the conditions of ownership provided to small business and universities under P.L. 96-517 as it fails to comply with the implementing regulations for P.L. 96-517 which were developed in public consultation with the small business and university community.

b) Contractor ownership of federally funded technical data and the conditions attached to the management of such ownership.

In addition to the problems in the patent provisions of the FAR, the technical data provisions include a first attempt to prescribe a government-wide policy on ownership of technical data made or submitted in performance of government contracts. In most part, the section on technical data implements the policies of large procurement agencies to retain government ownership of technical data generated in the performance of such contracts. Since this policy is now being extended to all other agencies for the first time, and in light of the February 18, 1983 Presidential Memorandum endorsing contractor ownership of inventions, it appears that this is the correct time to raise the appropriateness of a general principle of government ownership of technical data. Consistency with he February 18, 1983 Presidential Memorandum suggests a reversal of such presumption of ownership in technical data.

This could be accomplished by protecting the government's interest as it is under the new patent policy, by negotiating the rights agencies need to perform this mission at the time of contracting.

Contractor ownership of technical data (subject to appropriate license rights in the agency) could serve at least the following purposes:

It would place control of the data in the hands of U.S. companies to the exclusion of foreign competition. Clearly this is a better choice than

performance of government contracts. In most part,

permitting foreign competition the free access they have under present policy.

It would dampen the flow of sensitive but unclassified data to the extent it had an identifiable commercial potential.

c. Management of government-owned technology produced in federal laboratories.

The Packard, the Business-Higher Education and the Energy Research Advisory Board (ERAB) Reports all recommend sweeping improvements in the way Federal laboratories cooperate and collaborate with industry. All the reports call for increased transfer of technology resulting from laboratory efforts.

It is Commerce's view that enhanced transfer of technology must begin with establishment of focal points at laboratories with the authority to make "deals" with industry to fund the continued development of new products and processes they have evaluated to have commercial potential.

The laboratory authority should include at least the ability to:

- Identify, evaluate an protect new technologies,
- Promote commercial use of the new technologies laboratories produce,
- Initiate research and develop limited partnerships,
- Seek venture capital,
- Enter into collaborative research protects,
- Establish policies encouraging employee-inventor startups,
- Share royalties with inventors,
- Assess potential conflicts of interest, and
- Grant patent licenses or assign invention ownership rights as a quid pro quo for private sector guarantees to develop, participate in or contribute resources to further development.

To the extent that the government has some of these authorities, they have not been delegated to the laboratory management most knowledgeable with the new technology. The centralization of existing authorities have acted as a substantial disincentive to optimum technology transfer.

d) The responsibility and process for review of FAR.

The draft FAR appears to the public as a statement of the Administration's policies toward commercialization of new technologies developed by Federal R&D contractors, but they are at odds with the Administration's stated position. At present, there is neither an organization nor a process for reviewing the regulations that could lead to corrective action. Present plans call for review of the regulations and public comments on them by agency patent and procurement staffs. But the terms of contractor ownership are not procurement issues, and patent and procurement staffs do not necessarily understand the business, economic, and international competitiveness implications of various alternative patent and technical data ownership policies.

e) Legislation extending contractor ownership to all performers.

P.L. 96-517 allows small businesses and nonprofit organizations to own inventions they produce with Federal R&D funds. An Administration supported bill to extend the right of ownership to all contractors (including operators of Government-owned laboratories) was not enacted in the last Congress, and a similar bill is being introduced now. There is no proposed legislation that deals directly with the issues of technical data and technology management in the Government-operated laboratories.

A statute that addresses all three subjects could be a clean and systematic way to handle them but there has been no signficant public discussion of the alternative ways to handle the technical data issue. Inclusion of the data ownership issue with contractor ownership legislation could delay the whole package.

Provisions for improving laboratory management of government-owned technology might be resisted by several federal agencies, but public resistance is not likely.

It is important to note that the patent provisions of the proposed FAR conflict with the Administration supported bill on contractor-ownership that died in the last session. If the FAR is left unchanged and the same bill reintroduced (which is likely), agency

organizations to own inventions they produce with

review will result in a recommendation that the bill not be endorsed or be endorsed with changes that make the bill consistent to FAR.

2. Actions intended to enhance intellectual property protection for new technologies on other useful articles.

a) S. 32, "The Record Rental Amendment of 1983" and S. 33, "The Consumer Video Sales/Rental Amendment of 1983" are intended to modify the law of first sale of audio and video recordings to preclude the owners of audio and video recordings from disposing of these articles for commercial advantage by rental, lease or lending unless authorized by the copyright holder. These bills would permit the copyright holder to negotiate a royalty from purchasers who intend to rent, lease or lend recordings. This appears to be an equitable solution for copyright holders whose rate of return is adversely affected by rentals which decrease sales. Endorsement should be considered.

b) H.R. 2985, "To amend the copyright law to provide for protection of ornamental designs of useful articles", is intended to provide design protection under copyright principles. The protection will be obtained by simple registration rather than by the present system which requires a time consuming novelty examination. Given the prospect that H.R. 2985 will afford the same degree of protection as an examination system, endorsement should be considered.

c) S. 1201, "Semi Conductor Chip Protection Act of 1983", is intended to enhance protection of semiconductor chip designs. Endorsement should be considered. However, the bill includes a compulsory licensing provision that have been traditionally considered a negative factor in any legislation establishing intellectual property protection as an incentive to develop.

d) H.R. 3320 - The Drug Color Bill is intended to permit generic drug manufacturers to use the same color coatings used by the originating manufacturer in order to enhance entry into the marketplace after the patent protection has expired. It is inequitable to eliminate the market position gained by a drug's originator through fair advertising techniques. Endorsement is not recommended.

[illegible] to provide design protection under

e) Current law permits the foreign manufacture and import of inventions using processes patented in the U.S. without liability. The Department of Justice is currently circulating for comment legislation that would make such imports subject to patent infringement.

f) Legislation should be considered to overrule the holding of the Deep South Packing case. This holds that the foreign assembly of an invention patented in the U.S. and whose parts are manufactured in the U.S. is not an infringement. This is an unequitable decision that should not be permitted to stand as a precedent.

g) Legislation should be considered to mitigate the harshness of the elimination of the licensee estoppel doctrine by the Lear vs Adkins case. Under this case a licensee who challenges the validity of a license agreement is no longer responsible for the payment of royalties during the pendency of its challenge. This decision has created severe hardship on patent holders and should be remedied.

h) The National Productivity Advisory Committee (NPAC) has recommended that protection of software be enhanced in the following ways:

1) Enact legislation to grant software authors protection under trade secret and copyright laws simultaneously.

H.R. 6983 incorporates this concept by providing that a copyright notice in a program would not constitute publication in a way that would prevent trade secret protection. It also would provide for confidential deposit of copywritten programs so that trade secrets are not revealed. Endorsement should be considered.

2) Strengthen the penalties against piracy and counterfeiting of computer programs by including criminal liability in the copyright laws. Current copyright laws permit damage suits for infringement, but these are costly and time consuming. The potential for criminal penalties being imposed could strengthen the disincentives for infringement.

3) Amend the copyright law to permit a software author to copyright a detailed description of the

program as well as the program itself so that protection would extend to any program written by another author following the original author's description or program.

Copyrights protect the form and not the expression. NPAC believes that the expresion of computer software also should be protected. How this can be done, however, would require further study and a legislative proposal in order to determine whether the theory is viable.

i) Patent Term Restoration Legislation.

Administration supported legislation intended to restore the time lost by patentholders or its assignees in gaining Federal market clearance for their products will be shortly reintroduced after being stymied by a coalition of consumer advocates and generic drug manufacturers in the last Congress. Passage of the reintroduced bill will clearly be dependent on strong Administration support.

3. The management and commercialization of technology resulting from privately funded research and development.

a) Redefinition of computer software as R&D to qualify for R&D tax credits. Internal Revenue Service Proposed Rule 1.174-2(a)(3) says that R&D credits would not be allowed for the development of software if its operational feasibility is not seriously in doubt. This imposes a more restrictive requirement on the development of software than is imposed on other types of development. The operational feasibility requirement should be deleted from the proposed rule. Further, IRS indicates that development costs for software will not normally be treated as R&D costs, even for a novel application if it involves standard or well-known programming techniques. The regulations adversely affect electronics firms whose products include some software content.

b) H.R. 3284 and H.R. 3285 are intended to clarify the rights of employed inventors of non-service inventions. While legislation of this type may be useful in eliminating conflicting state laws, review indicates that the treatment of the issue by North Carolina and other states is more desirable than that of these bills. Endorsement is not recommended.

c) The inadequacy of B(4) exemption of the Freedom of Information Act (FOIA) in protecting privately developed technical data required to be delivered in performance of Federal contracts.

The Business-Higher Education Report specifically recommends that this problem be addressed. The fourth exemption of FOIA permits agencies to freedom of information requests for information that are:

"trade secrets and commercial or financial information obtained from a pension and priviliged or confidential."

Unfortunately, the application of this exemption by the agencies and the courts has been so uneven that the Justice Department has testified that government protection of intellectual property and its withholding under the exemption is totally unpredictable.

The leading case on the fourth exemption, National Parks and Conservation Association v. Morton, 498 Fed. 765 (1974), D.C. Circuit Court, states that the fourth exemption applies if it could be shown that disclosure was either likely, first, to impair the Government's ability to obtain necessary information or second, to cause substantial harm to a competitive position of a person providing the information.

The unpredictability is due primarily to the fact that agency withholding has been left to a case-by-case determination of the harm anticipated to the information submitter if the information is released.

Case-by-case determination could be eliminated for the category of privately developed technical data under contract by simply applying the first test of the National Parks case. The first test provides to the government the right to establish a government-wide policy to protect privately developed technical data submitted on the basis that to do otherwise "will impair the government's ability to obtain necessary information."

The appropriate place to institute this policy is in the technical data provisions of the proposed FAR. Given such an instruction and a contractual commitment in FAR that privately developed technical data submitted in performance of contract is not

releaseable, agency Freedom of Information officers would no longer be required to determine, "substantial harm" on a case-by-case basis. The FAR as drafted perpetuates and compounds the already identified problem in this area by making it appear that case-by-case determination is the only approach available to agencies.

TECHNOLOGY TRANSFER FROM THE FEDERAL LABORATORIES

STRATEGIC OBJECTIVE OF THE DEPARTMENT

Promote the development and application of science and technology in U.S. business and industry

PROBLEM

The Government annually funds $6-8 Billion in research performed in about 700 Federal laboratories. Numerous studies of these laboratories all have found that too little of the technology they develop is transferred to the private sector for commercial use by domestic firms, while foreign firms frequently use U. S. funded devlopments in world competition. Steps taken so far include some implementation of the Stevenson-Wydler Act by the agencies, creation of the Center for Utilization of Federal Technology (CUFT), and the NTIS Patent Licensing Program. Far more needs to be done, however, to change such patterns of action as led to the sale by the Japanese, of USDA developed water desalinization technology throughout the Middle East.

PROPOSED SOLUTION

During FY-83, OPTI has been identifying the problems of transferring technology from the Federal laboratories, and developing solutions. A plan for managing Federally developed technology has been drafted and is undergoing a continuing series of outside reviews. The grant to the University of Illinois is producing descriptions of present transfer barriers and methods of evaluating the commercial potential of new technologies.

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VALUE/BENEFITS

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COST

Assuming that some of the presently assigned staff now working on patent policy will be diverted to working with the laboratories, the net increased costs will be:

2 staff members or consultants with strong technology transfer or innovation backgrounds	$120,000
Cooperative agreements, contracts, or interagency transfers to test and operate technology evaluation processes, train laboratory management and staffs, and communicate to the private sector.	180,000
	300,000

T. J. Parker 5/12/83

014-031 DRAFT 1 1/21-87

DELEGATION IMPLEMENTATION FACTORS

- Cooperative R&D Projects
  - Responsibilities and process for managing technology (e.g. determining forms technology can take and best transfer techniques)
  - Processes for evaluating projects for cooperative potential
  - Delegations within labs and approvals required
  - Processes for locating, qualifying, and selecting partners
    - Using State and local governments or universities as intermediaries
    - General announcements of cooperative R&D opportunities
    - Build agreements around patent licenses
    - Peer review or lab advisory committees to diffuse responsibilities for choice
  - Types of collaboration lab desires
    - With universities
    - With industry
  - Lab role in obtaining funds
  - Managing cooperative R&D projects
    - Decision points and rights of each party
    - Accounting for funds, property, and effort
    - Protecting technical data
    - Rights to publish
    - Ensuring lab performance per agreement
    - Ensuring partner performance per agreement
  - Product liability

- Employee Inventions
  - Employee inventor policy statement
  - Current and valid employment agreement
  - Educating lab employees -- invention awareness
  - Invention report form
  - Identified official for invention reports and inventor relations
  - Flow and procedures for evaluating invention reports
  - Patent attorney support -- particularly outside of DC
  - Invention evaluation process
  - Coordination of publications with patenting
  - Protecting technical data and software
  - General plans for commercializing inventions
  - Lab involvement in export control
  - Agreements for patent management services like NTIS
  - Selecting type of license for specific inventions (e.g. exclusive, field of use, geographic, nonexclusive)
  - Locating and qualifying potential licensees
  - Assisting small business startups
  - License options

Ensuring lab performance per agreement