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United States Senate

COMMITTEE ON COMMERCE, SCIENCE,
AND TRANSPORTATION

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Washington, D.C., 7/24, 1979

Referred to Howard W. Bremer

Testimony on S. 1215

7/23

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1 STATEMENTS OF MR. HOWARD W. BREMER, PATENT COUNSEL,
2 WISCONSIN ALUMNI RESEARCH FOUNDATION; AND DR. WILLARD
3 MARCY, VICE PRESIDENT, RESEARCH CORPORATION.

4 Senator Schmitt. Mr. Bremer, will you proceed first,
5 please.

6 Mr. Bremer. Yes. Thank you very much.

7 I appreciate the opportunity to participate in these
8 hearings and present the views of academia. My remarks
9 today are made on behalf of the University of Wisconsin, the
10 American Council on Education which is the largest
11 association of colleges and universities in the nation, the
12 Committee on Government Relations of the National
13 Association of College and University Business Officers, and
14 the Society of the University Patent Administrators.

15 I have been engaged in the transfer of technology from
16 the University of Wisconsin for the past 19 years as patent
17 counsel for the Wisconsin Alumni Research Foundation, which
18 foundation functions as the invention and patent
19 administration arm of the University of Wisconsin, and I
20 have drawn upon that experience and the experience of
21 numerous colleagues of mine who have been similarly engaged
22 for these remarks.

23 I might add at this point that part of that experience
24 also involved an adamant position by the Department of the
25 Interior on ^{an} ~~the~~ ore processing invention which discouraged

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1 ~~university and~~ commercial participation.

2 Fundamental to the position of the university community
3 with regard to the disposition of property rights resulting
4 from research and development activities sponsored and
5 funded in whole or in part by the Federal Government are
6 certain strong beliefs which have been amply reinforced by
7 the experience of many years. ^{Among these} are the following:

8 One, that the patent system, imperfect though it may be,
9 is the key to the conversion of scientific knowledge into
10 production benefitting human welfare,

11 Two, that, as stated by Chief Judge Markey of the CCPA,
12 no institution has done so much for so many with so little
13 public and judicial understanding as has the American patent
14 system.

15 ^{ree} There, that the basic consideration in the disposition
16 of intellectual property rights should not be whether the
17 government or the contractor should take title to such
18 property when it is generated in whole or in part with
19 Government funding, but, in whose hands will the vestiture
20 of primary rights to invention serve to transfer the
21 inventive technology most quickly to the public for its use
22 and benefit,

23 Four, that the absence of a uniform government patent
24 policy has been a serious disincentive to successful
25 technology transfer from the university to the public and

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1 has, in fact, often deprived the public of the fruits of
2 basic research;

3 Five, that the absence of a uniform government patent
4 policy which reflects and supports our system of free
5 enterprise has helped to put the U.S. at peril in the world
6 economic scene;

7 Six, that science has over the years been made
8 increasingly subservient to politics, with decisions being
9 made not on scientific facts but on political opportunity;

10 Seven, that the talent of invention must be given the
11 maximum encouragement by providing the inventor and the
12 process of technology transfer all necessary stimuli to
13 inventive and in^{ve}novative activity in a free enterprise
14 environment;

15 Eight, that the less restrictive a government patent
16 policy is, the greater is the transfer of technology under
17 the policy, and

18 And Nine, that a uniform government patent policy under
19 which the contractor has the first option to acquire title
20 to inventions made in whole or in part with government funds
21 will provide the maximum stimulus to invention and
22 innovation and will be in the public interest.

23 It appears to us that the goals of S. 1215 and the
24 university community are essentially the same, and, as an
25 instrument toward achieving such goals, the university

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1 community, as represented by the organizations on behalf of
2 ~~whom~~ ^{which} I speak, supports S. 1215.

3 At the outset it must be presumed that government
4 research dollars are made available in the expectation of
5 not only developing basic knowledge, but also in the
6 expectation that the funded research will lead to products,
7 processes, and techniques which will be useful and
8 acceptable in all or part of our society to improve the
9 well-being of the society in general.

10 In the face of this presumption it is apparent that
11 inventions, whether made through the expenditure of private
12 or governmental funds, are of little use to society unless
13 and until they are utilized by society. In order to achieve
14 such utilization it is essential that the invention be
15 placed in a form or condition which will be acceptable and
16 beneficial to the public..

17 In a free enterprise system, such transfer is normally
18 accomplished as the result of pertinent and appropriate
19 activities of private enterprise. Such activities obviously
20 entail the commitment and expenditure of substantialy
21 monies -- generally estimated at ten times or more of the
22 amount needed to make the invention. Obviously, adequate
23 and appropriate incentives to such commitment and
24 expenditures must be afforded.

25 Consequently, and since the patent system provides such

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1 incentives and is the most viable vehicle for accomplishing
2 the transfer of technology, full and careful consideration
3 must be given to the making of any patent policy which will
4 affect the transfer of technology that has been generated in
5 whole or in part by government funded research.

6 One can truthfully say that at best the government
7 patent policy has been non-uniform and at worst has been a
8 non-policy with the result that some 20 or more agency
9 policies have developed, and even those have not been
10 necessarily uniformly applied. At the one extreme, some of
11 the agencies advocated the "title" policy. At the other
12 extreme were those agencies advocating the "license"
13 policy. There were also many and varied policies between
14 these two extremes.

15 Governmental agencies operating under the "title" policy
16 insisted on acquiring title to all contracts^{or} generated
17 inventions and patents on them, including inventions which
18 were only incidental to the major purpose of the contract,
19 and then dedicated them to the public through publication,
20 or by offering a license on a nonexclusive, royalty-free
21 basis under any patents obtained to all who requested it.
22 The argument was that all these inventions, including the
23 incidental inventions, should be acquired because they had
24 been "paid for" by the government and should therefore be
25 owned by the government.

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1 Agencies which adopted the "license" policy permitted
 2 the contractor to take and keep title to inventions and
 3 patents arising under the contract, while reserving a
 4 royalty-free license in the government to practice the
 5 inventions for governmental purposes. The theory which these
 6 agencies applied was that inventions and patents are only
 7 incidental to the specific research or products contracted
 8 for and that equity demands nothing more than ^oroyalty-free
 9 right for the government to use the inventions.

10 Since within the universities, more often than not, an
 11 investigation is carried out with funds acquired under
 12 grants and contracts with more than one government agency,
 13 and perhaps also with co-mingled funds derived from other
 14 sources, the uncertainties as to the applicable patent
 15 policy militated strongly against the successful transfer of
 16 the technology developed. Generally, and most
 17 unfortunately, the most restrictive policy was applied and
 18 without much attention to the equities of the respective
 19 funding parties, again with an adverse effect on possible
 20 transfer of the technology to the public. It has been the
 21 experience of years within the universities that the more
 22 "title" oriented an agency is toward inventions and patents
 23 generated under its funding, the less the likelihood exists
 24 that the technology will be successfully transferred for the
 25 public benefit.

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1 An interesting comparison along these lines was made by
2 Harbridge House in its 1968 study of government-funded
3 patents put into use in 1957 and 1962. It was found that
4 contractor-held inventions were 10.7 times as likely as
5 government-held inventions to be utilized in products or
6 processes employed in the private sector for the benefit of
7 the public. Moreover, based upon experience, particularly
8 under the Institutional Patent Agreements as between
9 universities and non-profit organizations on the one hand
10 and the Department of Health, Education, and Welfare and the
11 National Science Foundation on the other hand, there is no
12 reason to suspect that a different conclusion would be
13 reached today.

14 It seems axiomatic that since the patent system was
15 created as an incentive to invent, develop, and exploit new
16 technology -- to promote science and useful arts for the
17 public benefit -- when the government holds the patent under
18 the aegis that the inventions of the patent should be freely
19 available to all, much the same as if the disclosure of the
20 invention had been merely published, the patent system
21 cannot operate in the manner in which it was intended. The
22 incentives inherent in the right to exclude conferred upon
23 the private owner of a patent, and which are the inducement
24 to development efforts, are simply not available.

25 Although for some 20 or more years the argument swirling

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1 about the ownership of inventions made in whole or in part
2 with government funds was lodged in rhetoric and not in
3 fact, since 1968, after the first of the new Institutional
4 Patent Agreements were established, a body of evidence has
5 been building which we believe clearly establishes that the
6 universities have been highly successful in transferring
7 technology left with them through licensing under patents
8 while the attempts to license government-owned inventions
9 has been singularly unsuccessful.

10 Moreover, and of direct importance to the economic
11 well-being of the United States, is the fact that the
12 government patent policy has made much of the technology
13 generated with federal funding available without charge or
14 restriction to foreign countries and companies who have very
15 successfully utilized such technology to capture from their
16 U.S. competitors large segments of various markets. The
17 inevitable result was, of course, an increasing balance of
18 trade deficit.

19 The university community, in espousing an enlightened
20 uniform government patent policy which will provide an
21 incentive to the transfer of technology, philosophically
22 believes that such policy should apply to all government
23 contracts. As a practical matter, however, the greater need
24 for the patent incentive lies primarily with the
25 universities, non-profit organizations, and small

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1 businesses.

2 Technology transfer by universities and nonprofits
3 depends entirely on the underlying patent position, and for
4 small business the patent right is an important element in
5 its ability to compete. Nor should such a policy
6 differentiate as between research and development results
7 which are intended for the government's own use and those
8 which are intended for civilian purposes. It must be
9 presumed in both situations, as pointed out earlier, that
10 the goal of research and development is to generate
11 processes, products, and techniques which will become
12 available to and benefit society in general.

13 In the light of the performance data and information
14 which is available from experience with the Institutional
15 Patent Agreements there is little doubt in the university
16 community that a uniform government patent policy under
17 which the contractor has the first option to acquire title
18 to inventions made in whole or in part with government funds
19 will provide the maximum stimulus to invention and
20 innovation and will also be in the best interest of the
21 public and of the United States.

22 We also firmly believe that such a bill should contain
23 appropriate provisions which will protect the contractor
24 against arbitrary acts by agency individuals which might
25 deny the rights in the contractor or delay the effort to

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1 transfer the technology. To that end it should not provide
 2 for the surrender of background patents and should not have
 3 compulsory licensing provisions.

4 Also, from the university viewpoint and given the fact
 5 that most university-generated inventions are embryonic in
 6 nature and require a great deal of development, and often
 7 ~~they~~ are ahead of their time in the commercial sense, and
 8 also given the absence of evidence of abuses in the
 9 administration of inventions generated in whole or in part
 10 with government funds, and also the need for exclusivity in
 11 order to convey some exclusivity as an incentive, university
 12 communities do not favor ^u the limitation ^{on} of the contractor's
 13 exclusive rights in the invention.

14 The inclusion of a reasonably^e payback provision in such
 15 a bill would be acceptable to the universities, although the
 16 return to the public and the country from successful
 17 technology transfer in terms of tangible monies from taxes,
 18 such as corporate and individual income taxes, and from
 19 foreign sources in licensing and know-how ^{fees} ~~fees~~, and also in
 20 intangible benefits, such as in the successful treatment or
 21 prevention of disease or improvements in the quality of
 22 life, makes the concern about payback rather insignificant.

23 Moreover, the cost of development of an invention to the
 24 market is many times the cost of making the invention
 25 originally and any payback should perhaps reflect the

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1 relative risk dollar equities involved and also reflect the
 2 fact that inventions are almost always incidental to the
 3 federally funded research objective.

4 We have some specific ~~provisions~~ ^{revisions in} suggestions for
 5 SJ215, but suffice it to say that our ^{primary} concerns ^{are} with the
 6 criteria established for the "qualified technology transfer
 7 program, and ~~also the primary concern~~ that under Section
 8 301, the presumption ^{to title} ~~lies or~~ appears to lie in favor of the
 9 government. We would like to have that presumption stated
 10 more positively in the direction ^{of} that the contractor takes ^{ing}
 11 title, with certain ^{exception} ~~exceptions~~, and not that the government
 12 takes title ^{under certain stated} ~~of the particular~~ exceptions.

13 It is ^{perhaps} a philosophical point ~~of view~~, but we think it is
 14 important ~~for someone looking to the bill.~~

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mte 1 Throughout our considerations, we kept in mind the words
2 of Adam Smith in "The Wealth of Nations" where he says, quote:

s 3 "The uniform, constant and uninterrupted effort of every
4 man to better his condition ^{is} frequently powerful enough to
5 maintain the natural progress of things toward improvement, in
6 spite both of the extravagance of government and the greatest
7 errors of administration."

8 We look upon S. 1215 as an effort and perhaps a means to
9 curb both the extravagance of governments and its errors of
10 administration in addressing ^{technological} ~~technical~~ innovation.

11 I would like to include a document in the record, which
12 is a lengthy treatment of the ^{impact of} ~~various aspects that the~~
13 Government ^{patent} ~~impact and~~ policy ~~has~~ upon competition, innovation,
14 public health, economic growth, and jobs, and foreign
15 competition.

16 Senator Schmitt. I certainly hope you will do that. The
17 record will be open.

18 Mr. Bremer. Thank you for the opportunity to express
19 these views.

20 Senator Schmitt. Before I go to Mr. Marcy, did you
21 comment on the issue of march-in rights?

22 Mr. Bremer. I did not specifically. We have lived with
23 march-in rights in our institutional patent agreements with
24 HEW now for some ten years and with the National Science
25 Foundation since '73, and have not found them onerous.

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1 Are you gentlemen familiar with the patent policies of
 2 other countries, particularly the major industrial countries,
 3 and if so, could you comment on how they compare with our
 4 policy or lack of same?

5 Mr. Bremer. ~~I think certainly,~~ As far as policies are
 6 concerned, we have all heard ~~of course~~ of Japan,
 7 Incorporated. I think that is an attitudinal approach ~~also,~~
 8 in the sense that ~~there,~~ ^{in Japan} the government tends to cooperate with
 9 ~~its~~ ^{certain} companies, ~~chosen ones,~~ to corner ~~its~~ share of the world
 10 market ~~for Japan and its companies.~~ ~~And~~ This is certainly in
 11 contrast to ~~our own~~ ^{the} antitrust approach in ~~various of these~~ ^{the United States.}
 12 areas.

13 ~~So from that standpoint, at least, it is a formidable~~
 14 ~~competitor~~ ^{Sovereign} Where the government is cooperating to take
 15 technology from outside, ~~where,~~ ^{although} the country itself has almost
 16 no resources, and to develop ~~that~~ technology and ^{import} ~~literally use~~
 17 it into our own market, ^{provides a formidable competitor.} ~~at least, as well as others.~~

18 I don't know that in ~~every area~~ the various other
 19 countries, the governments support the R&D function to the
 20 extent that they do here, looking toward the cooperation ~~under~~
 21 ~~between~~ ^a free enterprise systems ~~in the private~~ ^{between} the private
 22 sector and the government sector ^{to transfer the technology to the public}. As you are well aware, in
 23 Russia it is quite a different situation. In England, --
 24 Dr. Marcy's reference to NRDC -- it's an effort to pull
 25 together any inventions made at various universities.

1 particularly where government funding has been effected, and
2 to use that agency, NRDC, to license those inventions and to
3 ultimately earn money on them.

4 Senator Schmitt. Have you any other comments about the
5 NRDC, Mr. Bremer? Are you supportive of that concept?

6 Mr. Bremer. No, I do not support the NRDC concept. ~~I~~
7 ~~think~~ I support Mr. Tenny[←] Johnson's view that there should be
8 someone other than another Government agency or an already
9 established agency that oversees these things, perhaps a panel
10 ~~that is established~~ that is free from any agency intervention
11 or control. ~~That would be the most likely approach.~~

12 ~~But~~ It is my understanding that currently the NRDC is
13 under attack in Britain from various sources and is considered
14 not to have been ^{as} successful as it ^{may} appear ~~on its face~~.

15 Senator Schmitt. Dr. Marcy?

16 Dr. Marcy. Senator, I have to disagree with Mr. Bremer.
17 The NRDC has been under attack not only once but about three
18 times, and each time it has weathered the attack and has come
19 back stronger than ever. At the present moment, it is being
20 supported very vigorously by — well, it was by the former
21 British U.K. Government. I have ~~not~~ heard anything about the
22 present new government that has come in as to what they are
23 planning to do.

24 Senator Schmitt. Is there a summary or analysis of the
25 NRDC, its history?

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1 particular products in the United States, and Eli Lilly
 2 Company is practically solely responsible for putting NRDC in
 3 the black with the inventions that they have. So this kind of
 4 thing is something that I think ought to be seriously
 5 considered in developing legislation that is directed towards
 6 the next step down the road -- what do you do with the patents
 7 after you get them.

8 Senator Schmitt. I presume you would use this as a means
 9 of clearing the decks of the 28,000 patents that now exist in
 10 the Government?

11 Dr. Marcy. This would be one task that I would think
 12 could be assigned to such an organization. On the other hand,
 13 I think that task could be assigned to existing organizations
 14 within the United States at present through contracting
 15 operations similar to what the Office of Energy Related
 16 Inventions is doing and also similar to what the National
 17 Technical Information Service is currently doing on a very
 18 limited basis.

19 Senator Schmitt. You are probably correct in part, at
 20 least, that agencies on an agency-by-agency basis, they have
 21 so many other fish to fry that this issue does tend to get
 22 subordinated in contract discussions as well as in actual
 23 fact.

24 Mr. Bremer. ^{may I} ~~if I could~~ add something else to that, ^{is} ~~in~~
 25 ~~my view of it,~~ ^{I meant that} when I said the universities were involved, ^{the}

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1 support of the Government goes to the universities for
 2 research projects and ~~what not~~,^{Sanctions} much as it does in this
 3 country, and they, of course, are required to bring ~~that~~^{any inventions made} back
 4 to NRDC. That is ~~a~~^{the} university involvement. ~~And~~^{I believe} you will find
 5 ~~that~~^{an NRDC} kind of organization as Dr. Marcy mentioned, if you will
 6 remember the names, in mostly ~~the~~^{of} Commonwealth countries or
 7 former British Commonwealth countries. ~~Most of them have the~~
 8 same kind of organization.

9 ~~The~~^{One of} main objections I have to ~~that is, in essence, you are~~^{an NRDC type of organization}
 10 ~~putting all of the eggs back into a basket, again, which~~^{is essence, you are}
 11 under which a tremendous bureaucracy can be established. And
 12 ~~One of the main~~^{repeatedly voiced} criticisms of that kind of an organization ~~has~~
 13 ~~crepped up several times, as Dr. Marcy mentioned, and~~^{is now}
 14 coming up again, is that the people at the universities ~~doing~~^{conducting}
 15 the research function do not feel that ~~they~~^{their inventions} are getting
 16 adequate attention in each case ~~for the invention, and that is~~
 17 mainly because of the size of the organization and ~~how the~~^{the manner}
 18 ~~consideration is carried out.~~^{in which invention evaluation is carried out.}

19 I know Dr. Marcy ~~in~~^{with} his organization, Research
 20 Corporation, has ~~some of~~^{encountered} that same problem because of the
 21 very large number of universities for whom they work. I have,
 22 in fact, heard criticisms of Research Corporation for those
 23 very reasons.

24 Senator Schmitt. Do you agree with Mr. Mossinghoff, who
 25 earlier said that the person who is most likely to see that an

mte 1 invention -- or something is made of an invention is the
2 inventor?

3 Mr. Bremer. You need two people when you are in ^{an invention} the
4 licensing situation. ~~We feel out~~ ^{At the university,} ~~where you~~
5 ~~have~~ ^{where} most inventions ^{tend to be} are embryonic in nature, ~~and~~ the ones
6 that ~~has~~ ^{have} the know-how ^{are} is the inventor and his immediate
7 colleagues. We think it is imperative, ^{therefore,} that he participate in
8 any transfer of technology ^{from} of the university ~~mentioned.~~

9 The second ^{person needed in a} ~~man you need~~ under licensing ^{situation} is a champion for
10 the invention ~~and~~ ^{within} the company which ^{is being licensed} you are licensing, ~~and~~ In
11 the absence of such a champion, one who really espouses the
12 invention ~~as~~ ^{it is} a product line, ^{or} perhaps, that the company ^{wishes}
13 ~~espouses use of the invention by the company in another way,~~
14 ~~to put out, in the absence of that man, it will go nowhere,~~
~~the invention will generally go nowhere.~~
~~either.~~

15 ^{speaking from and} We have had considerable experience along those lines ~~and~~
16 ^{conclude that} ~~so~~ two people, ~~those two~~ ^{the inventor and the invention champion} are necessary for ^{its} the successful
17 transfer ~~to the public.~~

18 Senator Schmitt. Is this anything different than a
19 Dr. Jeckyl-Mr. Hyde personality split within the inventor
20 himself or herself that could be embodied in two people or one
21 person?

22 Mr. Bremer. ~~In our situation, let me add this, too.~~
23 ^{on that point} Speaking for the universities in general, ^{is} rather difficult,
24 since there are various kinds of arrangements that are
25 available. In some schools, for example, there is an

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1 employment agreement with the professors ^{conducting} in the research.

2 They ^{then} have ^{a direct} an obligation to the university itself. Other

3 places, as at the University of Wisconsin, they do not. ^{At} The

4 ^{Wisconsin,} inventor there, ^{an} absent obligation ^{to the Government} for federal because of

5 federal funding, ^{the inventor} is free to do with his inventions whatever he

6 wishes. In these ^{of} situations, he can go directly to the

7 industry, ~~and make the~~ participate in the invention

8 development, ~~directly~~ and also receive some stipend back

9 ~~directly~~ from any successful transfer of that technology. ^{or he may even sell the invention outright.} In

10 other universities he cannot do that.

11 ~~Now,~~ where he is ^{essentially a free agent} free, also, he is very often employed by the

12 licensing company as a consultant. ~~and again,~~ ^{however,} that is on his

13 own volition and a voluntary act.

14 Senator Schmitt. Do you favor that kind of an

15 arrangement?

16 Mr. Bremer. It has been very successful, in our view, at

17 the University of Wisconsin, and I must state that my ^{experience} practice

18 has been ^{primarily} limited to that approach. ~~But~~ ^{arrangement} that has generally

19 been credited as part of the reason that that University has

20 been so successful in technology transfer efforts.

21 Senator Schmitt. Section 201(a) of S. 1215 creates a

22 central review authority with a power to determine with

23 administrative finality any dispute between a federal agency

24 and a contractor as to the allocation of rights for an

25 invention made under a federal contract.

nte 1 Do you believe, Mr. Bremer, that this review authority
 2 could meaningfully address the concerns that you raise in this
 3 manner?

4 Mr. Bremer. I think it certainly can. In any situation
 5 you have an equity proposition that attaches, and we have
 6 found very often, ^{that} ~~under~~ the old saw about what the Government
 7 pays for it should get ^{is not, in equity, applicable.} ~~at~~ the university, ^{often} ~~where you~~ provides
 8 ~~the proper environment, and the principal investigator,~~
 9 ~~physical space, and provide the man, who is generally salaried by the~~
 10 ~~state, and other things, as well as ancillary contributions -~~ We have very often found that the
 11 ~~equity position is about 50-50 under a grant.~~ ^{of the university vs. and the government}

11 As a consequence, a review authority could consider all
 12 of those factors in addressing a problem such as this.

13 Senator Schmitt. Also, in your statement -- and
 14 (Lz. (Marcy may want to comment on this, also -- the present
 15 Government patent policy has, in a way, ensured that
 16 technology generated with federal funding is available without
 17 charge or restriction to foreign competitors, and they have
 18 more successfully utilized such technology than we have.

19 Do you think that S. 1215 would treat that problem, or do
 20 you have suggestions by which we could treat that problem?

21 Mr. Bremer. In my view, if we can give the contractor
 22 first option to title ^{he will make a selection to the best} ~~probably a selection is made in any~~
 23 ~~of his ability as to the invention disclosures which appear~~
 24 ~~circumstances on any invention that disclosures were made.~~
 25 ~~We, for example, may get at the University of Wisconsin,~~ ^{to have the best commercial potential and file patent applications on them}
 26 60 disclosures a year. We may file patent applications on a

1 ^{about me -} (third of those. ^{remaining} whether the ~~other~~ technology is ever
 2 ~~published or not~~ generally, it is from a university but
 3 ~~it doesn't~~ ^{may not} lend itself to either patentability or ~~it~~ is so
 4 narrow in scope that it doesn't lend itself to a ^{patent} licensing
 5 ~~situation very well.~~ ^{arising at a university however it is generally disclosed through} ~~And of course,~~ for a university or a
 6 ~~nonprofit, that is the absolute basis for creating any kind of~~ ^{It must be kept in mind that}
 7 ~~a transfer of the technology occurs.~~ ^{as patent is the fundamental basis upon which}

8 ~~I think that~~ The NTIS, of course, publishes -- they even
 9 have an outlet in Japan, I understand, so they can transfer
 10 the technology more quickly to the Japanese, ^{who could seem to} ~~who don't seem to~~
 11 get it fast enough. ~~And I think~~ NTIS, with its basic thrust,
 12 would be favorable toward controlling ^{some of that} at least.

13 Senator Schmitt. Dr. Marcy? ^{free dissemination of technology}

14 Dr. Marcy. Well, I think one has to realize that the
 15 major funding of universities comes from the HEW and from NSF.
 16 Therefore, the inventions that come out -- I am speaking
 17 generally -- of the university, the inventions that come out
 18 of this type of research are biological, chemical,
 19 pharmaceutical, that sort of thing, rather than the so-called
 20 high-technology inventions in electronics, and also
 21 biomedical devices, diagnostic testing procedures and so on.

22 Now, the situation regarding that type of invention is
 23 quite different from the fact situation in the electronics and
 24 mechanical device area. They are much stronger and much more
 25 important to the final industrial company that manufactures