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WISCONSIN ALUMNI RESEARCH FOUNDATION

POST OFFICE BOX 7365

MADISON, WIS. 53707

TELEPHONE (608) 263-2500

September 22, 1978

Mr. Norman J. Latker  
Patent Counsel  
Office of the General Counsel  
Department of Health, Education,  
and Welfare  
Washington, D. C. 20201

Dear Mr. Latker:

Re: Institutional Patent Agreement  
University of Wisconsin - Department of  
Health, Education, and Welfare

This letter and the attachment will comprise the annual report required under the terms and provisions of the above noted agreement for the period from July 1, 1977 through June 30, 1978. Reported are new inventions which have been brought to the Foundation and reported to the Department during the indicated period as well as information regarding inventions for which the Foundation was previously given responsibility under the Institutional Patent Agreement. You will find pertinent information regarding all of these inventions in the attached table.

Very truly yours,

UNIVERSITY OF WISCONSIN

By

\_\_\_\_\_  
Reuben H. Lorenz, Vice President and  
Controller

WISCONSIN ALUMNI RESEARCH FOUNDATION

By

\_\_\_\_\_  
Howard W. Bremer, Patent Counsel

RHL:HWB:rw

Enc.

bc--Mr. Lorenz

Prof. Wm. H. Young

Mr. Hill

Pike-Woerpel-Hinkes

UNIVERSITY OF WISCONSIN-WARF  
 DHEW INSTITUTIONAL PATENT AGREEMENT INVENTION REPORT  
 July 1, 1977 - June 30, 1978

<u>Invention &amp; Grant No.</u>	<u>Inventors</u>	<u>Invention Reported to DHEW</u>	<u>Serial No. Filing Date</u>	<u>Development and Commercial Use</u>	<u>WARF Expenditures (Approx. Estimate)</u>
Method for Reducing Frost Damage of Plants Grant No. HEW GMO 7215-01	Arny, D. C. Lindow, S. E.	9/2/76	Pat. No. 4045910 issued 9/6/77	License being negotiated with major U. S. company.	\$ 8,500
Method for Reducing Frost Damage of Plants Grant No. HEW GMO 7215-01	Arny, D. C. Lindow, S. E.	With this report	846,781 10/31/77 (Reissue of Pat. No. 4045910)		
Method for Reducing Temperature at Which Plants Freeze Grant No. HEW GMO 7215-01	Arny, D. C. Lindow, S. E.	8/14/78	921,800 7/3/78	License being negotiated with major U. S. company.	\$ 2,346

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Method for Preparing a Reagent for PLT Grant Nos. PHS HL06314 NIH A100567 NIH A108439 NIH CA16836	Bach, M. L. Bach, F. H.	6/21/77	697,029 6/17/76 (aband.)	Licensed to Biotest-Serum-Institut, Germany	\$ 2,346 \$ 6,164 (apportioned expense)
Method for Preparing a Reagent for PLT Grant Nos. PHS HL 06314 NIH A100567 NIH A108439 NIH CA16836	Bach, M.L. Bach, F. H.	With this report	814,316 7/11/77 (continuation of 697,029)		
Cytokinin Antagonist to Plant Growth Hormone NIH Grant No. GM 12395	Bock, R. M. Hecht, S. M. Skoog, F. K. Schmitz, R. Y.	11/8/71	604,173 8/13/75	License agreement with Burroughs-Wellcome (mammalian field).	\$ 9,220 \$ 5,000 (apportioned expense)

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24, 25-Dihydroxy-cholecalciferol NIH Grant Nos. AM 14881 AM 15512	DeLuca, H. F.	7/6/72	Pat. No. 3715374 issued 2/6/73	Licensed to Upjohn Co., Hoffmann-LaRoche (U. S.), Roussel Uclaf (France), Leo (Denmark), Chugai (Japan). Other licenses pending.	\$ 1,025 \$ 6,000 (apportioned expense)
25, 26-Dihydroxy-cholecalciferol NIH Grant No. AM 05800-08	DeLuca, H. F.	11/16/71	Pat. No. 3739001 issued 6/12/73	Licensed as above.	\$ 835 \$ 6,000 (apportioned expense)
1, 24, 25-Trihydroxycholecalciferol NIH Grant Nos. AM 14881 AM 15512	DeLuca, H. F.	7/17/73	Pat. No. 3847955 issued 11/12/74	Licensed as above.	\$ 4,250 \$ 5,500 (apportioned expense)
5, 6-Trans-25-Hydroxycholecalciferol NIH Grant No. AM 15512	DeLuca, H. F. Holick, M. F. Garabedian, M.	2/11/72	Pat. No. 3743661 issued 7/3/73	Licensed as above.	\$ 1,655 \$ 5,500 (apportioned expense)

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1, 25-Dihydroxy-ergocalciferol NIH Grant Nos. 5-PO1-AM-14481 5-PO1-AM-15512	DeLuca, H. F. Jones, G. Schnoes, H. K.	6/13/74	Pat. No. 3880894 issued 4/29/75	Licensed as above.	\$ 4,583; \$ 7,000 (apportioned expense)
Method of Treating Milk Fever in Dairy Cattle with 1 $\alpha$ -Hydroxycholecalciferol NIH Grant Nos. 5-PO1-AM-15512 5-PO1-AM-14881	DeLuca, H. F. Jorgensen, N.	6/13/74	Pat. No. 3879548 issued 4/22/75	Licensed as above.	\$ 1,200 \$ 7,000 (apportioned expense)
Method of Treating Milk Fever in Dairy Cattle with 1, 25-Dihydroxycholecalciferol NIH Grant No. AM-14881	DeLuca, H. F. Jorgensen, N.	3/22/78	815,587 7/14/78	Licensed as above.	\$ 218 \$ 1,000 (apportioned expense)

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Process for Preparing 1 $\alpha$ -Hydroxylated Compounds NIH Grant No. AM-14881	DeLuca, H. F. Schnoes, H. K. Hamer, D. E. Paaren, H. E.	3/22/78	867,161 1/5/78	To be included in licenses noted above - process being evaluated for commercial use.	\$ 111 \$ 1,000 (apportioned expense)
Process for Preparing 1 $\alpha$ -Hydroxylated Compounds NIH Grant No. AM-14881	DeLuca, H. F. Schnoes, H. K. Hamer, D. E. Paaren, H. E.	3/22/78	869,448 1/16/78 (aband.)	To be included in licenses noted above - process being evaluated for commercial use.	\$ 893 \$ 3,000 (apportioned expense)
Process for Preparing 1 $\alpha$ -Hydroxylated Compounds NIH Grant No. AM-14881	DeLuca, H. F. Schnoes, H. K. Hamer, D. E. Paaren, H. E.	3/22/78	914,796 6/12/78 (c-i-p of 869,448)		
1,25-Dihydroxycholecalciferol NIH Grant No. AMO 5800-10	DeLuca, H. F. Schnoes, H. K. Holick, M. F.	4/8/71	Pat. No. 3697559 issued 10/10/72		

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1 $\alpha$ -Hydroxycholecalciferol NIH Grant No. AM-15512	DeLuca, H. F. Schnoes, H. K. Holick, M. F. Semmler, E.	12/2/71	Pat. No. 3741996 issued 6/26/73	Licensed as indicated under 24,25-dihydroxycholecalciferol, above. Product is being sold in Eire and Great Britain. Approval for sale has been obtained in Holland, Denmark and Sweden.	\$23,351 \$15,000 (apportioned expense)
1 $\alpha$ -Hydroxyergocalciferol NIH Grant No. AM-14881	DeLuca, H. F. Schnoes, H. K. Lam, H. Y.	8/28/74	Pat. No. 3907843 issued 9/23/75	Licensed as above.	\$ 3,970 \$ 7,000 (apportioned expense)
3-Deoxy-1 $\alpha$ -Hydroxycholecalciferol NIH Grant No. AM-14881	DeLuca, H. F. Schnoes, H. K. Lam, H. Y.	8/28/74	Pat. No. 3906014 issued 9/16/75	Licensed as above. Reissue appln. filed. Interference in Reissue appln. settled with Reissue appln. to go to ex parte prosecution in PTO.	\$ 8,456 \$10,000 (apportioned expense)

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25-Aza-Vitamin D <sub>3</sub> NIH Grant No. AM-14881	DeLuca, H. F. Schnoes, H. K. Onisko, B. L.	3/22/78	781,008 3/24/77 (aband.)	Efforts to license underway.	\$ 5,414 \$ 3,000 (apportioned expense)
Anti-vitamin D Compounds NIH Grant No. AM-14881	DeLuca, H. F. Schnoes, H. K. Onisko, B. L.	3/22/78	907,893 5/19/78 (c-i-p of 781,008)		
Rodenticide NIH Grant No. AM-14881	DeLuca, H. F. Schnoes, H. K. Suttie, J. W. Frank, H.	11/10/75	Pat. No. 4035493 issued 7/12/77	Licensed as indicated under 24,25-dihydroxycholecalciferol, above, with commercial interests other than licensees listed being sought.	\$ 4,313 \$ 2,000 (apportioned expense)
Derivative of T-2 Toxin & Anguidine HEW GRS Grant in Pharmacy #G066	Ellison, R. A. Kotsonis, F. N.	2/6/76	646,647 1/5/76 (aband.)	Testing results indicate invention probably not viable for licensing.	\$ 2,785
Derivative of T-2 Toxin & Anguidine HEW GRS Grant in Pharmacy #G066	Ellison, R. A. Kotsonis, F. N.	2/6/76	826,067 8/19/77 (c-i-p of 646,647)		



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Electromagnetic Flowmeters for Blood or Other Conductive Fluids NIH Grant No. HE-97754	Folts, J. D.	9/29/71	Pat. No. 3739640 issued 6/19/73	No commercial interest found. Probably not licensable because of market size and technological factors.	\$ 1,700
The Preparation and Use of Europium and Prasedoymium Chelates of 3-Tri-Fluor-acetyl D-Camphor and 3-Perflouro-n-butyl D-Camphor Predoctoral Fellow FO-1-DM-41571	Goering, H. L. Eikenberry, J. Koermer, G. S.	9/10/71	Pat. No. 3789060 issued 6/19/73	Licensed to Regis Chemical Co. (Compounds being marketed.)  Interference on Patent No. 3789060 settled.	\$15,000
Fluorinated Camphor Derivatives and Europium and Prasedymium Chelates Thereof Postdoctoral Fellow FO-1-GM-41571	Goering, H. L. Eikenberry, J. Koermer, G. S.	5/23/74	Pat. No. 3915641 issued 10/28/75 (Div.)		

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Isolation of a Ca <sup>++</sup> Specific Ionophore from Mitochondria NIH Grant Nos. 5-PO1-GM-12847-09 5-PO1-GM-12847-10	Green, D. E. Blondin, G. A.	2/13/75	No pat. app. filed to date.	Invention awaiting better definition before pat. app. can be filed and commercial interest contacted.	\$ 250
Process for Preparing 1 $\alpha$ -25-Hydroxy-cholecalciferol (No direct Federal funding - Government given license because of use of material supplied by DeLuca in making invention.)	Matsunaga, I. Ochi, K. Nagano, H. Shindo, M. Ishikawa, M. Kaneko, C. DeLuca, H. F.	2/19/76	Pat. No. 4022768 issued 5/10/77	Licensed with DeLuca et al inventions supra.	\$ 5,378 \$ 3,000 (apportioned expense)

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Compensation of Patient Thickness Variations and Differential X-ray Transmission Imaging NIH Fellowship Nos. 5-TO1-CA-05104-10 5-TO1-CA-05104-11	Mistretta, C. Kelcz, F.	1/15/74	Pat. No. 3854049 issued 12/10/74	Inventors' work has led away from the techniques covered by these patents. As industrial interest firms re. new techniques WARF hopes that secondary products may justify the granting of licenses under these patents also.	\$ 6,000
Differential X-ray Method and Apparatus NIH Grant No. 5-TO1-CA-05104-11	Mistretta, C. Kelcz, F.	5/9/75	Pat. No. 3974386 issued 8/10/76		\$23,146

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Multiplexing of Physiological Sensor Signals with Gamma Ray Camera Data Signals Grant No. PHS HRA 05000196-09	Nickles, R.	7/1/75	Pat. No. 4033335 issued 7/5/77	All U. S. manufacturers of gamma ray cameras have been contacted, with no interest having been expressed.	\$ 6,331
Correction of Data Loss in Gamma Ray Scintillation Cameras Grant No. PHS HRA 05000196-09	Nickles, R.	6/14/76	Pat. No. 4058728 issued 11/15/77 (c-i-p- of Pat. No. 4033335)		
A Three Dimensional Fast-Coincidence Gamma Imaging System DHEW Grant No. 5-EO3-PE-00196-07	Nickles, R. Meyer, H.	4/3/73	Pat. No. 3978337 issued 8/31/76	More related work with positron emitters, upon which this invention depends, is necessary to establish a favorable climate for this invention.	\$ 6,500

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Regulation of Insect Reproduction and/or Development NIH Grant No. 1-PO6-RR-WO779-01	Norris, D. Bridges, J.	7/3/74	DHEW notified of decision not to file pat. app. 9/14/77	Invention does not appear to be definable for patent purposes.	\$ 300
Antibiotic Production by Mycoplasma Species IIRP NIH Grant No. 5RO1-A1-10505	Perlman, D. Sylvestre, M. Sakai, T.	9/1/75	623,413 10/17/75; Pat. No. 4025619 issued 5/24/77	Option agreement with Abbott Laboratories cancelled. No current commercial interest.	\$ 9,874

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Solid Phase Synthesis of Protected Peptides NIH Grant No. 5-RO1-AM-15507-03	Rich, D. H. Gurwara, S.	12/3/74	575,478 5/7/75; Pat. No. 4062746 issued 12/13/77	Work of other scientists in the field may create new interest in this invention. So far no interested company.	\$ 7,246
Solid Phase Synthesis of Protected Peptides NIH Grant No. 5-RO1-AM-15507-03	Rich, D. H. Gurwara, S.	2/3/77	748,948 12/9/76 (Div. of 575,478)		
Solid Phase Synthesis of Protected Peptides NIH Grant No. 5-RO1-AM-15507-03	Rich, D. H. Gurwara, S.	2/3/77	850,141 11/10/77 (Div. of 748,948)		

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Immobilization of Macromolecules on Tissue NIH Grant No. 5-SOS-RR-07098(07)	Richardson, T.	1/4/74	472,588 5/23/74	Some additional contact with U. S. companies has occurred but no interest expressed.	\$ 4,000
Method for Typing Human Leukocyte Antigens Grant Nos. NIH A1 11576-03 NIH A1 08439 NIH CA 14520 NIH GM 20130 NIH GM 15422-10 NIH CA 16836-01	Sheehy, M. J. Sondel, P. M. Bach, F. H. Bach, M. L.	6/21/77	697,545 6/18/76 (aband.)	Licensed to Biotest-Serum-Institut, Germany (see Bach et al invention supra).	\$ 786 \$ 1,750 (apportioned expense)
Method for Typing Human Leukocyte Antigens Grant Nos. NIH A1 11576-03 NIH A1 08439 NIH CA 14520 NIH GM 20130 NIH GM 15422-10 NIH CA 16836-01	Sheehy, M. J. Sondel, P. M. Bach, F. H. Bach, M. L.	With this report	921,487 7/3/78 (continuation of 697,545)		

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Process for Preparing L-dopa (thru microbiological means) NIH Grant Nos. 5-RO1-AM-04874-09 5-TO1-AM-09688-05 5-SO1-FR-05456-07	Sih, C.J.	9/25/69	Pat. No. 3671397 issued 6/20/72	No commercial interest to date.	\$ 4,000
Process for Preparing dl-Strigol NIH Grant No. 2-RO1-AM-4874-12	Sih, C.J.	3/11/74	Pat. No. 3887547 issued 6/3/76	Continuing efforts being made to place invention - no express interest to date.	\$ 2,750
Process for Preparing dl-Strigol NIH Grant No. 2-RO1-AM-4874-12	Sih, C.J.	9/1/75	Pat. No. 3972916 issued 8/3/76 (Div.)		
Process for Preparing dl-Strigol NIH Grant No. 2-RO1-AM-4874-12		9/1/75	Pat. No. 3954806 issued 5/4/76 (Div.)		



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Glycosides of 2,6-Bis(Hydroxy)-3,7-Dioxabicyclo [3,3,0] Octane Grant No. NIH 2-RO1-AM-09688-11	Sih, C.J.	5/18/76	688,275 5/20/76; Pat. No. 4103006 issued 7/25/78	No commercial interest to date - attempts to place invention will continue though some negative results obtained in preliminary screening by one company.	\$ 9,912
Prostaglandins and Methods for Preparing Same NIH Grant Nos. A955 & B738	Sih, C.J.	1/28/72	Pat. No. 4031129 issued 6/21/77	Licensed to Miles Laboratories.	Gross out-of-pocket expenses for Sih inventions \$101,931
Prostaglandins and Methods for Preparing Same NIH Grant Nos. A955 & B738	Sih, C.J.	9/12/77	772,018 2/25/77 (Div.)	Same as above.	
Prostaglandins and Methods for Preparing Same NIH Grant Nos. A955 & B738	Sih, C.J.	9/12/77	Pat. No. 4088536 issued 5/9/78	Same as above.	
3-Substituted Iodo Alkenyl Compounds NIH Grant No. AMO 4874	Sih, C.J.	9/1/75	Pat. No. 3962351 issued 6/8/76	Same as above.	

Not determinable at present time which inventions will or may be used commercially.

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3-Substituted Iodo Alkenyl Compounds NIH Grant No. AMO 4874	Sih, C. J.	9/1/75	Pat. No. 3962352 issued 6/8/76 (Div.)	Same as above.	Gross out-of pocket expenses for Sih inventions \$101,931
3-Substituted Iodo Alkenyl Compounds NIH Grant No. AMO 4874	Sih, C. J.	9/1/75	Pat. No. 2962353 issued 6/8/76 (Div.)	Same as above.	
Method for Preparing 2-Substituted-4-Hydroxy Cyclopentene-1,3-Diones NIH Grant Nos. AM-9688 AM-4874	Sih, C. J.	9/29/72	Pat. No. 3773622 issued 11/20/73	Same as above.	

Not determinable at present time which inventions will or may be used commercially.

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Process for Stereo-specifically Preparing Chiral-2-Substituted-4-Hydroxy-2-Cyclopenten-1-One NIH Grant No. AM-4874	Sih, C.J. Heather, J. B.	9/29/72	Pat. No. 3968141 issued 7/6/76	Same as above.	Not determinable at present time which inventions will or may be used commercially. Gross out-of-pocket expenses for Sih inventions \$101,931
Process for Stereo-specifically Preparing Chiral-2-Substituted-4-Hydroxy-2-Cyclopenten-1-One NIH Grant No. AM-4874	Sih, C.J. Heather, J. B.	9/8/76	Pat. No. 4057851 issued 11/8/77	Same as above.	
An Improved Process for the Preparation of Triacetoneamine Grant No. NIH GM16741	Sosnovsky, G. Konieczny, M.	5/11/77	Notified DHEW of decision not to file pat. app. 10/5/77	\$ 750	

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Rodenticide NIH Grant No. P-01-AM-14881	Suttie, J. W.	5/28/75	Pat. No. 4021568 issued 5/3/77	No active commercial interest; efforts to license will continue.	\$ 5,000
Method & Apparatus for Dialysis NIH Grant No. GM-16133	Updike, S. J.	3/27/73	Pat. No. 3846236 issued 11/5/74	An option to a license has been granted to the German company which presently manufactures 90+% of all kidney dialysis films. Collaborative work between the German lab and Prof. Updike's lab continues.	\$12,503.
Method & Apparatus for Dialyzing Carbon Dioxide from Blood Plasma NIH Grant No. GM-16133	Updike, S. J.	3/27/73	Pat. No. 3953329 issued 4/27/76		
Catalyst Containing Semi-Permeable Membrane for Respiratory Gas Exchange by Dialysis NIH Grant No. GM-16133	Updike, S. J.	5/15/74	Pat. No. 3996141 issued 12/7/76		

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Method for Immunological Determinations NIH Grant Nos. GM-16133 GM-70157	Updike, S. J.	5/15/74	Pat. No. 3970429 issued 7/20/76	Agreement being finalized with West Coast company. Collaborative work between company and Prof. Updike to continue.	\$29,503
The Preparation of Dry, Porous Gel Particles Having High Water Regain or Liquid Sampling NIH Grant Nos. GM-16133 GM-70157	Updike, S. J.	1/4/74	Pat. No. 3925017 issued 12/9/75		
Reagent for Immunological Determinations NIH Grants He-09922 GM-16133 K3-HE-18184	Updike, S. J. Goodfriend, T. L.	4/29/70	Pat. No. 3793445 issued 2/19/74		

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INVENTIONS ON WHICH DHEW WAIVED RIGHTS TO NATIONAL SCIENCE FOUNDATION

Sentization of Radio Thermoluminescence in Dosimetry Grade LiF by Simultaneous Annealing and Ultraviolet Illumination NIH Grant No. 5-T01-CA05105-11 NSF Grant No. 74-52-GH 34585	Mayhugh, M. Fullerton, G.	2/22/74	Pat. No. 3962586 issued 6/8/76	Potential commercial interest exhausted.	\$ 3,600
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INVENTIONS ON WHICH NSF WAIVED RIGHTS TO DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

The Production of Radiation Induced Thermally Activated Current (RITAC) Devices by Selective Purification of Dielectric Solid Material NIH Grant No. 5-T01-CA-05104 10 & 11 NSF Grant No. GH-34585	Moran, P. R. Podgorsak, E. Fullerton, G. Fuller, G. E.	3/18/74	Pat. No. 3935457 issued 1/27/76	Efforts to license continue - no real commercial interest to date.	\$ 8,408
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<u>Invention &amp; Grant No.</u>	<u>Inventors</u>	<u>Invention Reported to DHEW</u>	<u>Serial No. Filing Date</u>	<u>Development and Commercial Use</u>	<u>WARF Expenditures (Approx. Estimate)</u>
Oxidative Decarboxylation of Carboxylic Acids NIH Grant No. 5-R01-GM-13598 NSF Grant No. 76-1-MPS-03396	Trost, B. M. Tamaru, Y.	3/18/75	Pat. No. 4007211 issued 2/8/77	Nature of process brought to attention of several companies - no commercial interest to date.	\$ 2,500
Stereocontrol in Allylic Alkylation Catalyzed by Palladium NIH Grant No. 5-R01-GM-13598 NSF Grant No. 76-1-MPS-03396	Trost, B. M. Tamaru, Y.	2/6/76	646,640 1/5/76	No commercial interest to date.	\$ 2,061