

DEPARTMENT OF CHEMISTRY

October 2, 1959

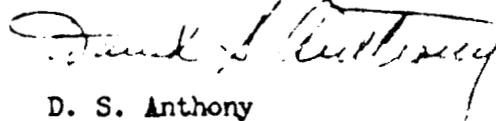
Dr. C. S. Shoup  
Division of Biochemistry and Medicine  
U.S.A.E.C.  
Oak Ridge, Tennessee

Dear Dr. Shoup:

This is in confirmation of our phone conversations of this week and of last July. I will not be asking for the renewal of my contract No. AT-40-1-2081. The results indicate that further work along the present lines would not be profitable and accordingly, we are abandoning this line of research. There remain the inevitable scattered bits of research necessary for conclusion of a program, and of course, the final analysis of data plus assembling of reports and/or publications. The funds remaining in the existing contract are adequate to complete all contemplated work. However, since both the graduate student and the under-graduate assistant have left the campus, it will be necessary to take several months for me to wind up the last bits of work. Therefore, I am requesting an extension of time until January 31, 1960 with no additional funds.

I would appreciate a reply with sufficient copies (perhaps three in number) for our local administration.

Sincerely yours,



D. S. Anthony  
Associate Professor  
Program Director

BEST COPY AVAILABLE

DSA:rw

REPOSITORY	<u>Oak Ridge Operations</u>
COLLECTION	<u>Records Holding Area</u>
BOX No.	<u>Doc 1944-194</u>
FOLDER	<u>Contracts AT-(40-1)-2056- 1 of 1 Bldg 2714-H 2097 Backup Papers - AT-(40-1)-2081 Univ of Fla.</u>

1. Chairman  
 TO: **J. R. Moore** Contract Board. From: Res. & Dev. Div.

It is requested that the Contract Board take the necessary action to process the following described contract action in accordance with the provisions of Bulletin OR-O&M-19:

2. Nature of Action Requested

Selection of New Contractor and Negotiation of Contract.

Modification of Contract

No. AT-(40-1)-2081

Contractor: University of Florida  
Gainesville, Florida

Review and approval of Contract, Sub-contract or Purchase Order.

Other (Explain) \_\_\_\_\_

Number: \_\_\_\_\_

Name: \_\_\_\_\_

3. Nature of Services to be Covered by Contract

Construction

Architect-Engineer

Other

(Explain) Research

4. Funding

Amount to be Obligated by this Contract Action : None

Source of Funds

Approved ORO Financial Plan, \_\_\_\_\_ Quarter, Fiscal Year 19\_\_

Project No. \_\_\_\_\_ or, Activity No. \_\_\_\_\_

Funds to be Obligated: Allotment No. \_\_\_\_\_ (F.Y. 19\_\_ Funds)

Procurement Directive No. \_\_\_\_\_ Dated \_\_\_\_\_

Issuing Office \_\_\_\_\_

Concurrence in Funding Statement: (signed) \_\_\_\_\_

*Amille*

Chief, Budget Branch

5. Project or Activity to be Covered by Contract Action:

Location of Work: \_\_\_\_\_ Construction Directive No. \_\_\_\_\_

Estimated Cost of Work to be Covered by this Contract Action : \_\_\_\_\_

Schedule: Date Work to Start \_\_\_\_\_ Estimated Completion Date \_\_\_\_\_

Description of Project or Activity:

(If more space is required use separate sheets and attach hereto:)

<p>6. Contract Board Docket No. _____ (To be assigned by Board Secretary)</p>	<p>7. Request Submitted By: (signed) _____ Date: OCT 28 1959 Title: _____ C. S. SHOUP LIFE SCIENCE BIOLOGY BRANCH U.S. DEPARTMENT OF AGRICULTURE</p>
<p>8. <u>Complete Description of Services to be Furnished by Contractor:</u></p> <p>Headquarters designated research contract TITLE: "A study of the Biochemical Results of Certain Treatments Given Patients Suffering from Phenylpyruvic Acid Oligophrenia"</p> <p>(If more space is required use separate sheets and attach hereto:)</p>	
<p>9. <u>Description of other changes to be covered by Modification:</u></p> <p>Modify contract to provide for the performance of additional research to be completed not later than January 31, 1960, without additional funds. There will be no significant change in the scope of the work.</p> <p>(If more space is required use separate sheets and attach hereto:)</p>	
<p>10. <u>Negotiated Contracts.</u> (Show why it appears desirable to negotiate new contract or to negotiate modification to existing contract)</p> <p>Memorandum from William E. Lotz to Herman M. Roth dated 10-20-59</p> <p>(If more space is required use separate sheets and attach hereto:)</p>	
<p>11. <u>Contracts, Subcontracts, or Purchase Orders Submitted for Review and Approval:</u> (Furnish brief description of action in this space and attach pertinent documents)</p> <p>None</p>	
<p>12. <u>Disputes:</u> Attach a statement summarizing the dispute together with pertinent documents and Background Material.</p> <p>None</p>	

1108440

*Office Memorandum* • UNITED STATES GOVERNMENT

TO : Herman M. Roth, Director  
Research and Development Division, Oak Ridge

DATE: October 20, 1959

FROM : William E. Lotz, Medical Research Branch *WEL*  
Division of Biology and Medicine, Washington

SUBJECT: CONTRACT NO. AT(40-1)-2081 -- UNIVERSITY OF FLORIDA (DR. D. S. ANTHONY)

SYMBOL: EMM;WEL

It is recommended that the period under CONTRACT NO. AT(40-1)-2081  
be extended to January 31, 1960, without additional funds.

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1. TO: J. R. Moore Chairman Contract Board From: Res. and Dev. Div.

It is requested that the Contract Board take the necessary action to process the following described contract action in accordance with the provisions of Bulletin OR-O&M-19:

2. Nature of Action Requested

Selection of New Contractor and Negotiation of Contract.

Modification of Contract No. AT-(40-1)-2081

Contractor: University of Florida Gainesville, Florida

Review and approval of Contract, Sub-contract or Purchase Order.

Other (Explain) \_\_\_\_\_

Number: \_\_\_\_\_  
Name: \_\_\_\_\_

3. Nature of Services to be Covered by Contract

Construction  Architect-Engineer  Other  (Explain) Research

4. Funding Amount to be Obligated by this Contract Action \$ 15,067.00

Source of Funds

Approved ORO Financial Plan, \_\_\_\_\_ Quarter, Fiscal Year 19\_\_

Project No. \_\_\_\_\_ or, Activity No. 6320

Funds to be Obligated: Allotment No. 6-91-91(2) F.Y. 1959 Funds)

Procurement Directive No. DM-59-99 Dated 7-5-53

Issuing Office Div. of Biology + Medicine

Concurrence in Funding Statement: (signed) A. E. Miller  
Chief, Budget Branch

5. Project or Activity to be Covered by Contract Action:

Location of Work: \_\_\_\_\_ Construction Directive No. \_\_\_\_\_

Estimated Cost of Work to be Covered by this Contract Action \$ \_\_\_\_\_

Schedule: Date Work to Start \_\_\_\_\_ Estimated Completion Date \_\_\_\_\_

Description of Project or Activity:

(If more space is required use separate sheets and attach hereto:)

<p>6. Contract Board Docket No. _____ (To be assigned by Board Secretary)</p>	<p>7. Request Submitted By: (signed) _____ Date: SEP 15 1958 C. S. SHOUP CHIEF, BIOLOGY BRANCH RESEARCH AND DEVELOPMENT DIVISION</p>
<p>8. <u>Complete Description of Services to be Furnished by Contractor:</u> Headquarters designated research contract TITLE: "A Study of the Biochemical Results of Certain Treatments Given Patients Suffering from Phenylpyruvic Acid Oligophrenia"  (If more space is required use separate sheets and attach hereto:)</p>	
<p>9. <u>Description of other changes to be covered by Modification:</u> Modify contract to provide for the performance of additional research to be completed not later than August 31, 1959, with new funds in the amount of \$15,007.  (If more space is required use separate sheets and attach hereto:)</p>	
<p>10. <u>Negotiated Contracts.</u> (Show why it appears desirable to negotiate new contract or to negotiate modification to existing contract)  Memorandum from C. W. Shilling to S. R. Sapirie dated September 5, 1958.  (If more space is required use separate sheets and attach hereto:)</p>	
<p>11. <u>Contracts, Subcontracts, or Purchase Orders Submitted for Review and Approval:</u> (Furnish brief descrip- tion of action in this space and attach pertinent documents)  None</p>	
<p>12. <u>Disputes:</u> Attach a statement summarizing the dispute together with pertinent documents and Background Material. None</p>	

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Budget for Contract No. AT-(40-1)-2081

9-1-56 - 7-31-57

<u>Salaries and Wages:</u>		\$ 9,543.00
Dr. D. S. Anthony (1/6 time academic yr.)	\$2,113.00	
Summer Investigator	1,900.00	
Research Assistants and Technicians	5,330.00	
Secretary	200.00	
2 <u>Equipment and Supplies:</u>		5,900.00
<u>Travel:</u>		500.00
4 <u>Overhead</u> (55.93% of salaries charged to AEC):		5,534.00
		<hr/>
	Total	\$21,477.00*

7

The AEC's contribution to the above budget will be \$15,067; the Contractor's contribution will be \$6,363; and the estimated unexpended balance is \$47.

\*It is recognized that the project may receive additional financial support as described in the renewal proposal.

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UNIVERSITY OF FLORIDA  
DEPARTMENT OF CHEMISTRY  
GAINESVILLE, FLORIDA

CONTRACT NO. AT-(40-1)-2081

DR. DAVID S. ANTHONY  
ASSOCIATE PROFESSOR OF CHEMISTRY  
Project Leader.

A STUDY OF THE BIOCHEMICAL RESULTS OF CERTAIN TREATMENTS  
GIVEN PATIENTS SUFFERING FROM PHENYLPYRUVIC ACID  
OLIGOPHRENIA.

Resume'

The Contractor will continue studies, in cooperation with the Sunland Training Center (formerly called the Florida Farm Colony), a State of Florida institution, to evaluate from the biochemical viewpoint certain treatments given patients suffering from the disorders of phenylpyruvic acid oligophrenia. An extensive sampling program with recording of the patients will continue, the sampling of urine being required in order to follow the metabolic patterns involved in the patients. Tracer studies will be carried out utilizing Carbon-14 labelled phenylpyruvic acid and phenylalanine, and the program will probably be extended in the study of the breakdown pattern of the metabolism to include Carbon-14 labeled pyridoxine and tyrosine, with due attention to age of patient.

C. S. Shoup

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UNITED STATES ATOMIC ENERGY COMMISSION  
WASHINGTON, D. C.

Contract Authorization No. EM-59-99

TO : S. R. Sapirie, Manager  
Oak Ridge Operations Office

~~AUG 7 1958~~  
SEP 5 1958

FROM : Charles W. Shilling, M. D., Acting Director  
Division of Biology and Medicine, Washington

SUBJECT : FUND AUTHORIZATION AND TRANSMITTAL OF RESEARCH PROPOSAL FOR  
CONTRACT NEGOTIATION

REFERENCE : AEC 102/16 APPROVED OCTOBER 7, 1953, AS IMPLEMENTED BY MEMORANDUM  
TO MANAGERS, OPERATIONS OFFICES, DATED OCTOBER 23, 1953, JOINTLY  
SIGNED BY THE DIRECTORS OF THE DIVISIONS OF RESEARCH AND BIOLOGY  
AND MEDICINE.

SYMBOL : ~~EM~~:JFH

The research proposal described below has been approved by the  
Division of Biology and Medicine, funds are available, and you  
are authorized and requested to negotiate a contract in  
accordance with the following terms and conditions:

1. Institution: University of Florida
2. Investigator (s): David S. Anthony
3. Title: "A Study of the Biochemical Results of Certain Treatments  
Given Patients Suffering from Phenylpyruvic Acid Oligo-  
phrenia"
4. ( ) New Contract, ( x ) Renewal of Contract No. AT(40-1)2081
5. Duration: 9/1/58 through 8/31/59
6. AEC Technical Representative: James Haggerty
7. Funds are authorized for the obligation of this contract  
as follows:

<u>Allotment No.</u>	<u>Budget Category</u>	<u>Previous</u>	<u>Amount This Action</u>	<u>Total</u>
<u>06-91-91 (24)</u>	<u>6320</u>	<u>          </u>	<u>\$15,067</u>	<u>\$15,067</u>
<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>

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- 8. It is suggested that in the best interests of the government the following type contract be negotiated: **Lump-sum**
- 9. It is requested that the title to any capital equipment procured under this contract shall be vested with:

(  ) the contractor; ( ) the government.

- 10. If radioisotopes are to be used in this research, it is requested that the savings available to the contractor under the Radioisotope Research Support Program (Ref. AEC Manual Chapter 7510) be considered in the negotiation of the amount to be funded under this contract.

- 11. Other comments:

**Commission support has been approved at a level of \$15,114 less the unexpended balance of \$47.**

- 12. Security Requirements:

In accordance with the provisions of Chapter 3403 of the AEC Manual and the requirements of the Declassification Guide, it has been determined that the following security precautions should be taken in connection with the proposed research contract:

**Since there is essentially no chance for the development of restricted data, this project has been placed in Category I as defined in Chapter 3403 of the AEC Manual.**

- 13. Reports: (  ) Reports are to be required as provided for by "Revised Guide for the Submission of Research Proposals" dated February 8, 1954.

( ) Special reports instructions are as follows:

Enclosures: (  ) "A" - Proposal, dated \_\_\_\_\_  
 (  ) "B" - Notification letter, dated SEP 5 1954  
 ( ) "C" - Other correspondence, none letters

Distribution:

Addressee: Original (w encl.)      Division File: Yellow copy (w encl.)  
 1st copy (w encl.)                      Pink copy (w/o encl.)  
 2nd copy (w encl.)

Branch File: White copy (w encl.)

Program Analysis Branch:  
 White copy (w/o encl.)

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DR C S SHOUP

*JS*

DIVN OF BILOGY AND MEDICINE USAEC SAKRIDGE TENN

REFERENCE ORS JDB QUESTION NBR 1 PROPOSAL AS SUBMITTED  
IS CORRECT. CONSISTENT WITH ORIGINAL CONTRACT AND ALSO  
MODIFICATION NBR 1. RECHECKED THROUGH OUR ADMINISTRATION  
AS OK TO CHARGE OVERHEAD ONLY ON CHARGES TO AEC. CURRENT

*WTO!*

~~AUDITED RATE IS 65.23 PERCENT RATHER THAN EARLIER 55~~

PERCENT OR STILL EARLIER 53.01 PERCENT. QUESTION NBR 2.

AMOUNT OF NEW FUNDS MAY BE REDUCED BY THE \$47 IF DESIRED

TO CONFORM TO YOUR POLICY. FINAL FIGURES NOT YET

AVAILABLE BUT PROBABLY EXEXPENDED BALANCE WILL BE

SUBSTANSTIALLY LARGER THAN

*\$47* TO \$501

*446!*

D S ANTHONY

ORS JDB 1 1 AEC 65.95 TT 53.01

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REC

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Proposal for Renewal of Contract No. AT-(40-1)-2081  
(Renewal period Sept. 1, 1958 to August 31, 1959)

1. Title of Project: A study of the biochemical results of certain treatments given patients suffering from phenylpyruvic acid oligophrenia.
2. Location: University of Florida, Department of Chemistry, in cooperation with Sunland Training Center (formerly called Florida Farm Colony). Both are situated at Gainesville, Florida.
3. Scientific Background: The scientific background has been given in detail in the original proposal and is brought up to date in the accompanying progress report. Budgeted financial support amounted to \$15,022 from the United States Atomic Energy Commission during the period 9/1/56 to 8/31/57. During the period 9/1/57 to 8/31/58 the A.E.C. provided \$12,662 in new funds plus \$3,275 of unexpended balance remaining from the previous contract period.

4. Scientific Personnel:

(a) Senior investigator - David S. Anthony. Dr. Anthony will employ approximately 1/6 of his time on this project during the nine month period 9/1/58 to 6/1/59. See curriculum vitae in original proposal.

(b) Associate investigator - Charles H. Carter, M.D. A fraction estimated at 1/10 of Dr. Carter's time will be employed on this project. No compensation is requested. See curriculum vitae in original proposal.

(c) Summer investigator - to be appointed. This man, of equivalent or greater competence than (a) or (b) above will be selected from the best available scientific talent to work full time for two months in the summer.

(d) Radiologist Consultant. With the development of the U. of Florida Medical School it is now believed that this item is no longer necessary.

5. Other Personnel:

(a) Half-time research assistant - Perla D. Lincangco. Miss Lincangco has been the assistant on this project for the past year and is compiling

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M.S.  
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?

the data obtained in partial fulfillment of the requirements first for her M.S. and perhaps later for her Ph.D. degree in chemistry (biochemistry).

(b) Summer laboratory assistant - to be appointed. On the basis of present very satisfactory experience, it seems highly desirable to have a full-time assistant for three months (June, July, August) at approximately the post B.S. level. We have been able to obtain a highly competent man during the present contract period on a basis similar to that proposed above.

(c) Undergraduate laboratory helper or semi-technical assistant. Two such helpers, each employed 25-50 hours per month during the academic year and the equivalent of one full time during June, July and August provides the amount of semi technical assistance required. Now that satisfactory methods for part of the research planned have been developed, this kind of assistance is useful in repeated routine analysis so necessary to compile the mass of data necessary for statistically significant results on human subjects.

(d) Secretary - none requested for the period of this renewal request, since "red tape" has prevented payment of secretaries whose services have been employed. This is an economy over the original proposal and represents an increased contribution by the University of Florida.

6. Other Financial Assistance: None

7. Materials, Equipment, and Facilities: See original proposal. The use of the Beckman DU spectrophotometer by this project has been so heavy that it was necessary for the Dept. of Chemistry to obtain an additional instrument at a cost in excess of \$2,000. A new pH meter was also obtained for similar reasons. Extensive additions to the radioactivity counting equipment have been made with the needs of this project one factor in determining the type of equipment obtained.

The continuing importance of the contribution made by the Sunland Training Center clinical laboratories cannot be over emphasized. An extensive sampling

program with much record keeping has been carried out. Some of the samples must be obtained by continuous catheterization, with as many as 12 collections daily. Since many of the patients under study have the intelligence of a vegetable, the magnitude of the problem can be appreciated.

The C-14 labeled phenylpyruvic acid (PPA) obtained during this past contract period has helped materially in developing a satisfactory method for PPA. The labeled phenylalanine is now being used in method development studies. It is probable that labeled pyridoxine and tyrosine will be needed in similar studies in the coming year. It is not yet clear whether it will be necessary to use any of the tagged compounds in human studies, although we will attempt to obtain a maximum amount of information without using radioactive tracers. This is especially important since the average age of the oligophrenia patients is quite low.

8. Travel: Travel will be to scientific meetings and to institutions carrying out work in the same field. Time-saving ideas were obtained on a trip taken during the past year.

9-12. Budget information: See attached total cost budget and reports of expenditures on the current contract number AT-(40-1)-2081 Modification #1.

FINANCIAL REPORT #1

Contract #AT-(40-1)-2081 Modification #1

Expenditure and Estimated Expenditure of Funds Received from the A.E.C.

	Budgeted for Year	Spent During first 8 months of contract	Balance	Projected further expense to 8/31/58	Amount estimated over (+) or under (-) the contract
Personnel	\$7658	\$3569	\$4089	\$4082	- \$7
Supplies & Equipment	5700	4066	1634	1600	- 34
Travel	500	250	250	250	+ 0
Overhead*	2079	1183	896	890	- 6
<b>TOTALS</b>	<b>15,937</b>	<b>9,068</b>	<b>6,869</b>	<b>6,822</b>	<b>- 47</b>

\*Overhead due from A.E.C. calculated on basis of 15% of total expenditures (0.15 x 7885 = \$1183 at 8 mos. and 0.15 x 13817 = \$2073 at termination of contract).

FINANCIAL REPORT #2  
 Contract #AT-(40-1)2081 Modification #1

Contribution and Estimated Contribution by the State of Florida

	Budgeted for year	Contribution first 8 months	Balance	Estimated further Contribution to 8/31/58	Amount of Contribution over (+) or under (-) the contract
Personnel	5025	3869	1156	1256	+ 100
Supplies & Equipment	2350	1763	587	600	+ 13
Travel	100	0	100	0	- 100
Overhead*	1980	1170	810	1801	+ 991
	9455	6802	2653	3657	+ 1004

\* Florida contribution to overhead calculated as difference between normal U. of Fla. overhead charge and the 15% of total expenditures requested of the A.E.C. At the time of the renewal proposal, the U. of Fla. overhead rate was 53.01% of salaries. This rate has since gone up and the government audited overhead rate for the period covered by this report is 65.93%. This increase is reflected in a larger overhead contribution by the State of Florida.

TOTAL COST BUDGET  
(Renewal of Contract No. AT-(40-1)-2081, Modification #1)

Category	Contribution by State of Florida		Requested by A.E.C.	TOTAL
	Sunland Train. Cent.	Univ. of Fla.		
A. Personnel				
1. Principal Investigator		650(1)	1,463(2)	2,113
2. Associate Investigator	900(3)		1,900(4)	900
3. Summer Investigator			2,530(5)	1,900
4. Research Asst.			900	2,530
5. Summer lab asst.			1,600	900
6. Undergrad. semi-tech. assts.			1,600	1,600
7. Technicians	3,200(6)	300(7)		3,500
8. Secretary		200		200
B. Supplies & Equipment				
1. Glassware and misc. small items of equipment	250	1,000	700	1,950
2. Non-radioactive chemicals and drugs	600	600	700	1,900
3. Isotopically labeled materials		50	1,600	1,650
4. Capital equipment (densitometer, photometer, recorder)			1,250	1,250
C. Travel			500	500
D. Overhead		3,563(8)	1,971(8)	5,534(8)
TOTALS	4,950	6,363	15,114	26,427

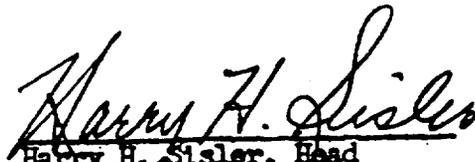
1108454

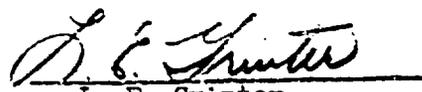
NOTES ON TOTAL COST BUDGET

- (1) Computed on the basis of 1/12 of Dr. Anthony's salary for the academic year. Teaching load credit for direction of an M.S. candidate in this Department would normally be 1/12 of the total work load.
- (2) This item represents \$162.50 per month times nine months. This is exactly the same amount Dr. Anthony has been receiving in the same time period on the present contract. Although previously the amount was calculated on the basis of 1/5 of Dr. Anthony's total salary, due to increase in his base pay, the amount is substantially less than 1/5 of his total salary. No increase in this item is desired, since the present number of dollars conform better to Departmental policy. Rather, a slight reduction in time allocated (from 1/5 time to 1/6 time) is desired.
- (3) Calculated on the basis of approximately 1/12 of Dr. Carter's annual salary.
- (4) This amount is \$950 per month times two months, an amount which is believed sufficient to attract and/or hold an investigator of the caliber required.
- (5) Research assistants receive approximately \$211 per month. This figure is twelve times that amount.
- (6) It is estimated that the special care of patients for this project plus the clinical laboratory work requires the services of approximately one full-time technician. Currently, during a period of intensive sampling, this figure is too conservative. However, it is believed that over the period of the proposed contract this represents the best estimate.
- (7) Glassblower and machinist services.
- (8) Overhead at the University of Florida is calculated on the basis of 65.93% of salaries which is \$5534. The A.E.C. is being requested to pay \$1971 which is 15% of the total budget requested. The difference of \$3563 is being contributed by the University of Florida.

This Proposal for Renewal of Contract Number AT-(40-1)-2081 is respectfully submitted by:

  
David S. Anthony  
Principal Investigator

  
Harry H. Sisler, Head  
Department of Chemistry

  
L. E. Grinter  
Director of Research  
University of Florida

1108456

TO : Addressees Listed Below  
 FROM : John R. Moore, Director, Contract Division  
 SUBJECT: CONTRACTUAL DOCUMENTS FOR REVIEW, COMMENTS AND INITIALING

DATE: September 27, 1957

The document(s) listed below are forwarded for your review, comments and initials. Upon completion of your review, please attach your comments, if any, and forward to next in turn. Expeditious handling of this matter will be appreciated.

Modification 1 to Contract AT-(40-1)-2081 with the University of Florida

<u>Addressees:</u>	<u>Division:</u>	<u>Init:</u>	<u>Date:</u>	<u>Remarks:</u>
1. <del>R. C. Humphries</del>	<del>Contract</del>	<i>RBH</i>	<i>9/26/57</i>	
2. <del>A. E. Miller</del>	<del>Budget</del>	<i>AM</i>	<i>9/27/57</i>	
3. <del>G. S. Shoup</del>	<del>Res. &amp; Dev.</del>	<i>SS</i>		
4. <del>L. D. Mackay</del>	<del>Finance</del>	<i>BL</i>	<i>9/27/57</i>	
5.				
6.				

RETURN TO:

Alice Brown

Contract Division

Tel.: 4719

1108457

# Office Memorandum • UNITED STATES GOVERNMENT

TO : J. W. Ould, Jr., Assistant General Counsel

DATE: September 20, 1957

FROM : John E. Moore, Director, Contract Division

SUBJECT: REQUEST FOR PREPARATION OF MODIFICATION TO CONTRACT AT-(EO-1)-2081  
UNIVERSITY OF FLORIDA

SYMBOL: ACC:BSH

Please prepare an appropriate modification to the subject contract to extend the period to August 31, 1958, with new funds in the amount of \$12,662.

A Request for Contract Action dated September 16, 1957, from C. S. Shoup of the Research and Development Division, is attached for your use.



John E. Moore

Enclosures:

1. Request for Cont. Action
2. Budget
3. Resume'
4. Cont. Auth. EM-59-80
5. Proposal

CC: C.S. Shoup  
L. D. MacKay  
A. Brown, w/encls. 1, 2 & 4

1108458

1. TO: J. R. Moore Chairman Contract Board. From: Res. & Dev. Div.

It is requested that the Contract Board take the necessary action to process the following described contract action in accordance with the provisions of Bulletin OR-O&M-13:

2. Nature of Action Requested

[ ] Selection of New Contractor and Negotiation of Contract.

[x] Modification of Contract No. AT-(10-1)-2081

Contractor: University of Florida Gainesville, Florida

[ ] Review and approval of Contract, Sub-contract or Purchase Order.

[ ] Other (Explain)

Number: Name:

3. Nature of Services to be Covered by Contract

Construction [ ] Architect-Engineer [ ] Other [x] (Explain) Research

4. Funding Amount to be Obligated by this Contract Action \$12,662.00

Source of Funds

Approved ORO Financial Plan, Quarter, Fiscal Year 19

Project No. or, Activity No. 6320

Funds to be Obligated: Allotment No. 06-81-91(24) F.Y. 1958 Funds)

Procurement Directive No. BM-58-80 Dated 9-9-57

Issuing Office Div. of Biology & Medicine

Concurrence in Funding Statement: (signed) [Signature] Chief, Budget Branch

5. Project or Activity to be Covered by Contract Action:

Location of Work: Construction Directive No.

Estimated Cost of Work to be Covered by this Contract Action \$

Schedule: Date Work to Start Estimated Completion Date

Description of Project or Activity:

(If more space is required use separate sheets and attach hereto:)

6. Contract Board Docket  
No. \_\_\_\_\_  
(To be assigned by  
Board Secretary)

7. Request Submitted By: (signed) \_\_\_\_\_

Date: ~~SEP 16 1957~~ \_\_\_\_\_

C. S. SHOUP  
CHIEF, BIOLOGY BRANCH  
RESEARCH AND DEVELOPMENT DIVISION

8. Complete Description of Services to be Furnished by Contractor:

Headquarters designated research contract

TITLE: "A Study of the Biochemical Results of Certain Treatments Given  
Patients Suffering from Phenylpyruvic Acid Oligophrenia"

(If more space is required use separate sheets and attach hereto:)

9. Description of other changes to be covered by Modification:

Modify contract to extend the period to August 31, 1958, with new funds  
in the amount of \$12,662.

(If more space is required use separate sheets and attach hereto:)

10. Negotiated Contracts. (Show why it appears desirable to negotiate new contract or to negotiate  
modification to existing contract)

Memorandum from Charles W. Shilling to S. R. Sapirie dated September 9, 1957.

(If more space is required use separate sheets and attach hereto:)

11. Contracts, Subcontracts, or Purchase Orders Submitted for Review and Approval: (Furnish brief descrip-  
tion of action in this space and attach pertinent documents)

None

12. Disputes:

Attach a statement summarizing the dispute together with pertinent documents and Background  
Material.

None

BUDGET FOR CONTRACT NO. AT-(10-1)-9011  
 FOR PERIOD 9-1-57 - 8-31-58

<u>Salaries and Wages:</u>		\$12,683.00
Dr. L. S. Anthony (1/5 time for 9 mos.)	\$2,088.00	
Research Associate	900.00	
Summer Investigator	1,900.00	
Research Assistants and Technicians	7,595.00	
Secretary	200.00	
<u>Equipment and Supplies:</u>		3,050.00
<u>Travel:</u>		600.00
<u>Overhead:</u> (53.01% of salaries charged to AEC)		4,059.00
		<hr/>
	TOTAL	\$25,392.00

The AEC's contribution to the above budget is \$12,662; the University's contribution will be \$9,455; and \$3,275 is the estimated unexpended balance.

1108461

UNIVERSITY OF FLORIDA  
DEPARTMENT OF CHEMISTRY  
GAINESVILLE, FLORIDA.

CONTRACT NO. AF-(11-1)-2081

DR. DAVID S. ANTHONY  
ASSOCIATE PROFESSOR OF CHEMISTRY  
PROJECT LEADER.

A STUDY OF THE BIOCHEMICAL RESULTS OF CERTAIN TREATMENTS GIVEN  
PATIENTS SUFFERING FROM PHENYLPIRUVIC ACID GLIOPHRENIA.

Resume'

The Contractor, with cooperation of the Florida Farm Colony, will continue studies of the metabolism and biochemical relationships of phenylalanine, tyrosine, phenylpyruvic acid and their relatives in treated and untreated mental patients, including development of suitable analytical procedures. Studies of excretory products will continue to determine dosage interference with phenylpyruvic acid analysis, sources of the carbonyl group, and various modes of utilization of labeling. Separation, identification, and quantitation of compounds excreted will continue.  $C^{14}$ -labeled phenylpyruvic acid and phenylalanine may be used to further the background work already accomplished.

C. S. Shoup

1108462

UNITED STATES ATOMIC ENERGY COMMISSION  
WASHINGTON, D. C.

Contract Authorization No. EM-58-80

SEP 9 1957

TO : S. R. Sapirie, Manager  
Oak Ridge Operations Office

FROM : Charles W. Shilling, M. D., Deputy Director  
Division of Biology and Medicine, Washington, D. C.

SUBJECT : FUND AUTHORIZATION AND TRANSMITTAL OF RESEARCH PROPOSAL FOR  
CONTRACT NEGOTIATION

REFERENCE : AEC 102/16 APPROVED OCTOBER 7, 1953, AS IMPLEMENTED BY MEMORANDUM  
TO MANAGERS, OPERATIONS OFFICES, DATED OCTOBER 23, 1953, JOINTLY  
SIGNED BY THE DIRECTORS OF THE DIVISIONS OF RESEARCH AND BIOLOGY  
AND MEDICINE.

SYMBOL : **BMM:JFE**

The research proposal described below has been approved by the  
Division of Biology and Medicine, funds are available, and you  
are authorized and requested to negotiate a contract in  
accordance with the following terms and conditions:

1. Institution: University of Florida
2. Investigator (s): David S. Anthony
3. Title: "A Study of the Biochemical Results of Certain Treatments  
Given Patients Suffering from Phenylpyruvic Acid Oligo-  
phrenia"
4. ( ) New Contract, ( x ) Renewal of Contract No. AT(40-1)2081
5. Duration: 9/1/57 through 8/31/58
6. AEC Technical Representative: James F. Haggerty
7. Funds are authorized for the obligation of this contract  
as follows:

<u>Allotment No.</u>	<u>Budget Category</u>	<u>Previous</u>	<u>Amount This Action</u>	<u>Total</u>
06-81-91 (24)	6320		\$ 13,124	\$ 13,124

1108463

G 8021

SEP 11 1957

8. It is suggested that in the best interests of the government the following type contract be negotiated: **Lump-sum**

9. It is requested that the title to any capital equipment procured under this contract shall be vested with:

the contractor;       the government.

10. If radioisotopes are to be used in this research, it is requested that the savings available to the contractor under the Radioisotope Research Support Program (Ref. AEC Manual Chapter 7510) be considered in the negotiation of the amount to be funded under this contract.

11. Other comments:

The Committee has approved \$13,124 in new funds, plus the estimated unexpended balance of \$3,275, making an operational level of \$16,399.

12. Security Requirements:

In accordance with the provisions of Chapter 3403 of the AEC Manual and the requirements of the Declassification Guide, it has been determined that the following security precautions should be taken in connection with the proposed research contract:

Since there is essentially no chance for the development of restricted data, this project has been placed in Category I as defined in Chapter 3403 of the AEC Manual.

13. Reports:  Reports are to be required as provided for by "Revised Guide for the Submission of Research Proposals" dated February 8, 1954.

Special reports instructions are as follows:

Enclosures:       "A" - Proposal, dated \_\_\_\_\_  
                   "B" - Notification letter, dated SEP 9 1957  
                   "C" - Other correspondence, none letters

Distribution:

Addressee:    Original (w encl.)      Division File: Yellow copy (w encl.)  
                  1st copy (w encl.)      Pink copy (w/o encl.)  
                  2nd copy (w encl.)

Branch File:    White copy (w encl.)

Program Analysis Branch:  
                  White copy (w/o encl.)

UNIVERSITY OF FLORIDA  
GAINESVILLE

DEPARTMENT OF CHEMISTRY

August 15, 1957

Dr. C. S. Shoup  
Chief, Biology Branch  
Research and Development Division  
United States Atomic Energy Commission  
Oak Ridge, Tennessee

RE: ORS:EMM

Dear Sam:

The financial report on this project is difficult to portray clearly. Part of the trouble lies in the very different cost categories, accounting methods, etc. used here in contrast to those at major A.E.C. installations with which we are both more familiar. I will try to reconstruct the figures and the methods by which they were obtained.

The projected further expense (Revised Financial Report), exclusive of overhead, totals \$7,618 (\$3106 and \$4012 and \$500). Applying the rule of overhead chargeable to the A.E.C. shall be 15% of total contract, yields an estimated additional overhead charge of \$1,143 ( $\$7618 \times 0.15$ ). This \$1143 added to the \$354 already expended totals \$1497. In the original proposal, we asked the A.E.C. for \$1959. The difference, as you have noted is \$462. The figure of \$816 did not take into account the \$354 already expended. Of course, for a final total, this must be taken into account. Therefore, the amount of unexpended A.E.C. funds anticipated is reduced to \$3,275.

I hope to be in Oak Ridge for a day next week. If so, I will certainly call you and can answer any further questions you might have at that time.

Sincerely,

*David S. Anthony*  
David S. Anthony

DSA:lt

G 7387

AUG 20 1957

1108465

UNIVERSITY OF FLORIDA

Gainesville

Department of Chemistry

July 19, 1957

Dr. C. S. Shoup, Chief  
Biology Branch  
Research and Development Division  
United States Atomic Energy Commission  
Oak Ridge, Tennessee

Ref: ORS:EMM

Dear Dr. Shoup:

The enclosures, I hope, will answer the questions which you raised in your letter of July 11.

With reference to point one, your figures are correct. In calculating the amount of overhead the University normally would charge, I must have read the figure as 7,000 when, in fact, it was 7,600. Accordingly, there was an error in the University contribution to overhead value which, naturally, introduced the same error in the total overhead value, in the total University contribution value, and in the total contract value. These have been corrected on the enclosures.

With reference to your second question, we have attempted to comply by providing a table of estimated University contribution to the contract and by revising the table on A.E.C. contribution to include estimated overhead.

With reference to your question on incident reports, there were no incidents to report.

I am sorry that the report and proposal submitted was not as complete as desired. I will know better the next time.

Sincerely,

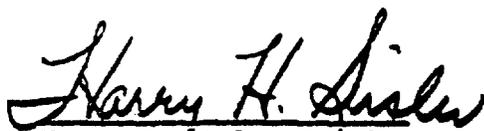


David S. Anthony  
Principal Investigator

DSA:eb

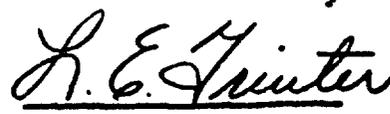
Enclosures (4)

APPROVED:



Harry H. Sisler, Head  
Department of Chemistry

APPROVED:



L. E. Grinter  
Director of Research

JUL 25 1957  
G 6511

1108466

CORRECTIONS FOR TOTAL COST BUDGET

(Renewal of Contract No. AT-(40-1)-2081)

- A. Personnel
  - B. Supplies and Equipment
  - C. Travel
- } All figures in renewal proposal correct as submitted

An error in transcription during calculation of overhead resulted in an error in the amount of overhead contribution by the University of Florida, and, therefore, a corresponding error in total contribution by the University and in the totals for the proposed contract. The Overhead and Totals sections should be corrected to read:

CATEGORY	CONTRIBUTIONS BY STATE OF FLORIDA		REQUESTED of A.E.C.	TOTAL
	By Fla. Farm Colony	By Univ. of Fla.		
D. OVERHEAD		\$ 1,980	\$ 2,079 <sup>(8)</sup>	\$ 4,059 <sup>(8)</sup>
TOTALS	\$4,650	\$ 4,805	\$15,937 <sup>(9)</sup>	\$25,392

REVISED FINANCIAL REPORT

Contract #AT-(40-1)-2081

I. Expenditure and Estimated Expenditure of Funds Received from the A. E. C.

	Budgeted for year	Spent during first eight months of contract	Balance	Projected further expense to 8/31/57	Over (+) or under (-)
Personnel	\$7213	\$2394	\$4819	\$3106	- \$1713
Supplies and Equipment	5250	238	5012	4012	- 1000
Travel	600	0	600	500	- 100
Overhead	1959	354	1605	1143	- 816
TOTAL	\$15,022	\$2986	\$12,036	\$8761	- \$3629

1108468

FINANCIAL REPORT

Contract #AT-(40-1)-2081

II. Contribution and Estimated Contribution by the State of Florida

	First eight months	Estimated Total for year	Budgeted in Original Proposal	Difference*
A. Personnel	\$4175	\$5450	\$5400	(+) \$ 50
B. Supplies and Equipment	1300	1700	1300	(+) 400
C. Overhead	916	1420	1865	(-) 445
TOTAL	\$6391	\$8570	\$8565	(+) \$ 5

\*A (+) sign in the difference column indicates a contribution by the State of Florida greater than that budgeted. A (-) sign indicates the converse.



(b) Laboratory helpers and/or undergraduate semi-technical assistants. These employees will be at a level of competence approximately that of a third year undergraduate student in chemistry. Each such undergraduate assistant would be employed 25 to 50 hours per month during the academic year as his class schedule permitted. It has been our experience that two such assistants are of maximum usefulness. During the summer, the equivalent of one such assistant full-time for  $3\frac{1}{2}$  months appears, on the basis of current experience, provides the amount of semi-technical assistance required.

(c) Technicians. None requested for the period of this renewal request. This is an economy over the original proposal and is based on experience.

(d) Secretary. Required for a small fraction of time to type reports, abstracts, handle correspondence and filing.

6. OTHER FINANCIAL ASSISTANCE: None

7. MATERIALS, EQUIPMENT, AND FACILITIES: See original proposal. It should be added here that the Department of Chemistry has provided a Beckman DU spectrophotometer for the use of this project. It has been in use on this work an average of nearly half of every day.

The importance of the clinical laboratory facilities provided by the Florida Farm Colony cannot be over-emphasized. During the past year, they have taken many samples of urine for analysis, have kept invaluable clinical records on the oligophrenia patients, have made creatinine analyses, etc.

A major item of equipment that will be needed during the coming year is a paper chromatogram radioactivity scanner to locate and measure radioactive (tracer) spots on developed chromatograms.

A large material item will be several  $C^{14}$  labeled substances required for analysis or for human study. Several of the following will be needed:

- (a) 3 -  $C^{14}$  phenylpyruvic acid
- (b) 2 -  $C^{14}$  phenylpyruvic acid
- (c) 3 -  $C^{14}$  phenylalanine
- (d) 2 -  $C^{14}$  phenylalanine
- (e) ring labeled phenylalanine
- (f) At least one kind of  $C^{14}$  labeled pyridoxine
- (g) 2 -  $C^{14}$  tyrosine

8. TRAVEL: Travel will be both to scientific meetings (perhaps to report some of the data obtained) and to the laboratories or hospitals of other investigators in the field. In this manner, it is believed unnecessary duplication can be avoided, and time-saving ideas can be exchanged.

9-12. BUDGET INFORMATION: A detailed total cost budget with footnotes is attached at the end of this proposal. Also attached is an estimated report of expenditures on the current contract number AT-(40-1)-2081.

**FINANCIAL REPORT**

Contract #At-(40-1)-2081

	Budgeted for year	Spent during first eight months of contract	Balance	Projected further expense to 8/31/57	Over (+) or under (-)
Personnel	\$7213	\$2394	\$4819	\$3106	- \$1713
Supplies and Equipment	5250	238	5012	4012	- 1000
Travel	600	0	600	500	- 100
Total	\$13,063	\$2632		\$7618	- \$2813

TOTAL COST BUDGET

(Renewal of Contract No. AT-(40-1)-2081)

CATEGORY	CONTRIBUTIONS BY STATE OF FLORIDA		REQUESTED of A.E.C.	TOTAL
	By Fla. Farm Colony	By Univ. of Fla.		
<b>A. PERSONNEL</b>				
1. Principal Investigator - D. S. Anthony	\$ 900 (3)	\$ 625 (1)	\$ 1,463 (2)	\$ 2,088
2. Associate Investigator - C. H. Carter	-----	-----	-----	900
3. Summer Investigator	-----	-----	1,900 (4)	1,900
4. Research Asst. - P. D. Linoango (½ time)	-----	-----	2,530 (5)	2,530
5. Undergraduate semi-technical assts.	3,000 (6)	400 (7)	1,665	1,665
6. Technicians	-----	100	-----	3,400
7. Secretary	-----	-----	100	200
<b>B. SUPPLIES AND EQUIPMENT</b>				
1. Glassware and misc. small items of equipment	250	1,000	700	1,950
2. Non-radioactive chemicals and drugs	500	500	500	1,500
3. Isotopically labeled compounds	-----	100	3,500	3,600
4. Capital equipment (scanner)	-----	100	1,000	1,000
<b>C. TRAVEL</b>				
<b>D. OVERHEAD</b>				
		1,663	2,079 (8)	3,742 (8)
<b>TOTALS</b>	\$4,650	\$4,488	\$15,937 (9)	\$25,075

## NOTES ON TOTAL COST BUDGET

- (1) Computed on the basis of 1/12 of Dr. Anthony's salary for the academic year. Teaching load credit for direction of an M. S. candidate in this Department would normally be 1/12 of the total work load.
- (2) This item represents \$162.50 per month times nine months. This is exactly the same amount Dr. Anthony has been receiving in the same time period on the present contract. Although previously the amount was calculated on the basis of 1/5 of Dr. Anthony's salary, the amount now is substantially less than 1/5 of his salary. No increase in this item is desired, since the present number of dollars conforms better to Departmental policy.
- (3) Calculated on the basis of approximately 1/12 of Dr. Carter's annual salary.
- (4) This amount is \$950 per month times two months, an amount which is believed sufficient to attract and/or hold an investigator of the caliber required.
- (5) Research assistants receive approximately \$211 per month. This figure is twelve times that amount.
- (6) It is estimated that the special care of patients for this project plus the clinical laboratory work requires the services of approximately one full-time technician.
- (7) Glassblower and machinist services.
- (8) Overhead at the University of Florida is calculated on the basis of 53.01% of salaries which is \$3742. The A. E. C. is being requested to pay \$2079 which is 15% of the total budget requested. The difference of \$1663 is being contributed by the University of Florida.
- (9) This amount might be reduced by approximately \$2800 if the anticipated unexpended funds at the termination of the present contract (August 31, 1957) can be applied directly to this proposed renewal.

This Proposal for Renewal of Contract Number AT-(40-1)-2081 is respectfully submitted by:

David S. Anthony  
David S. Anthony  
Principal Investigator

Harry H. Sisler  
Harry H. Sisler, Head  
Department of Chemistry

L. E. Grinter  
L. E. Grinter  
Director of Research

## Office Memorandum • UNITED STATES GOVERNMENT

TO : J. W. Ould, Jr., Assistant General Counsel

DATE: September 10, 1956

FROM : John R. Moore, Director, Contract Division

SUBJECT: REQUEST FOR NEW CONTRACT WITH UNIVERSITY OF FLORIDA  
GAINESVILLE, FLORIDA

SYMBOL: ADC:RGH

Please prepare an appropriate contract for a period of one year, beginning September 1, 1956, with Commission funds in the amount of \$15,022, in accord with the attached program and budget. Designate Mr. David S. Anthony as Senior Investigator. Include provisions for compliance with AEC Manual Chapter 7510.

Request for contract action from the Research and Development Division is enclosed for your use.

  
John R. Moore

## Enclosures:

1. Reqst. for Cont. Action
2. Budget breakdown
3. Program resume
4. Memo 8-28 fm Wash. Div. of Biology & Medicine
5. Proposed Project

CC: C. S. Shoup  
L. D. MacKay  
A. Brown, w/cy encls 1, 2 and 4

1. TO: J. R. Moore Chairman Contract Board. From: Res. & Dev. Div.

It is requested that the Contract Board take the necessary action to process the following described contract action in accordance with the provisions of Bulletin OR-O&M-19:

2. Nature of Action Requested

- X Selection of New Contractor and Negotiation of Contract. University of Florida Gainesville, Florida
Modification of Contract No. Contractor:
Review and approval of Contract, Sub-contract or Purchase Order. Number: Name:
Other (Explain)

3. Nature of Services to be Covered by Contract

Construction Architect-Engineer Other (X) (Explain) Research

4. Funding Amount to be Obligated by this Contract Action \$ 15,022.00

Source of Funds

Approved ORO Financial Plan, Quarter, Fiscal Year 19
Project No. or, Activity No.
Funds to be Obligated: Allotment No. (F.Y. 1957 Funds)
Procurement Directive No. 121-5757 Dated Aug. 28, 1956
Issuing Office

Concurrence in Funding Statement: (signed) A Miller Chief, Budget Branch

5. Project or Activity to be Covered by Contract Action:

Location of Work: Construction Directive No.
Estimated Cost of Work to be Covered by this Contract Action \$
Schedule: Date Work to Start Estimated Completion Date
Description of Project or Activity:

(If more space is required use separate sheets and attach hereto:)

6. Contract Board Docket  
No. \_\_\_\_\_  
(To be assigned by  
Board Secretary)

7. Request Submitted By: (signed)

Date: 9/7/56

*C. S. Shoup*  
C. S. SHOUP  
CHIEF, BIOLOGY BRANCH  
RESEARCH AND DEVELOPMENT

8. Complete Description of Services to be Furnished by Contractor:

Washington designated research contract .

TITLE: "A Study of the Biochemical Results of Certain Treatments Given Patients Suffering from Phenylpyruvic Acid Oligophrenia"

(If more space is required use separate sheets and attach hereto:)

9. Description of other changes to be covered by Modification:

New contract for a period of one year, beginning September 1, 1956, with Commission funds in the amount of \$15,022. Designate Dr. David S. Anthony as Senior Investigator. Include provisions for compliance with AEC Manual Chapter 7510.

(If more space is required use separate sheets and attach hereto:)

10. Negotiated Contracts. (Show why it appears desirable to negotiate new contract or to negotiate modification to existing contract)

Memorandum from C. W. Shilling to S. R. Sapirie, dated August 28, 1956.

(If more space is required use separate sheets and attach hereto:)

11. Contracts, Subcontracts, or Purchase Orders Submitted for Review and Approval: (Furnish brief description of action in this space and attach pertinent documents)

None

12. Disputes:

Attach a statement summarizing the dispute together with pertinent documents and Background Material.

None

1108479

BUDGET FOR NEW CONTRACT - DR. DAVID S. ANTHONY  
 FOR PERIOD 9-1-56 - 8-31-57

(1) <u>Salaries and Wages:</u>		\$ 12,613.00
Dr. D. S. Anthony (1/5 of time for 9 months Full time for 2 months)	\$4,530.00	
Research Associate	900.00	
Research Assistants and Technicians	5,983.00	
Radiologist Consultant	900.00	
Secretary	300.00	
2) <u>Supplies and Equipment:</u>		6,550.00
3) <u>Travel:</u>		600.00
4) <u>Overhead</u> (53.016% of salaries charged to AEC):		3,824.00
		<hr/>
	TOTAL	\$ 23,587.00

The Commission's contribution to the above budget will be \$15,022.

1108480

UNIVERSITY OF FLORIDA  
DEPARTMENT OF CHEMISTRY  
GAINESVILLE, FLORIDA

DR. DAVID S. ANTHONY,  
Associate Professor of Chemistry  
Project Leader.

A STUDY OF THE BIOCHEMICAL RESULTS OF CERTAIN TREATMENTS GIVEN  
PATIENTS SUFFERING FROM PHENYLPYRUVIC ACID OLIGOPHRENIA.

The contractor, in cooperation with the Florida Farm Colony, will develop analytical procedures and determine the metabolism and biochemical relationships of phenylalanine, tyrosine, phenylpyruvic acid and their relatives in untreated and pyridoxine-treated mental patients, utilizing isotopically-labelled compounds in development of the methodology and in human metabolism studies. It is planned that Carbon-14 or other suitable radioisotopes will be used. The metabolic fate of compounds used in treatment will be followed, and products of phenylalanine metabolism will be determined, in relation to couplings, various reactive groups identified, and hydrogen transfer. In vitro studies will be made on liver and kidney tissues, and possibly on biopsy material. In association with the program, organic syntheses may be utilized or developed, and labelling with radioisotopes other than C-14, possibly deuterium or tritium, will be a part of the procedures depending on work required. The influences of various amounts of accessory substances on metabolic pathways will be determined. Results from the work proposed will have bearing on clinical treatment and will develop the basic biochemical bases for clinical treatment.

C. S. Shoup

1108481

UNITED STATES ATOMIC ENERGY COMMISSION  
WASHINGTON, D. C.

Contract Authorization No. EM-57-87

AUG 23 1956

TO : S. R. Sapirie, Manager  
Oak Ridge Operations Office

FROM : Charles W. Shilling, M. D., Deputy Director  
Division of Biology and Medicine, Washington

SUBJECT : FUND AUTHORIZATION AND TRANSMITTAL OF RESEARCH PROPOSAL FOR  
CONTRACT NEGOTIATION

REFERENCE : AEC 102/16 APPROVED OCTOBER 7, 1953, AS IMPLEMENTED BY MEMORANDUM  
TO MANAGERS, OPERATIONS OFFICES, DATED OCTOBER 23, 1953, JOINTLY  
SIGNED BY THE DIRECTORS OF THE DIVISIONS OF RESEARCH AND BIOLOGY  
AND MEDICINE.

SYMBOL : **EM:JPH**

*C. W. Shilling for C. W. S.*

The research proposal described below has been approved by the Division of Biology and Medicine, funds are available, and you are authorized and requested to negotiate a contract in accordance with the following terms and conditions:

1. Institution: **University of Florida (and Florida Farm Colony)**
2. Investigator (s): **David S. Anthony**
3. Title: **"A Study of the Biochemical Results of Certain Treatments Given Patients Suffering from Phenylpyruvic Acid Oligophrenia"**
4. () New Contract, ( ) Renewal of Contract No. \_\_\_\_\_
5. Duration: **one year**
6. AEC Technical Representative: **James F. Haggerty** *JFH*
7. Funds are authorized for the obligation of this contract as follows:

<u>Allotment No.</u>	<u>Budget Category</u>	<u>Previous</u>	<u>Amount This Action</u>	<u>Total</u>
<u>06-71-91 (24)</u>	<u>6320</u>	<u>          </u>	<u>\$15,022</u>	<u>\$15,022</u>
<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>

*F-7563*  
58

8. It is suggested that in the best interests of the government the following type contract be negotiated: **Lump-sum**

9. It is requested that the title to any capital equipment procured under this contract shall be vested with:

the contractor;      ( ) the government.

10. If radioisotopes are to be used in this research, it is requested that the savings available to the contractor under the Radioisotope Research Support Program (Ref. AEC Manual Chapter 7510) be considered in the negotiation of the amount to be funded under this contract.

11. Other comments:

**Since the principal investigator first approached the Division on an informal basis concerning this study some months ago, it is recommended that the beginning date be set at August 1, 1956. If, for administrative reasons, this is not feasible, it is recommended that the earliest possible beginning date be made.**

12. Security Requirements:

In accordance with the provisions of Chapter 3403 of the AEC Manual and the requirements of the Declassification Guide, it has been determined that the following security precautions should be taken in connection with the proposed research contract:

**Since there is essentially no chance for the development of restricted data, this project has been placed in Category I as defined in Chapter 3403 of the AEC Manual.**

13. Reports:  Reports are to be required as provided for by "Revised Guide for the Submission of Research Proposals" dated February 8, 1954.

( ) Special reports instructions are as follows:

Enclosures:       "A" - Proposal, dated \_\_\_\_\_  
                   "B" - Notification letter, dated AUG 28 1956  
                  ( ) "C" - Other correspondence, none letters

Distribution:

Addressee:    Original (w encl.)      Division File: Yellow copy (w encl.)  
                  1st copy (w encl.)      Pink copy (w/o encl.)  
                  2nd copy (w encl.)

Branch File:    White copy (w encl.)

Program Analysis Branch:

White copy (w/o encl.)

SIGNATURE SHEET

David S. Anthony

David S. Anthony  
Principal Investigator

R. E. Page

Ralph E. Page, Dean  
College of Arts and Sciences

L. E. Grinter

L. E. Grinter, Dean  
Graduate School

## PROPOSED PROJECT

1. **TITLE:** A study of the biochemical results of certain treatments given patients suffering from phenylpyruvic acid oligophrenia.
2. **LOCATION:** Work to be done at Florida Farm Colony (Fla. state institution for mental defectives) and at Department of Chemistry, University of Fla. Both institutions are at Gainesville, Florida.
3. **SCIENTIFIC BACKGROUND:** Phenylpyruvic acid oligophrenia is a mental deficiency syndrome inherited as a Mendelian recessive character and is exhibited by about 0.5% of all mental defectives in this country. The syndrome is associated with a disturbance of phenylalanine metabolism, resulting in very high blood phenylalanine levels. A certain fraction of this phenylalanine is deaminated in the kidney and is then excreted via the urine as the abnormal compound, phenylpyruvic acid. The syndrome was first described by Fölling (1) in 1934 and later by Penrose and Quatsel (2) in 1937. In 1947 Jervis (3) showed that the fundamental metabolic error in phenylketonuria (one of the major symptoms of phenylpyruvic oligophrenia) is a reduced ability to bring about hydroxylation, i.e., a failure to convert phenylalanine to tyrosine, (parahydroxyphenylalanine). The enzyme converting phenylalanine to tyrosine was isolated from rat liver by Udenfriend and Cooper (4). The livers of phenylketonuric humans were examined with the techniques of Udenfriend and Cooper by Jervis (5), who could find no evidence of conversion of phenylalanine to tyrosine, although control livers showed high conversion. The relation of phenylalanine to tyrosine and the various metabolic defects associated with the metabolism of these amino acids are summarized in the diagram on the following page. (adapted from Daigliesh (6)).

The medical findings concerning phenylpyruvic acid oligophrenia are not always entirely clear. For example, it is not certain whether the severe degree of mental deficiency exists from birth or develops in infancy. The disease is associated with a severe defect in myelination. Some of the autopsy findings suggest a progressive demyelination of areas which had been previously myelinated, Alvord, et al, (7), although the evidence is not conclusive. Phenylpyruvic acid oligophrenia seems to fall in the group of progressive deterioration diseases of the brain where the behavioral patterns of the patients are those of a psychosis, rather than that of a brain damage in a localized area. In phenylpyruvic oligophrenia the patients show a characteristic light complexion. This absence of pigmentation may be due to either a lack of tyrosine or to inhibition of some of the enzymes by the abnormally high blood levels of phenylalanine or both, according to the work of Dancis and Balls (8).

The considerable biochemical and medical information on oligophrenia has not resulted in the development of a practical treatment effective in halting the progressive development of this disease. The very expensive and difficult procedure of maintaining patients on a diet very low in phenylalanine used by Bickel, et al, (9) among others was the only effective treatment prior to the initiation of the present work for which we are seeking support.

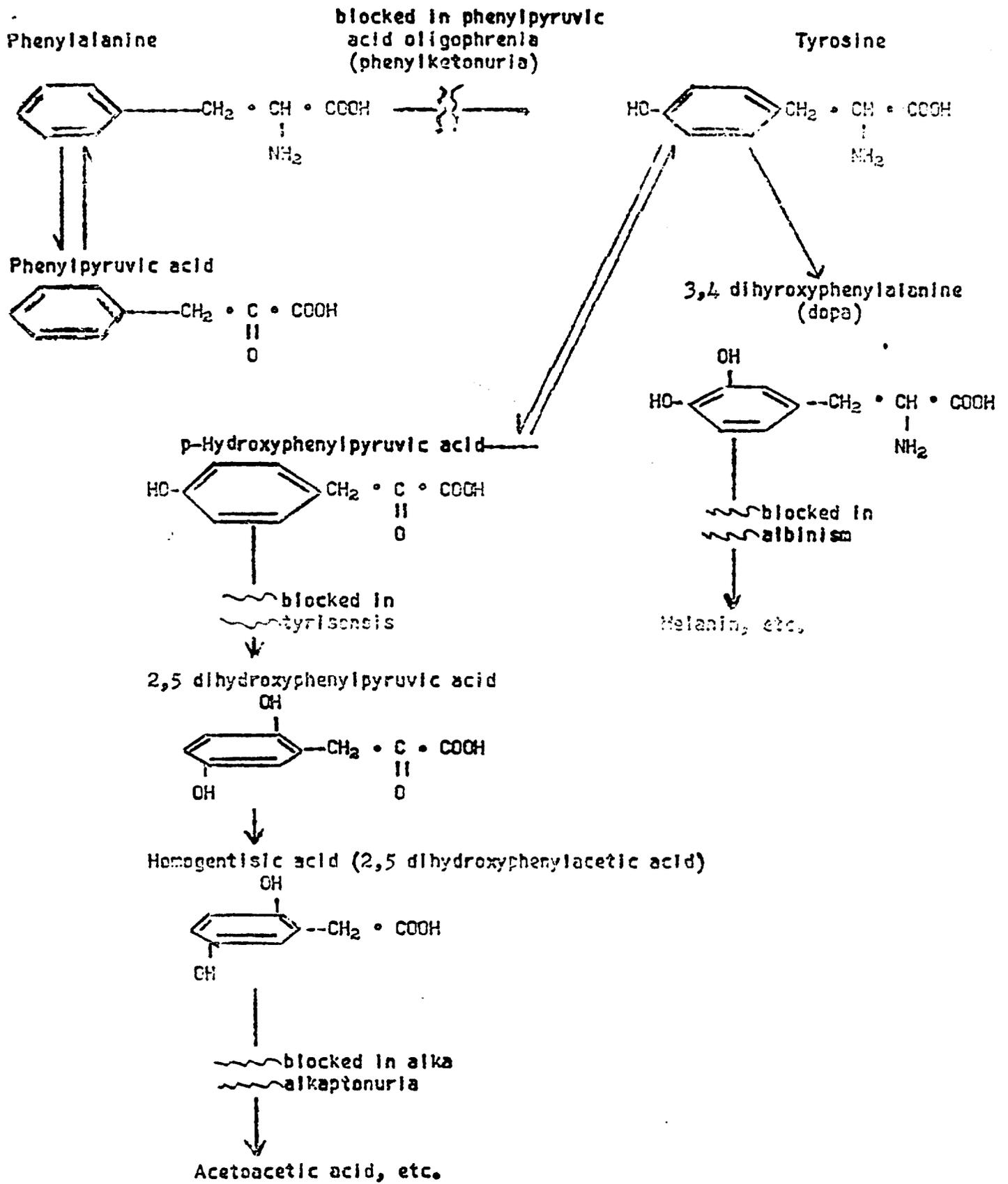


DIAGRAM I. METABOLISM OF PHENYLALANINE AND TYROSINE

The associate investigator (C.H.C.) noted at the Florida Farm Colony that oligophrenic patients who received vitamin B<sub>6</sub> (pyridoxine) were subjectively improved. It was determined that the dosage required was massive, about 300 mg. pyridoxine (orally) per patient per day. The patients lost their usual irritability, the epileptic-type seizures which ordinarily would have become progressively more frequent and more violent became less frequent and less violent. The pyridoxine treatment caused phenylpyruvic acid to disappear from the urine of oligophrenics. This latter result was not at all in accord with the reasoning which prompted the original use of pyridoxine. This vitamin was known to be an essential cofactor in deamination—transamination reactions of amino acids. Accordingly, it was thought that pyridoxine might assist the deamination of phenylalanine to phenylpyruvic acid (in the kidney) with a resultant lowering of blood phenylalanine levels and an outpouring of phenylpyruvic acid in the urine. Obviously, something else happened.

Because the treatment was so promising, the few known biochemical results were so unexpected, biochemists at the University of Fla. were called in. At this time (Feb. 1956) the principal investigator and his assistant began a biochemical study of the oligophrenic patients before and after pyridoxine treatment. Altogether, the two Florida state institutions have supported the work to the extent of over \$2500 for drugs and pro-rated salary items alone. It is unlikely that the limited budgets at the two institutions can continue to support the work at this rate of expenditure.

#### REFERENCES for Section 9.

- (1) Fölling, A. Z. *Physiol. Chem.* 58, 189 (1934).
- (2) Penrose, L. S. and Quastel, J. H. *Biochem. J.* 31, 266 (1937).
- (3) Jervis, G. A. *J. Biol. Chem.* 169, 651 (1947).
- (4) Udenfriend, S. and Cooper, J. R. *J. Biol. Chem.* 194, 503 (1952).
- (5) Jervis, G. A. *Proc. Soc. Exptl. Biol. Med.* 82, 514 (1953).
- (6) Dalglish, C. E. *Advances In Protein Chem.*, X, 31 (1955).
- (7) Alvord, E. C., Jr., et al. *J. Neuropath. and Exper. Neurol.* 9, 298 (1950).
- (8) Dancis, J. and Balis, M. E. *Paediatrics* 15, 63 (1955).
- (9) Bickel, H., Gerrard, J., and Hickman, E. M. *Acta Paediat.* 43, 64 (1954).

\* \* \*

**42 SCIENTIFIC SCOPE OF THE PROPOSED RESEARCH:** The limited objective of the proposed research will be to determine whether the pyridoxine treatment has corrected the metabolic disturbance which produced the oligophrenic symptoms. The wider objective is to learn more about the biochemistry of oligophrenia and to develop more information on a hitherto unsuspected role of pyridoxine in human metabolism. The treatment is a powerful new tool for such studies. Of course, the information obtained will be tested for its value in the clinical care of oligophrenics.

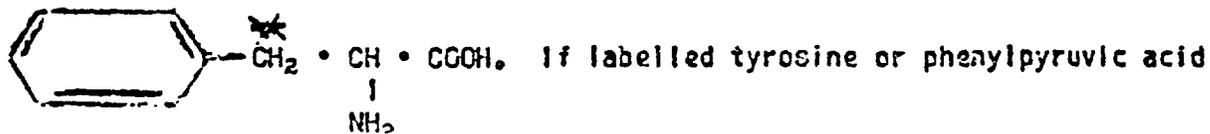
Perhaps this new approach will stimulate further work in the field. A review of the literature indicates that very little new work on oligophrenia has been in progress during the past year. This is understandable since the metabolism of phenylalanine is apparently well known, the basic biochemistry of oligophrenia has been described (apparently), and there has even been some study of the isolated enzymes involved—but no treatment other than the impractical one of a low phenylalanine diet has been of any use whatsoever.

Our work to date has been on analytical methods for the important metabolites involved, with especial reference to phenylpyruvic acid. The chemical nature of this substance is such that we suspected it would be a highly labile compound. However, the standard analytical methods used by investigators in the past involved ether extraction of acidified urine following by evaporation of the solvent, etc., etc. Nowhere did we find any precautionary notes—nor did we find any rigorous tests of analytical methods such as figures for recovery of added phenylpyruvic acid.

We interpret the results so far obtained by us as indicating substantial destruction of added phenylpyruvic acid during ether extraction and solvent evaporation. Presently we are seeking a more stable derivative of phenylpyruvic acid which might better withstand the various manipulations necessary for isolation from blood samples.

When the analytical procedures are developed to our satisfaction, the plan of attack in the proposed research will include four principal areas of investigation, viz: (We do not wish to imply that all or even a large fraction of the work proposed in all areas will be complete within a year. Rather, we are suggesting areas in which some work will take place and are suggesting plans of attack within those areas.)

- a. A determination of the metabolism of phenylalanine, tyrosine, and phenylpyruvic acid in pyridoxine-treated and untreated oligophrenic patients. This study will require the use of isotopically labelled compounds in the development of analytical methods, and in the later stages of the human metabolism studies. We plan to use phenylalanine labelled on carbon number three of the side chain, i.e.,



is used, it would also be labelled on the C closest to the ring. The early stages of this study will not require isotopes and will consist of determining

chemically the amounts of phenylalanine, tyrosine, and phenylpyruvic acid in the blood and urine of oligophrenics before and after pyridoxine treatment. Such experiments will be carried out at a standard time following a standard dietary routine. We will be guided by the results of the above studies, but at present we expect to inject standard doses of labelled phenylalanine or phenylpyruvic acid to trace their fate in pyridoxine-treated and untreated oligophrenics. It may be necessary to carry out similar studies with non-oligophrenic controls.

b. A tracing of the metabolic fate of the massive doses of pyridoxine given as treatment of oligophrenic patients. Ring-labelled pyridoxine would be best for this work but expense and lack of availability may force us to use material labelled in one of the side chains. At first, we will be "flying blind" in this work and will be comparing our data with that in the literature on the normal metabolism of pyridoxine. Because such massive doses are required, we suspect chemical participation of the pyridoxine in some reaction rather than a catalytic (enzymatic) participation. Therefore, we will be looking for some one or more of the products of phenylalanine metabolism. This connection may take the form of a coupling, transfer of a reactive group, or even transfer of hydrogen. Of course, the latter could be demonstrated best with deuterium or tritium labelled phenylalanine and/or pyridoxine.

c. It is planned to determine in vitro the effects of pyridoxine on the enzymatic behavior of liver and kidney tissue from oligophrenic patients—if and when such material becomes available at autopsy. Limited studies may be made with biopsy material. To obtain the necessary sensitivity of analytical methods with minute quantities of biopsy material, isotopic labelling of substrates would be required. With the larger masses of autopsy tissue, isotopic labelling probably will not be required. (However, we might try to develop an in vitro biological synthesis of  $C^{14}$  labelled phenylpyruvic acid.) The first in vitro studies would be merely to show whether the pathway of phenylalanine metabolism by oligophrenic liver and kidney tissue was influenced by pyridoxine. It is doubtful that there would be sufficient time to carry this work any further in the one year duration of the proposal.

d. Modifications of clinical treatment will be based on the findings from the above studies. Unique facilities are available locally to apply experimental results clinically to some or all of the more than 30 oligophrenic patients now under institutional care at the Fla. Farm Colony.

## 5. SCIENTIFIC PERSONNEL:

a. David S. Anthony, Ph.D., Assoc. Prof. of Chemistry, Univ. of Fla., principal investigator. Will be employed as full-time active participant on this project during June, July, and August and as 1/5 time employee during the remainder of year. (See curriculum vitae in Appendix.)

b. C. H. Carter, M.D., Chief Physician, Fla. Farm Colony, Associate investigator. (See curriculum vitae in Appendix.)

c. Radiologist consultant to be selected. This person will be required in order for this project to comply with the requirements for a human-use isotopic materials license.

6. OTHER PERSONNEL:

a. Iclal Sirel. M.A. in Organic chemistry. Graduate Assistant (graduate student). Title of thesis—Chlorination of diisopropyl ether at low temperatures and ultraviolet light—, published in J. Am. Chem. Soc. Work experience—Oct., 1951 to Sept., 1954 with E. R. Squibb and Sons as head of quality control laboratories in the Istanbul branch. Presently working toward [REDACTED] Her thesis will be taken from her work on oligophrenia in connection with this project.

b. Unidentified technician at Fla. Farm Colony. To care for 30 patients in a clinical-biochemical study will require time equivalent to at least one technician.

c. Typist 1/10 time from Dept. of Chemistry typist pool. Required for preparing annual report, for typing and filing literature reference and chemical stock cards, for correspondence.

7. OTHER FINANCIAL ASSISTANCE: None

8. MATERIALS, EQUIPMENT, and FACILITIES:

Already available at the Univ. of Fla. are more than \$5000 of counting and radiochemical equipment (including vibrating read electrometer with recorder and chambers, gas flow proportional counter, monitoring instruments, etc.). There is a separate counting room and also separate laboratories for (a) low-level tracer chemistry, (b) high-level radiochemical work, and (c) non-tracer biochemistry.

The Fla. Farm Colony is a modern, well-equipped state institution for mental patients. There is a small, modern hospital and there are detached cottages for housing patients undergoing special treatment or therapy. Because many patients at such institutions require periods of isolation, the Colony is well designed to provide the isolation necessary during the experimental and clinical studies, especially those employing radioactive tracers.

*Educational*

TOTAL COST BUDGET

	Contributions by State of Fla. by Fla. Farm Col.	Contributions by State of Fla. by Univ. of Fla.	Requested of AEC	Total
<b>A. Personnel</b>				
1. Principal Investigator-D. S. Anthony		1100 (1)	3430 (2)	4530
2. Associate Investigator-C. H. Carter, M.D.	900 (3)		---	900
3. Research assistant-Iclial Sirel (1/2 time)			2133	2133
4. Radiologist consultant			900	900
5. Technicians	3000 (4)	400 (5)	---	3400
6. Non-technical assistant			450	450
7. Secretary (1/10 time)			300	300
<b>B. Supplies and Equipment</b>				
1. Glassware and misc. small items of equipment	250	250	250	750
2. Non-radioactive chemicals	500	200	3000 (6)	3700
3. Isotopically labelled compounds		100	1500	1600
4. Capital equipment (Chromatocabs)			500	500
<b>C. Travel</b>				
			600	600
<b>D. Overhead</b>				
			1959 (8)	3824
<b>TOTALS</b>	4650	3915	15022	23587

(7)

1845 (8)

(See all notes on the following page for the reference numbers above.)

## NOTES

- (1) University contribution to this project is calculated as 2/12 of annual (9 month) salary - the fractional teaching load credit given for Dr. Anthony's instruction of Miss Sirel.
- (2) Dr. Anthony's salary item is for direct research participation during 9 months at 1/5 time (\$1625) plus 2 months in the summer at full time (\$1805). See attached letter from J. Wayne Reitz, President of the University of Florida, concerning University of Fla. policy on outside employment. The University of Fla. pays all of the remaining 4/5 (\$6500) of Dr. Anthony's salary.
- (3) Fla. Farm Colony contribution is calculated at 1/10 of Dr. Carter's annual salary - the fraction being the approximate fraction of his time he will be allowed to devote to this research. The remainder of his time will be spent in his normal function as Staff Physician.
- (4) This item for full-time service of a hospital technician to care for the experimental patients in the clinical aspects of this study.
- (5) Services of glassblower and machinist provided by Dept. of Chemistry.
- (6) This item includes amino acids and more than \$3,000 for pyridoxine alone. The massive doses of pyridoxine required cost about 30¢ per patient per day. This amount times 30 patients times 365 days yields the above figure.
- (7) No overhead charged at Fla. Farm Colony since the contract will be with the University of Fla.
- (8) Overhead at the University of Fla. is calculated on the basis of 53.1% of salary asked for. The contribution of the University of Fla. (\$1865) is the difference between this figure (\$3,824) and \$1959, which is 15% of the

\* \* \*

CURRICULUM VITAEDAVID S. ANTHONYPERSONAL

Born [redacted], New York, [redacted] Lived entire boyhood and youth at [redacted] Pennsylvania where father was a professor of horticulture (now retired) at the then Pennsylvania State College. Married [redacted] at [redacted], Wisconsin in [redacted]. Have [redacted] children: [redacted] born [redacted] [redacted] born [redacted] [redacted] born [redacted]

PROFESSIONAL

Graduated [redacted] in [redacted].  
 [redacted] First year on personal grant from Professor Harry Steenbock. Next two years held industrial fellowship from Lever Bros. Co. Last 1-1/2 years was departmental teaching fellow. Received [redacted] all under Professor Steenbock. General subject of research was fat metabolism of the rat. Ph.D. thesis title, "The Fat Requirement of the Rat." Other publications: (1) "Crystallization at low temperatures as a technique in the analysis of oils. Anthony, D. S., Quackenbush, F. W., and Steenbock, H., Department of Biochemistry, University of Wisconsin. Oil and Soap, 20:53 (1943)"; (2) "Antiacrodyric potency of seed oils, Anthony, D. S., Quackenbush, F. W., Inde, A., and Steenbock, H., Department of Biochemistry, University of Wisconsin. J. Nutrition 26:303(1943

SUBSEQUENT EXPERIENCE

Went directly from Wisconsin (March 1944) to Metallurgical Laboratory, University of Chicago (Manhattan Project) where I was a problem leader carrying out research on the toxicity and metabolism of the fission products. Publications list below were all as final (classified) reports which have since been released for unclassified distribution.

(3) "Apparatus for injection of animals with dangerous amounts of hard beta and gamma emitters. Anthony, D. S. and Norris, W. P. Metallurgical Laboratory (Manhattan Engineering District), University of Chicago. CH 3853 (now declassified), (1948) AECD No. 2007.

(4) Radiotoxicity of injected Sr<sup>89</sup> for rats, mice and rabbits. Part III. Lethal action and clinical changes. Anthony, D. S., Lathrop, K., and Snyder, R. CH 3845 (now declassified), (1947) MDDC 1364.

(5) Radiotoxicity of injected Sr<sup>89</sup> for rats, mice, and rabbits. Part II. Metabolism and organ distribution. Anthony, D. S., Lathrop, K. and Finkle, R. Metallurgical Laboratory (Manhattan Engineering District), University of Chicago. CH 3846 (now declassified), (1947) MDDC 1363."

(6) "Acute radiotoxicity of injected Yttrium<sup>91</sup>. Anthony, D. S. Metallurgical Laboratory (Manhattan Engineering District), University of Chicago. CH 3838 (now declassified), (1947) MDDC No. 1240.

(7) Acute radiotoxicity of injected P<sup>32</sup> in mice. Part I. Metabolism and survival. Anthony, D. S. and Snyder, R. H. Argonne National Laboratory, Chicago. MDDC 881 (1947).

(8) Acute radiotoxicity of (Ba-La)<sup>140</sup> in rats and mice. Part II. Metabolism of (Ba-La)<sup>140</sup>. Snyder, R. H., Kisseleski, W. E., Anthony, D. S., Finkle, R.D. Metallurgical Laboratory (Manhattan Engineering District) University of Chicago. MDDC 1279 (1946).

(9) Acute radiotoxicity of injected cerium<sup>144</sup> in the rat. Anthony, D. S. and Lathrop, K. A. Metallurgical Laboratory (Manhattan Engineering District), University of Chicago. CH 3824 (now declassified) (1947) MDDC 1326.

(10) Radiotoxicity of injected Sr<sup>89</sup> for rats, mice, and rabbits. Part I. Introduction Methods. Anthony, D. S., Lathrop, K. and Finkle, R. Metallurgical Laboratory (Manhattan Engineering District), University of Chicago. CH 3844 (now declassified) (1947) MDDC 1540.

Left Chicago in March 1946 to accept a position at higher pay with chemistry division of Oak Ridge National Laboratory (then called Clinton Laboratory). For fifteen months my responsibility was to work out a process for obtaining C<sup>14</sup> from irradiated calcium nitrate or beryllium nitride. This work provided the experimental basis for the processes which have been used to produce all of the C<sup>14</sup> distributed by Oak Ridge from 1947 to date. In 1947 I transferred to the biology division of O.R.N.L. where I worked for three years in the field of intermediary metabolism. My specialty was design, execution, and interpretation of the isotope portion of the microbiological studies. The resulting publications are listed below:

(11) "Studies on the mechanism of the propionic acid fermentation. Carson, S. F., Bachmann, B. J., Anthony, D. S., Kuna, M., Long, M. Oak Ridge National Laboratory. ORNL 148, Proc. of Meetings Jour. Bact. 1:12 (1948).

(12) Oxidation formation of lactic acid by a fungus. Carson, S. F., Foster, J. W., Jefferson, W. E., Phares, E. F., and Anthony, D. S. Archives of Biochemistry and Biophysics, 33, 3, 448-458 (Oct. 1951)."

(13) Aerobic formation of fumaric acid in the mold rhizopus nigricans: Synthesis by direct C<sub>2</sub> condensation. Foster, J. W., Carson, S. F., Anthony, D.S., Davis, J. B., Jefferson, W. E., and Long, M. V. Proc. of the Natl. Academy of Science, 35, 12, 663-672 (Dec. 1949).

(14) Analysis for total and isotopic carbon in intermediary metabolism studies. Anthony, D. S., and Long, M. V. Oak Ridge National Laboratory Report No. 1303. Available from Office of Technical Services, Department of Commerce, Washington, D. C. (Twenty cents).

In 1950 I accepted the position of director of the biology division of Mound Laboratory. This laboratory is operated for the Atomic Energy Commission by Monsanto Chemical Company. I was responsible for administering the research (both applied and fundamental) of approximately thirty people. These people included five at the Ph.D. level, three at the M.S., seventeen at the B.S., and five non-technical. I was also responsible annually for budgeting and continuously for proper expenditure of the considerable sum of money required to support these people. During my tenure at Mound I was not a practicing scientist except to a minor degree, hence publications covering work under my administration did not usually carry my name. The only publications during this period on which I will appear as an author are listed below.

(15) "Experimental Data Useful in Establishing Maximum Permissible Single and Multiple Exposures to Polonium." Anthony, D. S., Davis, R. K. (R. A. Taft San. Eng. Center, U. S. Public Health Service, Cincinnati, O.) Cowden, R. N. (Deputy Coroners, Montgomery Co., Dayton, O.), Jolley, W. P. (Contractor to Aero Med. Lab., Wright-Patterson Air Force Base, Dayton, O.). Paper published by the U. N. in Proceedings of the International Conference on Peaceful Uses of Atomic Energy. Aug. 8-20, 1955, Geneva, Switzerland. Vol. XIII.

(16) "Analysis of Mixtures of Radioactive Isotopes by Gamma Ray Measurements. Application of the Method to Actinium<sup>227</sup>, Thorium<sup>227</sup>, and Radium<sup>223</sup>." Anthony, D. S., Campbell, J. E. (R. A. Taft San. Eng. Center, U. S. Public Health Service, Cincinnati, O.), Hages, G. R. (Same Address), and Robajdek, E. S. (Nutrition Research Lab., Archer-Daniels-Midland Co., Minneapolis, Minn. Radiation Research 4, 286-93 (1956).

(17) "The metabolism of Actinium-227 and its Daughters Thorium-227 and Radium-223 By Rats". Campbell, J. E. (Dept. of Health, Ed., and Welfare, R. A. Taft San. Eng. Center, Cincinnati, Ohio), Robajdek, E. S. (Archer-Daniels-Midland Co., Minneapolis, Minn.), and Anthony, D. S. Radiation Research 4, 294-302 (1956).

(18) "The Effects of Small Amounts of Polonium on Rats". Davis, R. K. (R. A. Taft San. Eng. Center, U. S. Pub. Health Service, Cincinnati, O.), Stevenson, G. T. (Dow Chemical Co., Midland, Mich.), Busch, K. A. (R. A. Taft San. Eng. Center, U. S. Public Health Service, Cincinnati, O.), and Anthony, D. S. Submitted to Radiation Research, Fall 1955.

Subsequent to the closing of the biology division of Mound Laboratory, I accepted a position as Associate Professor in the Dept. of Chemistry at the Univ. of Fla., effective Sept. 1, 1955. My work here has involved the teaching of several graduate courses in biochemistry, the establishment of a new course in radiochemistry, and the direction of my personal research and that of a graduate student on this oligophrenia problem. In addition, I am a member of the Univ. of Fla. Committee on Nuclear Reactor Research, and am one of three from this university who have been appointed technical advisors to the Governor's Florida Nuclear Development Commission.

APPENDIX

CURRICULUM VITAE

Charles H. Carter

PERSONAL

[REDACTED] RESI-  
dences in Pediatric and Psychiatry. Private practice of Pediatrics and  
Pediatric Psychiatry for 8 years in [REDACTED] Practice at the Florida  
Farm Colony for 5 1/2 years.

PUBLICATIONS and TALKS

1. Miltontin in Petit Mal Epilepsy. J. of Neurology, Dec., 1954., Vol. 4,  
page 12.
2. Mephenasen and Related Compounds in Epilepsy, Mental Deficiency,  
Emotional Upset and Spastic Children. Read before 1956 Florida  
Psychiatric Association.
3. Reserpine Drugs in Epileptic, Mental Defectives, Emotional Upset and  
Spastic Children. Accepted by J. of Psychiatric to be published soon.
4. Chlorpromazine in Epileptic and Spastic Children. Being published  
soon in Southern Medical J.
5. A report of an Epidemic of Infectious Hepatitis in an Institution.  
J. of Florida Medical Assoc., Nov. 1955, 42:383-385.
6. Present Status of Treatment in Mongolism. Being published in Florida  
Medical J.
7. Clinical Value of Toclase in Suppression of the Cough. Submitted to  
Southern Medical J.
8. Complete Control of the Pinworm in a Cottage of an Institution.  
Published in May or June Issue of American J. of Tropical Medicines  
and Hygiene.
9. Comparison of Five New Amoebicides in 700 Patients. Published in June  
Issue of Tropical Medicine.
10. Effective Aureomycin on Growth Rate for a Period of Six Years. Being  
submitted to J. Pediatricians soon.
11. Ritilin in Oversedation. Read before Northwest Regional Psychiatric  
Assoc., 1955, Colecuty, Ill.
12. A New Quantitative Approach to the Study of Anthelmintic Drugs, with  
an Evaluation of Piperzine Hexahydrate, Phthalsulfathiazole, and  
RO 2-5665/3 in the treatment of Enterobius Infection. The J. of  
Pediatrics., June 1956, Vol. 48, No. 6, Pp. 754-763.

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