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**Nancy Ryan Gray, Ph.D.**  
Director

## GORDON RESEARCH CONFERENCE

on 2004 Molecular Basis of Microbial One-Carbon Metabolism Gordon Conference -  
August 1-6, 2004

### FINAL PROGRESS REPORT

DOE  
DE-FG02-04ER15577

The Gordon Research Conference (GRC) on 2004 Molecular Basis of Microbial One-Carbon Metabolism Gordon Conference - August 1-6, 2004 was held at Mount Holyoke College, South Hadley, MA from August 1-6, 2004. The Conference was well-attended with 117 participants (attendees list attached). The attendees represented the spectrum of endeavor in this field coming from academia, industry, and government laboratories, both U.S. and foreign scientists, senior researchers, young investigators, and students.

In designing the formal speakers program, emphasis was placed on current unpublished research and discussion of the future target areas in this field. There was a conscious effort to stimulate lively discussion about the key issues in the field today. Time for formal presentations was limited in the interest of group discussions. In order that more scientists could communicate their most recent results, poster presentation time was scheduled. Attached is a copy of the formal schedule and speaker program and the poster program. In addition to these formal interactions, "free time" was scheduled to allow informal discussions. Such discussions are fostering new collaborations and joint efforts in the field.

I want to personally thank you for your support of this Conference. As you know, in the interest of promoting the presentation of unpublished and frontier-breaking research, Gordon Research Conferences does not permit publication of meeting proceedings. If you wish any further details, please feel free to contact me. Thank you.

Dr. Joseph A. Krzycki  
Conference Chair

# MOLECULAR BASIS OF MICROBIAL ONE-CARBON METABOLISM

Mount Holyoke College  
Aug 1-6, 2004

Name	Organization	Participation	Status
BIRGIT ALBER	UNIVERSITY OF FREIBURG	Attendee	Registered
HANIF ALI	UNIVERSITY OF WARWICK	Poster Presenter	Registered
CHRISTOPHER ANTHONY	UNIVERSITY OF SOUTHAMPTON	Speaker	Registered
DAN ARP	OREGON STATE UNIVERSITY	Speaker	Registered
BEN BERKS	UNIVERSITY OF OXFORD	Speaker	Registered
SHERRY K BLIGHT	OHIO STATE UNIVERSITY	Poster Presenter	Registered
ELENA BORODINA	UNIVERSITY OF WARWICK	Poster Presenter	Registered
BOTHO BOWIEN	GEORG-AUGUST-UNIVERSITAT	Discussion Leader	Registered
JEFF M BOYD	UTAH STATE UNIVERSITY	Poster Presenter	Registered
ANDREAS BRUNE	MAX PLANCK INSTITUTE FOR TERRESTRIAL MICROBIOLOGY	Speaker	Registered
GORDON C CANNON	UNIVERSITY OF SOUTHERN MISSISSIPPI	Poster Presenter	Registered
COLLEEN M CAVANAUGH	HARVARD UNIVERSITY	Discussion Leader	Registered
LEONG KEAT CHAN	UNIVERSITY OF DELAWARE	Attendee	Registered
LUDMILA CHISTOSERDOVA	UNIVERSITY OF WASHINGTON	Speaker	Registered
YOUNG J. CHOI	BIOTECHNOLOGY RESEARCH INSTITUTE, NRCC	Attendee	Registered
DONG W CHOI	IOWA STATE UNIVERSITY	Poster Presenter	Registered
ANDRIA M COSTELLO	SYRACUSE UNIVERSITY	Poster Presenter	Registered
HOLGER DAIMS	UNIVERSITAET WIEN	Speaker	Registered
HOWARD DALTON	UNIVERSITY OF WARWICK	Speaker	Registered
ANDREW WILLIAM DANGEL	OHIO STATE UNIVERSITY, DEPARTMENT OF MICROBIOLOGY	Poster Presenter	Registered
LEITITIA LDN DE NAGORNOFF	WARWICK UNIVERSITY	Poster Presenter	Registered
UWE DEPPENMEIER	UNIVERSITY OF WISCONSIN MILWAUKEE	Speaker	Registered
ALAN A DISPIRITO	IOWA STATE UNIVERSITY	Attendee	Registered
YOUNG S DO	IOWA STATE UNIVERSITY	Attendee	Registered
EVERT C DUIN	AUBURN UNIVERSITY	Speaker	Registered
MARC DUMONT	UNIVERSITY OF WARWICK	Poster Presenter	Registered
PETER DUNFIELD	MAX PLANCK INSTITUTE FOR TERRESTIAL MICROBIOLOGY	Speaker	Registered
JAMES G FERRY	PENN STATE UNIVERSITY	Attendee	Registered
CORNELIUS G FRIEDRICH	UNIVERSITY OF DORTMUND	Vice Chair	Registered
BAERBEL FRIEDRICH	HUMBOLDT-UNIVERSITAET ZU BERLIN	Speaker	Registered
SHUKI FUJIMURA	TOKYO UNIVERSITY OF AGRICULTURE	Poster Presenter	Registered
HIROYUKI FUSE	AIST	Poster Presenter	Registered
SIMONIDA GENCIC	UNIFORMED SERVICES UNIVERSITY OF HEALTH SCIENCES	Attendee	Registered
PETER R GIRGUIS	MBARI	Poster Presenter	Registered
GERHARD GOTTSCHALK	INSTITUT FUER MIKROBIOLOGIE UND GENETIK	Speaker	Registered
DAVID A GRAHAME	UNIFORMED SERVICES UNIVERSITY	Attendee	Registered
XIAOFENG GUO	UNIVERSITY OF WASHINGTON	Poster Presenter	Registered
CHRISTOPH HAGEMIEIER	MPI FOR TERRESTRIAL MICROBIOLOGY	Poster Presenter	Registered
STEVE HALLAM	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	Speaker	Registered
JONG-IN HAN	RPI	Attendee	Registered
THOMAS E HANSON	UNIVERSITY OF DELAWARE-COLLEGE OF MARINE STUDIES	Poster Presenter	Registered
REINER HEDDERICH	MAX-PLANCK-INSTITUTE	Speaker	Registered
REIKO R HIRAI	AJINOMOTO CO., INC.	Poster Presenter	Registered
FRANK A. IMKAMP	UNIVERSITY OF FRANKFURT	Poster Presenter	Registered
MASAHARU ISHII	UNIVERSITY OF TOKYO	Speaker	Registered

<b>MIKE S M JETTEN</b>	UNIVERSITY OF NIJMEGEN	Speaker	Registered
<b>SAMANTHA B JOYE</b>	UNIVERSITY OF GEORGIA	Speaker	Registered
<b>MARINA G KALYUZHAY</b>	UNIVERSITY OF WASHINGTON	Poster Presenter	Registered
<b>NOBUO KATO</b>	KYOTO UNIVERSITY	Speaker	Registered
<b>HYUNG J KIM</b>	UNIVERSITY OF MINNESOTA	Poster Presenter	Registered
<b>YOUNG M KIM</b>	YONSEI UNIVERSITY	Poster Presenter	Registered
<b>JI HYANG KIM</b>	YONSEI UNIVERSITY	Attendee	Registered
<b>SI WOUK KIM</b>	CHOSUN UNIVERSITY	Poster Presenter	Registered
<b>GARY KING</b>	UNIVERSITY OF MAINE	Speaker	Registered
<b>TETSUYA KOTANI</b>	KYOTO UNIVERSITY	Poster Presenter	Registered
<b>NATHANIEL EDWARD KREEL</b>	OHIO STATE UNIVERSITY	Poster Presenter	Registered
<b>MARTIN KRUGER</b>	MAX PLANCK INSTITUTE FOR MARINE MICROBIOLOGY	Poster Presenter	Registered
<b>JOSEPH A KRZYCKI</b>	OHIO STATE UNIVERSITY	Chair	Registered
<b>FRANK W LARIMER</b>	OAK RIDGE NATIONAL LABORATORY	Speaker	Registered
<b>ROSS C LARUE</b>	THE OHIO STATE UNIVERSITY	Poster Presenter	Registered
<b>JOHN A LEIGH</b>	UNIVERSITY OF WASHINGTON	Speaker	Registered
<b>HUIYING LI</b>	UNIVERSITY F CALIFORNIA, LOS ANGELES	Speaker	Registered
<b>MARY LIDSTROM</b>	UNIVERSITY OF WASHINGTON	Speaker	Registered
<b>EMILY L LILLY</b>	HARVARD UNIVERSITY	Poster Presenter	Registered
<b>PAUL A LINDAHL</b>	TEXAS A&M UNIVERSITY	Speaker	Registered
<b>ASTRID LINGL</b>	UNIVERSITY OF FRANKFURT	Poster Presenter	Registered
<b>JOHN D LIPSCOMB</b>	UNIVERSITY OF MINNESOTA	Speaker	Registered
<b>DAVID G LONGSTAFF</b>	OHIO STATE UNIVERSITY	Poster Presenter	Registered
<b>ANIRBAN MAHAPATRA</b>	OHIO STATE UNIVERSITY	Poster Presenter	Registered
<b>CHRISTOPHER J MARX</b>	HARVARD UNIVERSITY	Poster Presenter	Registered
<b>IAN R MCDONALD</b>	UNIVERSITY OF WAIKATO	Attendee	Registered
<b>ALASTAIR G MCEWAN</b>	UNIVERSITY OF QUEENSLAND	Speaker	Registered
<b>CARLOS B MIGUEZ</b>	BIOTECHNOLOGY RESEARCH INSTITUTE	Attendee	Registered
<b>JONATHAN A. MILLER</b>	UNIVERSITY OF WASHINGTON	Poster Presenter	Registered
<b>RYOJI MITSUI</b>	OKAYAMA UNIVERSITY OF SCIENCE	Poster Presenter	Registered
<b>AKIMITSU MIYAJI</b>	UNIVERSITY OF WARWICK	Poster Presenter	Registered
<b>VOLKER MULLER</b>	UNIVERSITAT FRANKFURT	Speaker	Registered
<b>COLIN MURRELL</b>	UNIVERSITY OF WARWICK	Speaker	Registered
<b>NATALIIA MYRONOVA</b>	UNIVERSITY OF WARWICK	Poster Presenter	Registered
<b>TOMOYUKI NAKAGAWA</b>	TOKYO UNIVERSITY OF AGRICULTURE	Poster Presenter	Registered
<b>OLIVIER G NERCESSIAN</b>	UNIVERSITY OF WASHINGTON	Poster Presenter	Registered
<b>GYORGYI NYERGES</b>	UNIVERSITY OF CALIFORNIA, RIVERSIDE	Poster Presenter	Registered
<b>YOKO OKUBO</b>	UNIVERSITY OF WASHINGTON	Poster Presenter	Registered
<b>RONALD S OREMLAND</b>	U.S. GEOLOGICAL SURVEY	Speaker	Registered
<b>IZUMI ORITA</b>	KYOTO UNIVERSITY	Poster Presenter	Registered
<b>HYUK PARK</b>	YONSEI UNIVERSITY GRADUATE SCHOOL	Poster Presenter	Registered
<b>STEPHEN W RAGSDALE</b>	UNIVERSITY OF NEBRASKA	Speaker	Registered
<b>WILLIAM S REEBURGH</b>	UNIVERSITY OF CALIFORNIA, IRVINE	Speaker	Registered
<b>SIMONA ROMAGNOLI</b>	OHIO STATE UNIVERSITY	Poster Presenter	Registered
<b>DAGMAR ROTHER</b>	UNIVERSITAT DORTMUND	Poster Presenter	Registered
<b>MICHAEL ROTHER</b>	UNIVERSITY OF ILLINOIS	Speaker	Registered
<b>YASUYOSHI SAKAI</b>	KYOTO UNIVERSITY, GRADUATE SCHOOL OF AGRICULTURE	Speaker	Registered
<b>LUIS A SAYAVEDRA-SOTO</b>	OREGON STATE UNIVERSITY	Poster Presenter	Registered
<b>HENDRIK SCHAEFER</b>	UNIVERSITY OF WARWICK	Poster Presenter	Registered
<b>STEPHANIE S SCOTT</b>	THE OHIO STATE UNIVERSITY	Poster Presenter	Registered
<b>JEREMY D SEMRAU</b>	UNIVERSITY OF MICHIGAN	Attendee	Registered
<b>JAYA SINGH</b>	OHIO STATE UNIVERSITY	Poster Presenter	Registered
<b>THOMAS J SMITH</b>	SHEFFIELD HALLAM UNIVERSITY	Poster Presenter	Registered
<b>STEPHANIE A SMITH</b>	WRIGHT STATE UNIVERSITY	Attendee	Registered
<b>JITESH A SOARES</b>	OHIO STATE UNIVERSITY	Poster Presenter	Registered
<b>ROBERT J SPREITZER</b>	UNIVERSITY OF NEBRASKA	Discussion Leader	Registered

<b>LISA Y STEIN</b>	UNIVERSITY OF CALIFORNIA	Poster Presenter	Registered
<b>TIM J STROVAS</b>	UNIVERSITY OF WASHINGTON	Poster Presenter	Registered
<b>ROBERT TABITA</b>	OHIO STATE UNIVERSITY	Speaker	Registered
<b>TOMOKAZU TACHIKAWA</b>	MITSUBISHI GAS CHEMICAL COMPANY INC.	Attendee	Registered
<b>RUDOLF K THAUER</b>	MARBURG UNIVERSITY	Speaker	Registered
<b>ANDREAS R THEISEN</b>	UNIVERSITY OF WARWICK	Poster Presenter	Registered
<b>HIROHIDE TOYAMA</b>	YAMAGUCHI UNIVERSITY	Poster Presenter	Registered
<b>KOICHI TOYODA</b>	UNIVERSITY OF TOKYO	Poster Presenter	Registered
<b>YURI A TROTSENKO</b>	IBPM RAS	Attendee	Registered
<b>STEPHEN J VAN DIEN</b>	GENOMATICA, INC.	Poster Presenter	Registered
<b>JYOTSNA VOHRA</b>	UNIVERSITY OF WARWICK	Poster Presenter	Registered
<b>JULIA VORHOLT</b>	LIPM	Speaker	Registered
<b>STEPHANE VUILLEUMIER</b>	UNIVERSITE LOUIS PASTEUR	Poster Presenter	Registered
<b>BRIAN H WITTE</b>	OHIO STATE UNIVERSITY	Attendee	Registered
<b>AKIHO YOKOTA</b>	NARA INST. SCI. TECHNOL.	Speaker	Registered
<b>HIROYA YURIMOTO</b>	KYOTO UNIVERSITY	Poster Presenter	Registered

# Molecular Basis Of Microbial One-Carbon Metabolism

August 1-6, 2004  
Mount Holyoke College  
South Hadley, MA

Chair: [Joseph A Krzycki](#)  
Vice Chair: [Cornelius G Friedrich](#)

## SUNDAY

- 2:00 pm - 9:00 pm Arrival and check-in
- 6:00 pm Dinner
- 7:30 pm - 9:30 pm **C-1 Genomes**
- 7:30 Welcome
- 7:45 Discussion Leader: **Mary Lidstrom** (University of Washington)
- 7:55 **Caroline Harwood** (University of Iowa)  
"How C-1 metabolism contributes to the metabolic versatility of *Rhodopseudomonas palustris*"
- 8:25 **Dan Arp** (Oregon State University)  
"A genomics approach to understanding obligate chemolithoautotrophy in the ammonia oxidizing bacterium, *Nitrosomonas europaea*"
- 8:55 **Frank Larimer** (Oak Ridge National Laboratories)  
"Comparative genomics of autotrophic microbes"

## MONDAY

- 7:30 am - 8:30 am Breakfast
- 8:45 am Conference Photo
- 9:00 am - 12:30 pm **Methanogenesis**
- 9:00 Discussion Leader: **J. Greg Ferry** (Penn State)
- 9:10 **Michael Rother** (University of Illinois, Urbana)  
"Physiological and Genetic Analysis of Carbon Monoxide Metabolism in *Methanosarcina acetivorans*"
- 9:40 **Evert Duin** (Auburn University)  
"Properties and reaction mechanism of methyl-coenzyme M reductase"
- 10:10 **Reiner Hedderich** (Max-Planck-Institut fuer terrestrische Mikrobiologie, Marburg)  
"How methanogens catalyze energetically unfavorable redox- reactions"
- 10:40 am Coffee Break
- 11:00 **Uwe Deppenmeier** (University of Wisconsin, Milwaukee)  
"DNA microarray analysis of *Methanosarcina mazei* during growth on methanol and acetate"
- 11:30 Poster Speaker 1 (TBA)\*
- 11:40 **John Leigh**  
"Regulation of nitrogen and carbon metabolism in *Methanococcus maripaludis*"
- 12:10 Poster Speaker 2 (TBA)\*
- 12:20 Poster Speaker 3 (TBA)\*
- 12:30 pm Lunch
- 1:30 pm - 4:00 pm Free Time
- 4:00 pm - 6:00 pm Poster Session I
- 6:00 pm Dinner
- 7:30 pm - 9:30 pm **Rubisco and Rubisco-like proteins**
- 7:30 Discussion Leader: **Botho Bowien** (Georg-August-Universitat Gottingen)
- 7:40 **F. Robert Tabita** (Ohio State University, Columbus)  
"Functional studies of key catalytic and regulator proteins important for CO<sub>2</sub> fixation"
- 8:10 **Robert Spreitzer** (University of Nebraska, Lincoln)  
"Structural basis for Rubisco functional divergence"

- 8:40 **Huiying Li** (University of California, Los Angeles)  
"Crystal structure of RubisCO-like protein from *Chlorobium tepidum*"
- 9:00 **Akiho Yokota** (Nara Institute of Science and Technology)  
"Bacillus Rubisco-like Protein: A possible origin of photosynthetic Rubisco"

## TUESDAY

- 7:30 am - 8:30 am Breakfast
- 9:00 am - 12:30 pm **Methyl- and Methanotrophy**
- 9:00 Discussion Leader: **Howard Dalton** (University of Warwick)
- 9:10 **Alastair McEwan** (The University of Queensland)  
"Dimethylsulfide metabolism in *Rhodovulum sulfidophilum*"
- 9:40 **Yasuyoshi Sakai** (Kyoto University)  
"Intracellular homeostasis of yeast methylotrophy"
- 10:10 **Ludmilla Chistoserdova** (University of Washington)  
"Environmental genomics of C1 metabolism"
- 10:40 am Coffee Break
- 11:00 Poster Speaker 4 (TBA)\*
- 11:10 **Julia Vorholt** (INRA/CNRS, Toulouse)  
"A proteomic view of the cellular adaptation of *Methylobacterium extorquens* AM1 to methylotrophic growth conditions"
- 11:40 **John Lipscomb** (University of Minnesota)  
"Specificity and Regulation of Monooxygenase Chemistry: Component Interactions of sMMO"
- 12:10 Poster Speaker 5 (TBA)\*
- 12:20 Poster Speaker 6 (TBA)\*
- 12:30 pm Lunch
- 1:30 pm - 4:00 pm Free Time
- 4:00 pm - 6:00 pm Poster Session II
- 6:00 pm Dinner
- 7:30 pm - 9:30 pm **Anaerobic Methane Oxidation**
- Discussion Leader: **Ron Oremland** (U.S. Geological Survey)
- 7:30 **William S. Reece** (University of California, Irvine)  
"Geochemical Milestones in the Study of Anaerobic Methane Oxidation: 1966 - present"
- 8:00 **Samantha Joye** (University of Georgia, Athens)  
"Activity, environmental biogeochemical signatures, and microbiology of the anaerobic oxidation of methane in extreme environments"
- 8:30 **Steve Hallam** (Monterey Bay Aquarium Research Institute)  
"Environmental genomic analysis of methanotrophic archaea, and biochemical pathways of the anaerobic oxidation of methane"
- 9:00 **Rolf Thauer** (Max Planck Institute for Terrestrial Microbiology, Marburg)  
"Two novel cofactors involved in methanogenesis and anaerobic oxidation of methane"

## WEDNESDAY

- 7:30 am - 8:30 am Breakfast
- 9:00 am - 12:30 pm **C-1 Ecology and Physiology**
- 9:00 Discussion Leader: **Colleen Cavanaugh** (Harvard)
- 9:10 **Andreas Brune** (Max Planck Institute for Terrestrial Microbiology, Marburg)  
"Methanogens and homoacetogens in termite guts: competition or coexistence?"
- 9:40 **Peter Dunfield** (Max Planck Institute for Terrestrial Microbiology)  
"Growth patterns of the facultative methanotroph *Methylocella silvestris* on methane and acetate"
- 10:10 **Gary King** (University of Maine, Walpole)  
"Distribution, diversity and ecological significance of aerobic CO-oxidizing bacteria"
- 10:40 am Coffee Break
- 11:00 **Colin Murrell** (University of Warwick)  
"Detection of active populations of methanotrophs in unusual environments using stable

	isotope probing"
11:30	<b>Holger Daims</b> (Universität Wien) "Ecology and genomics of uncultured autotrophic nitrite-oxidizers and anaerobic ammonium oxidizers"
12:00	<b>Yuri Trotsenko</b> (IBPM Ras) "Methanotrophs and methylobacteria as plant symbionts"
12:20	Poster Speaker 7 (TBA)*
12:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 6:00 pm	Poster Session III
6:00 pm	Dinner
7:30 pm - 9:30 pm	<b>Acetogenesis and CO metabolism</b>
	Discussion Leader: <b>Ortwin Meyer</b> (University of Bayreuth)
7:30	<b>Volker Mueller</b> (Johann Wolfgang Goethe-Universität Frankfurt) "Bioenergetics of Acetogenesis"
8:00	<b>Paul Lindahl</b> (Texas A&M University, College Station, TX) "Acetyl-CoA Synthase: The case for a Ni(0)-Based Mechanism of Catalysis"
8:30	<b>Stephen Ragsdale</b> (University of Nebraska, Lincoln) "Carbon Monoxide synthesis, utilization, and channeling"
9:00	<b>Vitali Svetlitchnyi</b> (University of Bayreuth) "CO dependent hydrogenogenesis in <i>Carboxydotherrnus hydrogenofomans</i> "
<b>THURSDAY</b>	
7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	<b>Autotrophy and Chemolithotrophy</b>
9:00	Discussion Leader: <b>Cornelius Friedrich</b> (Universität Dortmund)
9:10	<b>Masaharu Ishii</b> (Graduate School of Agricultural and Life Sciences, Tokyo) "Carboxylation reaction(s) within the reductive TCA cycle"
9:40	<b>Georg Fuchs</b> (Universitat Freiburg) "Variations of autotrophic carbon fixation pathways in Crenarchaeota"
10:10	<b>Nobuo Kato</b> (Kyoto University) "Formaldehyde fixation in Bacteria and Archaea"
10:40 am	Coffee Break
11:00	<b>Ben Berks</b> (University of Oxford) "A SoxY start to sulfur oxidation"
11:30	<b>Bärbel Friedrich</b> (Humboldt-Universität zu Berlin) "Lithotrophic growth of <i>Ralstonia eutropha</i> is triggered by hydrogen-sensing kinase complex"
12:00	<b>Marc Strous</b> and <b>Mike Jetten</b> (Delft University of Technology) "New visions on anammox biochemistry and lifestyle from the genome of <i>Kuenenia stuttgartiensis</i> "
12:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 4:30 pm	Business meeting
4:30 pm - 6:00 pm	Poster Session IV
6:00 pm	Dinner
7:30 pm - 9:30 pm	<b>C-1 Perspectives</b>
7:30	Discussion Leader: <b>Joe Krzycki</b> (Ohio State University)
7:40	<b>Mary Lidstrom</b> (University of Washington, Seattle) "Methylophony in <i>Methylobacterium extorquens</i> AM1"
8:10	<b>Howard Dalton</b> : Introduction
8:15	<u>Special Seminar</u> : <b>Christopher Anthony</b> (University of Southampton) "Methanol oxidation in methylophony (1964-2004)"
8:50	<b>Volker Müller</b> : Introduction

8:55

Special Seminar: **Gerhard Gottschalk** (Institute of Microbiology and Genetics, Göttingen)  
"Bioenergetics and genomics of one-carbon utilizers"

**FRIDAY**

7:30 am - 8:30 am    Breakfast

9:00 am              Departure

\* Poster Speakers will be selected from submitted abstracts



**FINANCIAL STATUS REPORT**

(Follow instructions on the back.)

1. FEDERAL AGENCY AND ORGANIZATIONAL ELEMENT TO WHICH REPORT IS SUBMITTED Earlette M. Robinson U.S. Department of Energy/ACQ Chicago Operations Office 9800 South Cass Avenue Argonne, IL 60439		2. FEDERAL GRANT OR OTHER IDENTIFYING NUMBER  <b>DE-FG02-04ER15577</b>		OMB Approved No. 80-R0180	
3. RECIPIENT ORGANIZATION (Name and complete address, including ZIP code)  Gordon Research Conferences PO Box 984 West Kingston, RI 02892-0984		4. EMPLOYER IDENTIFICATION NUMBER  <b>050300482</b>			
		5. RECIPIENT ACCOUNT NUMBER OR IDENTIFYING NO.			
		6. FINAL REPORT <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		7. BASIS <input checked="" type="checkbox"/> CASH <input type="checkbox"/> ACCRUAL	
8. PROJECT/GRANT PERIOD (See instructions)		9. PERIOD COVERED BY THIS REPORT			
FROM (Month, day, year) <b>07/15/2004</b>	TO (Month, day, year) <b>07/14/2005</b>	FROM (Month, day, year) <b>07/15/2004</b>		TO (Month, day, year) <b>07/14/2005</b>	
10. STATUS OF FUNDS					
a. Net outlays previously reported				\$ 0.00	
b. Total outlays this report period				6000	
c. Less: Program income credits				0.00	
d. Net outlays this report period (Line a minus line c)				6000	
e. Net outlays to date (Line a plus line d)				6000	
f. Less: Non-Federal share of outlays				0	
g. Total Federal share of outlays (Line e minus line f)				6000	
h. Total unliquidated obligations				0.00	
i. Less: Non-Federal share of unliquidated obligations shown on line h				0.00	
j. Federal share of unliquidated obligations (Line h minus line i)				0.00	
k. Total Federal share of outlays and unliquidated obligations (Line g plus j)				6000	
l. Total cumulative amount of Federal funds authorized				6000	
m. Unobligated balance of Federal funds (Line l minus line k)				0.00	
11. INDIRECT EXPENSE		a TYPE OF RATE (Place "X" in appropriate box) <input type="checkbox"/> PROVISIONAL <input type="checkbox"/> PREDETERMINED <input type="checkbox"/> FINAL <input type="checkbox"/> FIXED			
		b. RATE	c. BASE	d. TOTAL AMOUNT	e. FEDERAL SHARE
12. REMARKS (Attach any explanations deemed necessary or information required by Federal sponsoring agency in compliance with governing legislation.)  <b>2004 Molecular Basis of Microbial One-Carbon Metabolism Gordon Conference - August 1-6, 2004</b>					
13. CERTIFICATION I certify to the best of my knowledge and belief that this report is correct and complete and that all outlays and unliquidated obligations are for the purposes set forth in the award documents		SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL <i>Nancy Ryan Gray</i>		DATE REPORT SUBMITTED September 26, 2005	
		TYPED OR PRINTED NAME AND TITLE <b>Nancy Ryan Gray, Director</b>		TELEPHONE (Area code, number, and extension) <b>401-783-4011</b>	
DISTRIBUTION: Copy 1 - Official Grant File Copy 2 - Grants Section, FAAB Copy 3 - Grantee			STANDARD FORM 269 (7-76) Prescribed by Office of Management and Budget Cir. No. A-110		

FINANCIAL ASSISTANCE  
PROPERTY CERTIFICATION

AWARDEE Gordon Research Conferences

AWARD NO. DE-FG02-04ER15577

The DOE Assistance Rules, 10 CFR 600, define property acquired under the terms of the award as either exempt (purchased with DOE operating dollars) or non-exempt (acquired with DOE capital equipment dollars, Government-furnished or acquired from the Government excess property lists). Non-exempt property is normally identified in the award document as Government-owned and requires a Semi-Annual Summary Report of DOE-Owned Plant and Capital Equipment to be submitted **annually** pursuant to DOE regulations.

In order to facilitate grant closeout, please review your property records and complete the applicable Item I, for exempt property, or Item II, for non-exempt property, of this certificate and return it to the Contracting Officer as soon as possible.

- I. There was no reportable residual exempt property of any description at the completion of this award.

SIGNATURE Nancy Ryan Gray

TITLE Director

DATE September 26, 2005

- II A final inventory of residual non-exempt property is enclosed for the category (or categories) checked below:

( ) A. NONEXPENDABLE PERSONAL PROPERTY, Federally-Owned (acquired with Capital Equipment funds, Government-furnished equipment, or through excess)

( ) B. EXPENDABLE PERSONAL PROPERTY (SUPPLIES), if fair market value exceeds \$5,000.

Except for the category (categories) checked above, no other reportable residual property Of any description remained on this award at its completion.

SIGNATURE \_\_\_\_\_

TITLE \_\_\_\_\_ DATE \_\_\_\_\_

### PATENT CERTIFICATION

Gordon Research Conferences  
Awardee

☐ Interim Certification

\_\_\_\_\_  
DOE Prime and/or Subcontract Nos.

☒ Final Certification

Awardee hereby certifies unless indicated to the contrary, that:

1. All procedures for identifying and disclosing subject inventions as required by the patent clause of the contract have been followed throughout the reporting period.
2. There were no subcontracts or purchase orders involving research, development, and demonstration except as follows: (a separate certification must be provided to DOE for each subcontract or purchase order awarded.)
3. No inventions or discoveries were made or conceived in the course of or under this contract other than the following (Certification includes ☐, does not include ☐ all subcontracts):

<u>TITLE</u>	<u>INVENTOR</u>	<u>DATE REPORTED</u>	<u>DOE "S" NO.*</u>
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NONE

4. The completion date of this contract is as follows: 07/14/2005 Award# DE-FG02-04ER15577
5. The following period is covered by this certification:

<u>07/15/2004</u>	to	<u>07/14/2005</u>
Month                      Day      Year		Month                      Day      Year

<u>Gordon Research Conferences</u>	<u>Nancy Ryan Gray</u>
Contractor	Signature

<u>PO Box 984</u>	<u>Director</u>
	Title

<u>W. Kingston, RI 02892</u>	<u>September 26, 2005</u>
Address	Date of Certification

\* Also include Subcontract No. if available.

NOTE: A positive certification for this Item 3 does not negate the requirement for furnishing to DOE a fully executed Patent Certification from each subawardee identified in Item 2.