

MINUTES OF THE MEETING
OF THE
MICHIGAN STATE UNIVERSITY
BOARD OF TRUSTEES

September 11, 2015

President Simon called the meeting of the Board of Trustees to order at 9:30 a.m. in the Board Room.

Trustees present: Brian Breslin, Dianne Byrum, Joel Ferguson, Melanie Foster, Mitch Lyons, Brian Mosallam, George Perles, and Diann Woodard.

University officers present: President Simon, Provost and Executive Vice President Youatt, Vice President and Secretary Beekman, Vice President and General Counsel Noto, Vice Presidents Burnham, Gore, Groves, Haas, Hsu, Maybank, Swain, and Young. Faculty liaisons present: John Bell, Martin Crimp, Joseph Francese, Mariam Sticklen, and Mary Noel. Student liaisons present: Domonique Clemons, Amanda Hohly-Seng, and Sudha Sankar.

All actions taken were by unanimous vote of the Trustees present, unless otherwise noted.

1. On a motion by Trustee Foster, supported by Trustee Ferguson, the **BOARD VOTED to approve** the agenda.
2. On a motion by Trustee Breslin, supported by Trustee Mosallam, the **BOARD VOTED to approve** the minutes of the June 17, 2015 Board of Trustees meeting.
3. President's Report

President Simon provided the following report to the Board.

A. Student Achievements

For the first time in history, the College of Engineering has enrolled more than 1,000 female undergraduates. The College welcomed its largest ever class of more than 300 female students this fall.

The Michigan State University Case Study Team took first place at this year's International Food and Agribusiness Management Association's Global Student Case Competition over the summer – besting the top food and agribusiness graduate students from across the globe.

B. Faculty Achievements

R. James Kirkpatrick, professor of geological sciences and chemistry, and dean of the College of Natural Science, has received the 2015 Marilyn and Sturges W. Bailey Award, the highest honor of The Clay Minerals Society.

Horticulture professor Jim Flore has been named the 2015 Cherry Industry Person of the Year.

MSU College of Law's Dan Linna was named a Fastcase 50 innovator for chartering a new course in the delivery of legal services. He is the fourth MSU Law faculty member so recognized over the last four years — more than any other institution.

Gary Mittelbach, a professor of integrative biology, has been named a 2015 fellow of the Ecological Society of America.

C. University-wide Rankings and Awards

MSU jumped ten spots in the latest U.S. News & World Report Best Colleges ranking, rising to No. 75, which places MSU in the top 30 of public universities.

MSU was also ranked as the No. 1 supply chain school in the nation by SCM World – a leading supply chain talent developer for some of the world's top companies.

MSU was recently ranked as having the No. 2 hospitality business program in the U.S. by SuccessfulStudent.org.

On its "Best Bang for the Buck" list, Washington Monthly ranked MSU 11th in the Midwest out of 403 schools.

MSU earned gold-level recognition in the Exercise is Medicine on Campus program, a U.S.-based health initiative coordinated by the American College of Sports Medicine.

According to Best Colleges Online, MSU's W.J. Beal Botanical Garden and Hidden Lake Gardens are ranked among the "50 Most Amazing University Botanical Gardens and Arboreturns in the U.S." The Beal Garden, established in 1873, is the oldest continuously operated university botanical garden of its kind in the U.S.

The College of Communication Arts and Sciences' Department of Media and Information has developed a game design and development specialization for Coursera, making it the first at MSU to partner with the online education provider.

D. Athletics

ESPN recently ranked last season's Cotton Bowl Classic come-from-behind win as the No. 1 College Football Game of the year.

Zach Bennett, MSU's men's soccer team, earned his 37th career victory as a goal tender with the team's recent defeat of Niagara.

Former Spartan rower Emily Regan won a gold medal in the women's eight at the World Rowing Championships.

MSU Athletics Director Mark Hollis, in addition to being named vice chair of the NCAA Division I Men's Basketball Committee for the upcoming 2015-16 season, and chair of the committee for the 2016-17 academic year, will receive the John L. Toner Award, recognizing his extraordinary service as athletic director, presented by the National Football Foundation.

E. MSU fundraising surpasses \$1 billion milestone

The University has reached two-thirds of its Empower Extraordinary \$1.5 billion goal, recently surpassing \$1 billion.

MSU announced several major gifts yesterday, one of which was Governor Blanchard's \$1 million commitment to the Department of Political Science for support of a speaker series. Late yesterday afternoon, it was also announced that Draymond Green will give \$3.1 million to support athletic facilities and scholarships.

More than 221,000 donors, nearly 105,000 of whom are alumni, have made a gift to the Campaign.

Thirty-six endowed chairs and professorships have been created toward a Campaign goal of 100.

During the campaign, nearly 800 new scholarship and fellowship funds have been created to help support students, reaching 70 percent (\$278M) of a \$400 million goal.

To date, more than \$404 million has been added to MSU endowments.

5. Personnel Actions

Provost Youatt presented the following personnel actions:

Holsapple, Michael, AN–Professor, Food and Consumer Product Ingredient Safety Chair, Department of Food Science and Human Nutrition; Center for Integrative Toxicology; Department of Pharmacology and Toxicology, \$ 230,000, with Tenure, effective July 1, 2015.

Awokuse, Titus, AN–Professor, Department of Agricultural, Food and Resource Economics, \$ 230,000, with Tenure, effective August 16, 2015.

Bluhm, Robyn, AY–Associate Professor, Department of Philosophy; Lyman Briggs College, \$ 79,000, effective August 16, 2015.

Kim, Dongbin, AY–Associate Professor, Department of Educational Administration, \$ 83,000, with Tenure, effective August 16, 2015.

Gates, Timothy J, AY–Associate Professor, Department of Civil and Environmental Engineering, \$ 110,000, with Tenure, effective August 16, 2015.

Papapolymerou, Ioannis, AN–MSU Foundation Professor, Department of Electrical and Computer Engineering, \$ 225,000, with Tenure, effective August 16, 2015.

Arnetz, Bengt, AN – Professor, Department of Family Medicine, \$400,000, with Tenure, effective September 1, 2015.

Arnetz, Judith, AN – Professor, Department of Family Medicine; College of Human Medicine Dean's Office, \$ 200,000, with Tenure, effective September 1, 2015.

Wilson, Angela K, AY-Hannah Distinguished Professor, Department of Chemistry, \$ 206,000, with Tenure, effective February 10, 2016.

Monson, Jamie D, AN – Professor, Department of History; African Studies Center, \$ 157,000, with Tenure, effective August 16, 2015.

Sousa, Aron, AN—Senior Associate Dean, College of Human Medicine Dean's Office; Associate Professor Health Programs, Department of Medicine, changing title to Interim Dean, College of Human Medicine

Dean's Office and for a change in salary to \$ 330,000, effective August 15, 2015.

Donohue, William, AY—Professor, Department of Communication; Interim Faculty Grievance Official, Office of Faculty Grievance Official for a change in title to Faculty Grievance Official, Office of the Faculty Grievance Official and for a change in salary to \$ 125,000, effective August 16, 2015.

Trustee Foster **moved to approve** the recommendations, with support from Trustee Byrum.

THE BOARD VOTED to approve the resolution.

6. Gifts, Grants, and Contracts

Vice President Hsu presented the Gifts, Grants, and Contracts Report for the period May 16, 2015 through August 10, 2015. The report is a compilation of 679 Gifts, Grants and Contracts plus 50 Consignment/Non-Cash Gifts, with a total value of \$109,574,268.

Trustee Lyons **moved to approve** the recommendation, with support from Trustee Mosallam.

THE BOARD VOTED to approve the resolution.

Vice President Hsu introduced Professor Hector Gonzales, a member of the Department of Epidemiology and Biostatistics in the College of Human Medicine. Professor Gonzales made a presentation to the Board on studying neurocognitive aging in Latinos. (Appendix A)

7. Finance Committee

Trustee Foster presented the Trustee Finance Committee Report and recommendations.

A. Fund Functioning as an Endowment

It was recommended that the Board of Trustees establish a fund functioning as an endowment to provide discretionary funds for the College of Arts and Letters.

BE IT RESOLVED, the Board of Trustees hereby establishes a fund functioning as an endowment entitled "Helen Snyder Endowed Fund for the College of Arts and Letters."

It was recommended that the Board of Trustees establish a fund functioning as an endowment to provide discretionary funds for WKAR Radio.

BE IT RESOLVED, that the Board of Trustees hereby establishes a fund functioning as an endowment entitled "Uvonne Yeager Fund for WKAR Radio."

It was recommended that the Board of Trustees establish a fund functioning as an endowment to provide discretionary funds for WKAR TV.

BE IT RESOLVED, that the Board of Trustees of Michigan State University hereby establishes a fund functioning as an endowment entitled "Uvonne Yeager Fund for WKAR TV."

Trustee Foster **moved to approve** the recommendations, with support from Trustee Mosallam.

THE BOARD VOTED to approve the resolutions.

B. **New Investment Manager—David Leone & Partners Investment Company LLP**

It was recommended that the Board of Trustees select David Leone & Partners Investment Company LLP as an investment manager in the Common Investment Fund's marketable alternatives asset class.

BE IT RESOLVED, that the Board of Trustees of Michigan State University hereby appoints David Leone & Partners Investment Company LLP as an investment manager.

Trustee Foster **moved to approve** the recommendation, with support from Trustee Mosallam.

THE BOARD VOTED to approve the resolution.

C. Revised Investment Policy

It was recommended that the Board of Trustees amend its Investment policy to provide additional flexibility and the related Statement of Investment Objectives for Michigan State University's Common Investment Fund (CIF) to modify certain asset allocation ranges.

BE IT RESOLVED, that the Board of Trustees of Michigan State University hereby amends Board Policy 01-07-01, the Investment Policy, including the Statement of Investment Objectives for Michigan State University's Common Investment Fund. (Appendix B)

Trustee Foster **moved to approve** the recommendation, with support from Trustee Breslin.

THE BOARD VOTED to approve the resolution.

D. Project Approval—Authorization to Proceed—Crop Science—Field Laboratory—Storage 2 (landscape change)

It was recommended that the Board of Trustees authorize the Administration to proceed with the construction of an additional storage building for the Department of Plant, Soil, and Microbial Sciences.

BE IT RESOLVED, that the Board of Trustees of Michigan State University hereby authorizes the Administration to proceed with the project entitled "Crop Science—Field Laboratory—Storage 2."

Trustee Foster **moved to approve** the recommendation, with support from Trustee Byrum.

THE BOARD VOTED to approve the resolution.

E. Project Approval—Authorization to Proceed—Electrical Distribution—Renewable Energy

It was recommended that the Board of Trustees endorse the Administration's plan to enter into agreements for the establishment of a large-scale solar photovoltaic power-generating system on the campus of MSU by authorizing the Administration to proceed with a project whose purpose is to support that power-generating system.

BE IT RESOLVED, that the Board of Trustees of Michigan State University hereby authorizes the Administration to proceed with the project entitled "Electrical Distribution—Renewable Energy", with a project budget of \$2,500,000.

Trustee Foster **moved to approve** the recommendation, with support from Trustee Byrum.

THE BOARD VOTED to approve the resolution.

- F. Project Approval—Authorization to Proceed—T. B. Simon Power Plant—Upgrade Utility Substation (amended scope)

It was recommended that the Board of Trustees authorize the Administration to amend the scope of the project entitled "T. B. Simon Power Plant—Upgrade Utility Substation" to include the construction of a new Michigan Electric Transmission Company (METC) high voltage switch-station.

BE IT RESOLVED, that the Board of Trustees of Michigan State University hereby authorizes the Administration to amend the scope of the project entitled "T. B. Simon Power Plant—Upgrade Utility Substation," without changing the project budget of \$24,000,000, and grants an additional easement to Consumers Energy along Power Line Drive near College Road, upon terms and conditions as may be acceptable to the Executive Vice President for Administrative Services

Trustee Foster **moved to approve** the recommendation, with support from Trustee Byrum.

THE BOARD VOTED to approve the resolution.

- G. Project Approval—Authorization to Proceed—Electrical Distribution—Upgrade Northwest Zone

It was recommended that the Board of Trustees authorize the Administration to proceed with upgrading the campus electrical system on northwest campus to ensure reliability and to accommodate expansion.

BE IT RESOLVED, that the Board of Trustees of Michigan State University hereby authorizes the Administration to proceed with the project entitled "Electrical Distribution—Upgrade Northwest Zone", with a project budget of \$2,500,000.

Trustee Foster **moved to approve** the recommendation, with support from Trustee Byrum.

THE BOARD VOTED to approve the resolution.

8. Policy Committee

Trustee Byrum presented the Trustee Policy Committee Report and recommendations.

A. Naming Proposal: State Police Post Site Redevelopment

It was recommended that the Board of Trustees name the development on the site of the former State Police Post site 1855 Place and that the adjacent parking courts be named Pine Tree Court, Maple Court, and Ivy Court.

BE IT RESOLVED, that the development occurring on the former State Police Post site, located on the corner of S. Harrison Road and E. Kalamazoo Street, presented to the Board of Trustees for authorization to proceed on June 17, 2015, be named 1855 Place and that the adjacent parking courts be named Pine Tree Court, Maple Court, and Ivy Court.

Trustee Byrum **moved to approve** the recommendation, with support from Trustee Ferguson.

THE BOARD VOTED to approve the resolution.

F. Approval of Contract Terms

It was recommended that the Board of Trustees approve a contract between Michigan State University and *Alphabet Energy, Inc.*, a California corporation in which faculty member Dr. Donald T. Morelli has a financial interest.

BE IT RESOLVED, that the Board of Trustees of Michigan State University hereby approves an option agreement with *Alphabet Energy, Inc.*, consistent with earlier public notice given at a Board meeting and with an "Option Agreement Term Sheet" presented to the Board. (Appendix C)

It was recommended that the Board of Trustees approve a contract between Michigan State University and *Phenometrics, Inc.*, a

Delaware corporation in which faculty member Dr. David M. Kramer has a financial interest.

BE IT RESOLVED, that the Board of Trustees of Michigan State University hereby approves a license agreement with *Phenometrics, Inc.*, consistent with earlier public notice given at a Board meeting and with an "Amended and Restated License Agreement Term Sheet" presented to the Board. (Appendix D)

It was recommended that the Board of Trustees approve a contract between Michigan State University and *Ubiquitous Energy, Inc.*, a Delaware corporation in which faculty member Dr. Richard Lunt has a financial interest.

BE IT RESOLVED, that the Board of Trustees of Michigan State University hereby approves a license agreement with *Ubiquitous Energy, Inc.*, consistent with earlier public notice given at a Board meeting and with the "License Agreement Term Sheet" presented to the Board. (Appendix E)

Trustee Byrum **moved to approve** the recommendations, with support from Trustee Mosallam.

THE BOARD VOTED to approve the resolution.

G. Notice of Intent to Negotiate Contracts

Pursuant to State law, Trustee Byrum gave public notice of the University's intent to negotiate contracts with *BIOMASS SOLUTIONS, LLC*, a Michigan limited liability company. Dr. Kyung-Hwan Han, a Professor in the Department of Horticulture, and Okran Han, an employee in the Department of Horticulture, and members of their family have, or have options to buy, an interest in the company.

Pursuant to State law, Trustee Byrum gave public notice of the University's intent to negotiate contracts with *SWRT Solutions, LLC*, a Michigan limited liability company. Dr. Alvin J.M. Smucker, a Professor in the Department of Plant, Soil, and Microbial Sciences, and members of his family have, or have options to buy, an interest in the company.

9. Trustee Comments

Trustee Ferguson thanked President Simon for her leadership and his colleagues for their support and work on behalf of MSU.

Trustee Mosallam acknowledged Vice President Groves and his team for their work on the capital campaign.

Trustee Foster mentioned the groundbreaking for 1855 Place and encouraged everyone to attend.

Trustee Byrum thanked all of Team MSU for its work during this busy time of year. Trustee Byrum also thanked Governor Blanchard for his donation and support of the lecture series.

Trustee Perles congratulated Provost Youatt on the opening of the academic year. Trustee Perles also thanked Governor Blanchard for his support of MSU.

Trustee Breslin thanked Dr. Gonzales for his research presentation and work on behalf of MSU. Trustee Breslin acknowledged Animal Science, AgBioResearch, and MSU Extension for the Grass Fed Exchange Council meeting. The meeting will be hosted in Michigan due to MSU's cutting edge technology.

Trustee Lyons thanked Governor Blanchard and Draymond Green for their donations along with Vice President Groves for his work on the capital campaign.

11. Request to Adjourn

On a motion by Trustee Ferguson, supported by Trustee Byrum, **THE BOARD VOTED to adjourn** at 11:15 a.m.

Respectfully submitted,



William R. Beekman
Vice President and Secretary of the Board of Trustees

**RESEARCH
PRESENTATION
TO THE MSU BOARD OF TRUSTEES**

SEPTEMBER 11, 2015

**HECTOR M. GONZÁLEZ
COLLEGE OF HUMAN MEDICINE**

Facilitated by the Office of the Vice President for
Research and Graduate Studies


Hector M. González is a Michigan State University Associate Professor of Epidemiology and Biostatistics in the College of Human Medicine. He is a licensed clinical neuropsychologist with clinical research training and experiences in Alzheimer's Disease Research Centers in California and Michigan. Dr. González was a research fellow and later co-investigator of the *Sacramento Area Latino Study on Aging (SALSA)*, which is a landmark dementia study in the field.

He is Principal Investigator of the Hispanic Community Health Study/Study of Latino, Neurocognitive Reading Center, which is the largest and most in-depth study of Latino health to-date. Today, Dr. González will describe the newly funded, *Study of Latinos-Investigation of neurocognitive aging (SOL-INCA)*.


**Study of Latinos-Investigation of neurocognitive aging
(SOL-INCA)
ancillary study of the
Hispanic Community Health Study/Study of Latinos
(HCHS/SOL)**



Hector M. González, PhD
Michigan State University
Department of Epidemiology and Biostatistics

 **Funding**

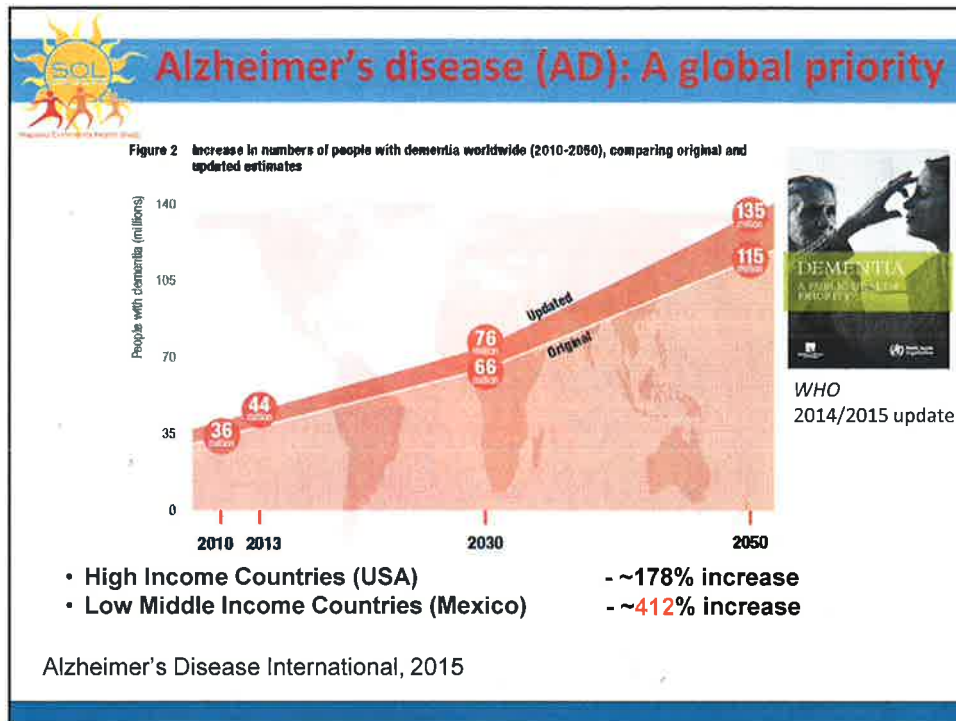
Lead Institute

 National Institute on Aging ■ ◆ ✦ ✦

Dallas Anderson

HCHS/SOL Institutes:

- National Institute of Diabetes and Digestive and Kidney Diseases
- **National Heart Lung and Blood Institute**
- **National Institute of Neurological Disorders and Stroke**
- National Institute of Deafness and Other Communication Disorders
- National Institute of Dental and Craniofacial Research
- National Institute of Minority Health and Health Disparities
- National Institute of Health-Office of Dietary Supplements



The New York Times U.S.

WORLD U.S. N.Y. / REGION BUSINESS TECHNOLOGY SCIENCE HEALTH SPORTS OPINION
POLITICS WASHINGTON EDUCATION

More Alzheimer's Risk for Hispanics, Studies Find

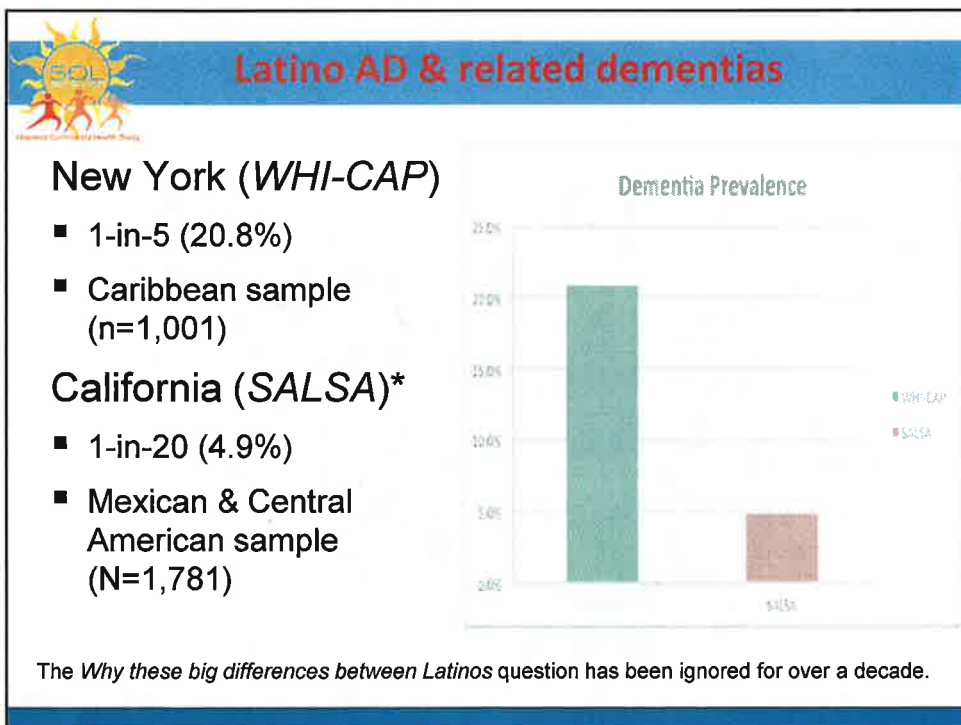
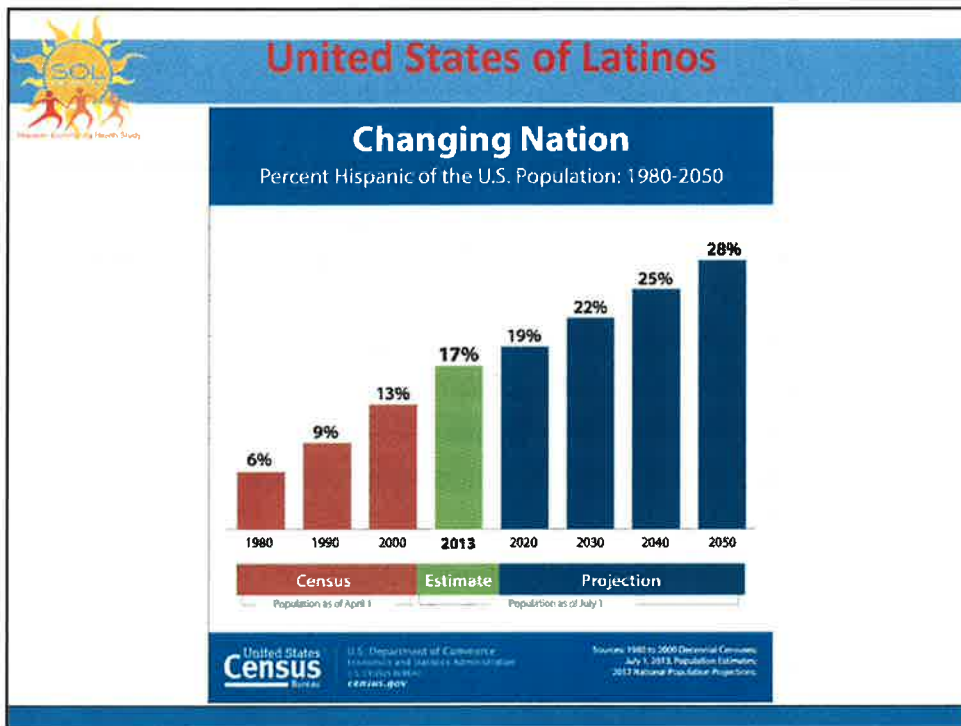
After Antonio Vasquez, 63, in North Philadelphia with granddaughter Alexandra Martinez, learned that he had Alzheimer's, he and his wife moved in with a daughter. [More Photos >](#)


By PAM BELLUCK
Published: October 20, 2009

PHILADELPHIA — Antonio Vasquez was just 60 when [Alzheimer's disease](#) derailed him.

Multimedia He lost his job at a Queens bakery because he kept burning chocolate chip cookies, forgetting he had cut

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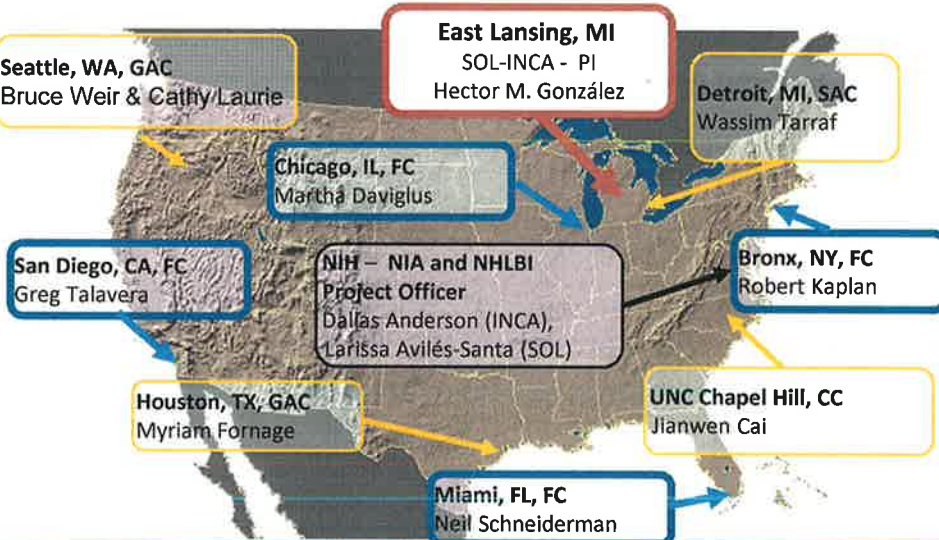
SOL-INCA Aims Will

- Explain the 4-fold ADRD differences between Caribbean & Mainland Latinos*
- Characterize & compare **Mild Cognitive Impairment (MCI)** and ADRD syndromes in middle-aged & older Latinos
- Cardio/cerebrovascular pathways**
- Deep CVD characterizations (e.g., ECG, sleep)
- Genomics**+
- 13,225 Genome wide association studies (released 2014)
- 12,100 Whole exome sequences (release late Fall 2015)

*Amerind
 **New diagnostic prodrome of ADRD
 **HCHS/SOL existing infrastructure!
 +Joining global genomic consortia (e.g., ADSP, CHARGE, GUARDIAN, PAGE & others)



HCHS/SOL* (n=16,415) Centers



*Framingham study for Latinos, a research platform



SOL-INCA next steps (fall 2015)

Characterize & compare etiologies...

- Neurologic exams
 - biomarkers
- Advanced neuroimaging*
 - MRI & PET with amyloid & others
- GWAS & Whole exome sequences





Global next steps (Mexico & Latin America)

- Yucateco Estudio de Salud (YES)
 - ADRD resilience
 - Yucateco Mayan & Mestizo sample
- Secretaria de Salud de Yucatán (SSY)
- Instituto Nacional de Geriátría (INGERI)









Conclusions

- ADRD global and domestic public health priority
- SOL-INCA and YES will fill critical scientific gaps
- Longitudinal SOL-INCA (20+ years)
 - Framingham, ARIC & others
- Congress ordered NIH Bypass Budget (Cancer)
 - Major increases budget through 2025
 - enable SOL-INCA



SOL-INCA goal

*Improve global aging populations health by **discovering** early means for mitigating cognitive decline and the terrible disease burden of Alzheimer's disease, vascular dementia and other neurocognitive disorders.*

 Hispanic Community Health Study	Dallas Anderson National Institute on Aging	Jackson, MS Thomas Mosley
Bronx, NY Robert Kaplan Richard Lipton*		Miami, FL Neil Schneiderman Clinton Wright*
Chicago, IL Martha Daviglius		San Diego, CA Gregory Talavera
Detroit, MI Wassim Tarraf		Houston, Tx Myriam Fornage
Seattle, WA Catherine Laurie Bruce Weir		Chapel Hill, NC Jianwen Cai Sonia Davis
Sacramento, CA Charles DeCarli*	The 16,415 SOL participants Scores of SOL staff & volunteers	

INVESTMENT POLICY**01-07-01****I. General Statement**

As stated in the Constitution of the State of Michigan and in the Bylaws of the Board of Trustees of Michigan State University (Board), the Board is responsible for the “control and direction of all expenditures from the institution’s funds.” In carrying out this responsibility with respect to the University’s investments, the Board has established a framework for active, professional investment management. This policy states the responsibilities of the parties involved in carrying out the investment program.

The Board will establish an investment program for the investment of University funds for maximum return with an acceptable degree of risk. Within the context of its fiduciary responsibilities, the Board will exhibit social conscience in the administration of the University’s investment portfolio.

All institutional funds available for long-term investment (generally at least five years), with the exception of funds restricted by law or by special donor limitations, will be consolidated into the Board’s Common Investment Fund (CIF). (See Exhibit A for the CIF Statement of Investment Objectives.) All institutional cash, with the exception of cash restricted by external agreements or by special donor limitations, will be consolidated into the Board’s Pooled Cash Fund for investment purposes. The Pooled Cash Fund shall consist of i) the Liquidity Pool (short and intermediate-term commercially available funds) and ii) the Liquidity Reserve Pool. (See Exhibit B for the Pooled Cash Fund Statement of Investment Objectives.)

II. Nature of Assets

Three distinct types of assets are covered by this policy:

1. Institutional Funds - Assets owned and held for long-term investment by the University, such as employee retirement funds and endowment funds, which include endowment trusts and funds functioning as endowments.
2. Annuity and Life Income Funds - Assets held for permanent investment by the University as trustee for the benefit of named beneficiaries, to revert to the University upon the demise of the last beneficiary or after a specified period of time, which should be invested to produce annual returns at least equal to contractually required payments to beneficiaries.
3. Institutional Cash – Cash being pooled and invested pending its intended use.

III. Role of Board of Trustees

The Board:

1. Shall exercise its investment responsibilities through its Finance Committee;

2. Shall, upon the recommendation of the Finance Committee, establish investment policies relating to the administration of its investment portfolio;
3. Shall, upon the recommendation of the Finance Committee, establish investment objectives;
4. Shall, upon the recommendation of the Finance Committee, appoint an investment consultant, investment managers and investment custodians for the Institutional Funds; and
5. Shall receive periodic reports on investment results through the Finance Committee.

IV. Role of Finance Committee

The Finance Committee:

1. Shall, in consultation with the Investment Advisory Subcommittee, make recommendations about policies relating to the administration of the University's investment portfolio to the Board;
2. Shall, in consultation with the Investment Advisory Subcommittee, recommend to the Board an investment consultant, investment managers and investment custodians for the Institutional Funds;
3. Shall receive periodic reports on the investment status of the portfolios and shall transmit relevant information from such reports to the Board; and
4. Shall consider other investment-related matters.

V. Role of the Chairperson of the Finance Committee

1. The Chairperson of the Finance Committee, or in the event of the temporary absence or disability of the Chairperson, the Vice Chairperson of the Finance Committee, is authorized to appoint investment managers when recommended by the Vice President for Finance and Treasurer (VPFT), in consultation with the investment consultant, when Board action on such new manager appointments at a regularly scheduled Board meeting is not feasible due to the timing of the investment opportunity; **provided that**
 - a. the VPFT shall notify the Board and members of the Investment Advisory Subcommittee of each proposed new manager appointment by fax or email at least one week prior to action on the proposed appointment;
 - b. the proposed new manager appointment shall not be acted upon if, within forty-eight hours of the notification, at least three Trustees request a special Board meeting on the proposed appointment;
 - c. available members of the Investment Advisory Subcommittee shall be consulted prior to making any new manager appointment pursuant to this Section V; and
 - d. amounts committed in connection with new manager appointments shall be within the targeted asset allocation range specified in the CIF Statement of Investment Objectives.
2. In connection with the appointment of an investment manager under this Section V, the Chairperson of the Finance Committee, or in the event of the temporary absence or

disability of the Chairperson, the Vice Chairperson of the Finance Committee, is authorized to approve University administration implementing the appointment through the formation of an entity that will function as an investment vehicle through which University funds may be committed to the newly appointed investment manager; provided that

- a. the proposed investment vehicle entity and proposed equity holders of such entity are included in the notice provided under subsection 1 of this Section V,
 - b. the proposed investment vehicle entity shall not be authorized if within forty-eight hours of the notification, at least three Trustees request a special Board meeting on the use of the proposed entity; and
 - c. the available members of the Investment Advisory Subcommittee shall be consulted prior to authorizing the use of any new investment vehicle entity pursuant to this Section V.
3. The amount of University funds committed under this Section V in connection with new manager appointments shall not exceed:
- a. ~~\$25 million~~ 2% of CIF as of June 30 of prior year per new investment manager, or
 - b. ~~an aggregate amount of \$150 million~~ 10% of CIF as of June 30 of prior year per calendar year.
4. The VPFT shall document compliance with each of the conditions of this Section V before implementing the appointment of a new investment manager or the creation of an investment vehicle entity.
5. Any new investment manager appointment and any new joint investment vehicle created in connection with such appointment pursuant to this Section V shall be reported to the Board and members of the Investment Advisory Subcommittee.

VI. Role of the Investment Advisory Subcommittee

The Investment Advisory Subcommittee:

1. Shall advise the Finance Committee in the review and evaluation of investment opportunities and strategies;
2. Shall provide knowledgeable, objective and independent advice to the members of the Finance Committee and University administration on strategic investment planning and policy, investment opportunities, and such other matters as shall be determined by the Board;
3. Shall review policies relating to the administration of the University's investment portfolio and, when appropriate, shall advise the Finance Committee about such policies;
4. Shall, in consultation with the investment consultant, the investment managers and the University administration, annually review the performance and investment objectives of the portfolio of Institutional Funds investments;
5. Shall, in consultation with the University administration, semiannually review the performance and investment objectives of the Pooled Cash Fund;

6. Shall, in consultation with the University administration, advise the Finance Committee concerning the investment consultant, investment managers and investment custodians for the Institutional Funds; and
7. Shall usually meet with the investment consultant quarterly, but in no case less frequently than three times a year, and shall periodically evaluate the performance of the investment managers, in consultation with the University administration and the investment consultant.

VII. Role of the Investment Consultant

The Investment Consultant:

1. Shall annually develop and communicate to the Finance Committee, through its meetings with the Investment Advisory Subcommittee, an appropriate strategy to meet the Board's long-term investment objectives for the Institutional Funds;
2. Shall usually meet with the Investment Advisory Subcommittee quarterly, but in no case less frequently than three times a year, and with the Finance Committee as needed;
3. Shall advise the Finance Committee, through its meetings with the Investment Advisory Subcommittee, regarding searches for investment managers and investment custodians;
4. Shall provide a monitoring and measurement program that will permit evaluation of the performance of the CIF portfolio, asset classes within the portfolio and investment managers in comparison with applicable investment market benchmarks and with other managers;
5. Shall provide a monitoring and measurement program that will permit evaluation of the performance of the Liquidity Reserve Pool and investment managers in comparison with applicable investment market benchmarks and with other managers;
6. Shall provide a monitoring and measurement program that will permit evaluation of the performance of the Liquidity Pool and investment managers in comparison with applicable investment market benchmarks and with other managers; and
7. Shall provide such other information pertaining to the Board's investment program as may reasonably be required and shall report immediately to the Board any major change in its confidence regarding the securities markets.

VIII. Role of the Investment Managers

Each investment manager:

1. Shall report at least quarterly to the University administration on performance and other appropriate matters;
2. Is authorized to execute investment transactions within its established guidelines, subject to any restrictions established by the Board;
3. Shall provide other necessary information for the development of interim reports and

shall meet, as necessary, with the Finance Committee, the Investment Advisory Subcommittee and the VPFT; and

4. Shall vote all proxies in a manner most likely to preserve or enhance the value of the underlying investments and normally to support management on routine matters.

IX. Role of the Investment Custodians

Each investment custodian:

1. Shall hold all securities in an agreed-upon nominee name and form;
2. Shall execute all transactions as directed by the relevant investment manager;
3. Shall collect all income pertaining to the securities held, and shall temporarily invest such income in cash equivalents;
4. Shall periodically remit accumulated income to the University, for credit to the appropriate funds or trusts, pursuant to instructions received from the University administration;
5. Shall provide the University with a full monthly accounting of all transactions, together with a listing of all holdings at cost and market; and
6. Shall provide such other information as may reasonably be required.

X. Role of the University Administration

The University administration through the VPFT:

1. Shall continuously monitor and review the investment consultant's reports, the actions of the investment managers and the status of the University's investment portfolios;
2. Shall serve as a liaison for communication among the Board, the Finance Committee, the Investment Advisory Subcommittee, the investment consultant and the investment managers;
3. Shall maintain communications, as appropriate, among the Board, the Finance Committee, the Investment Advisory Subcommittee, the investment consultant and the investment managers;
4. Shall make recommendations to the Finance Committee, in consultation with the Investment Advisory Subcommittee, concerning investment policies, structure, objectives and selection of investment managers;
5. Shall rebalance the portfolio, generally on a quarterly basis, in order to stay within the asset allocation parameters established by the Board and to maintain proper diversification among individual investment managers,
 - a. by reallocating funds among accounts or investment vehicles managed by investment managers already approved by the Board or by the Chairperson of

- the Finance Committee pursuant to Section V of this policy, or
- b. by managing net cash flows into and out of the CIF by adding to underweight positions or withdrawing from overweight positions;
6. Shall report all rebalancing transactions and all new financial commitments to private investments completed during the quarter to the Finance Committee and Investment Advisory Subcommittee, and shall provide quarterly reports to the Finance Committee and Investment Advisory Subcommittee showing potential rebalancing transactions that are likely to occur over the ensuing quarter;
 7. Shall have the authority to allocate funds to investment managers already approved by the Board or by the Chairperson of the Finance Committee through use of a joint investment vehicle entity, such as a limited liability company, and shall have the authority to take all actions and execute all documents in connection with the formation, management, operation and dissolution of any such joint investment vehicle entity.
 8. Shall report monthly to the Board and the Investment Advisory Subcommittee any market value decline in excess of both 10 percent and \$500,000 in the value of the CIF, of the Liquidity Reserve Pool, of the Liquidity Pool or of Institutional Funds that are separately invested due to donor limitations;
 9. Shall report quarterly to the Board and the Investment Advisory Subcommittee any market value decline in excess of both 10 percent and \$500,000 in the value of the University's investment with an investment manager; and
 10. Shall have the authority to appoint, or may act in the role of, the investment managers and investment custodians for the Pooled Cash Fund and shall report any such appointments to the Finance Committee, the Investment Advisory Subcommittee and the Board.

XI. Endowment Spending

1. In fulfillment of its fiduciary duties as trustee of the University's endowment and other Institutional Funds, the Board causes those Funds to be invested to generate amounts that may be expended for the purposes for which those Funds were established ("programmatic spending") and amounts that may be accumulated for reinvestment to preserve the value of those Funds, and their purchasing power, against inflation. These are the priorities for the use of the University's endowment and other Institutional Funds. The Board may also permit reasonable and appropriate costs to be charged to the endowment and other Institutional Funds. These charges may include reasonable and appropriate costs of administering and managing the Institutional Funds, such as reasonable and appropriate internal and external investment costs and, for certain Institutional Funds, fund-raising costs. Additional returns, if any, generated by the investment of the Institutional Funds may be used to add real principal growth to such Funds, to better preserve their long-term value, to improve and further diversify the investment options for such Funds, and, thus, to enhance opportunities to stabilize and increase annual expenditure rates for such Funds.

2. In accordance with these precepts:
- a. (i) The University will make available for programmatic spending 5.0 percent of the average market value of the CIF as calculated for the 20 quarters of the five calendar years prior to the beginning of the fiscal year in which the spending is expected to occur, expressed as a dollar per unit annual distribution amount based on the number of units in the CIF at the time of the calculation. Programmatic spending distributions will be made to CIF unit holders on a periodic basis during the fiscal year based on the number of units in the CIF held when each periodic programmatic spending distribution is made.¹ The VPFT will determine when the periodic programmatic spending distributions will occur.
 - (ii) This programmatic spending rate shall be reviewed annually by the Finance Committee, in consultation with the Investment Advisory Subcommittee. In connection with each of these reviews, the University's investment staff shall present an analysis of the projected impact of inflation on the University's endowment and other Institutional Funds, including how inflation is expected to affect their purchasing power (*i.e.*, the expenditures of amounts for the purposes for which those funds were established).
 - b. Reasonable and appropriate internal and external investment costs for the CIF, including the costs of the investment consultant, the investment managers and the investment custodians and the University's own investment management costs (staff and support), shall be deducted in determining the average market value of the CIF available for programmatic spending pursuant to Section XI (2)(a)(i) of this policy.
 - c. The President and the VPFT are authorized to establish annual assessments for endowment stewardship, including fund raising, against those of the University's endowment and other Institutional Funds established entirely or primarily with private donations. The amount of the assessments must be reasonable and appropriate, particularly when considered in the context of the University's priorities for the use of its endowment and other Institutional Funds. In any event, the amount assessed may not, without further Board action, exceed 1 percent of the average market value of the CIF units held by such Funds. The calculation of the amount assessed and its allocation to the Funds subject to assessment shall be conceptually consistent with the methodology by which programmatic spending distributions are calculated and allocated under Section XI (2)(a)(i) of this policy. Assessments will be made periodically during the fiscal year, as determined by the VPFT. Not less than 30 days prior to the annual review of the programmatic spending rate pursuant to Section (2)(a)(ii) of this policy, the President and the VPFT shall provide a written report to the Finance Committee and other members of the Board stating the amount, if any, of the assessment for the following fiscal year and how it was determined.

¹ The per unit annual distribution amount will be allocated evenly over the periodic programmatic spending distributions during the fiscal year. The amount of the periodic programmatic spending distributions will not be reduced if the number of units in the CIF increases between when the per unit annual distribution amount is calculated and when the periodic programmatic spending distributions occur.

3. If the University has accepted a gift to an endowment fund documented by a gift instrument in which the donor gives legally binding instructions for the investment of, or expenditures from, that fund which are inconsistent with the foregoing, the University will comply with those special instructions. The VPFT shall calculate the annual programmatic spending distribution and assessment for each endowment fund which is not invested in the CIF in accordance with applicable law and report the programmatic spending rate and assessment amount for each such fund to the Finance Committee. Insofar as possible, given each such fund's investments and the instructions of its donor, the priorities for the use of such funds should be the same as those for endowment funds invested in the CIF.

Enacted: 1/26/79

Amended: 4/15/83, 6/8/84, 2/6/87, 10/14/88, 12/6/91, 4/10/98, 9/22/00, 6/5/03, 5/7/04, 11/12/04, 5/18/07, 12/05/08, 4/24/09, 4/16/10, 9/17/10, 12/10/10, 10/21/11, 12/14/12, 1/25/13, 4/12/13, 6/21/13, 9/11/15

Statement of Investment Objectives

Exhibit A: Michigan State University's Common Investment Fund

INTRODUCTION

This statement defines the investment objectives of Michigan State University's Common Investment Fund ("CIF"), which is composed primarily of the University's endowment funds. While other Institutional Funds (e.g., the Retirement Fund) may use the CIF as an investment vehicle, the separate statements of investment objectives for these funds shall govern their investment if their investment objectives are materially different from those of the endowment funds.

INVESTMENT OBJECTIVES

The investment objectives of the CIF are:

1. to achieve a total rate of return sufficient to generate the amount annually made available for spending² by the University's programs supported by endowment funds and still provide a modest increase in the inflation-adjusted unit value, and
2. to achieve the desired return while assuming only moderate risk.

The University will seek to achieve these investment objectives by diversifying across major asset classes (e.g., marketable equities, private investments, ~~marketable alternatives~~ hedge funds, fixed income) as well as within each asset class (e.g., by investment style, capitalization, industry).

SHORT-TERM PERFORMANCE GOALS

Short-term performance goals for the CIF and for individual managers will be to outperform appropriate market and peer benchmarks over rolling three and five-year periods. Furthermore, adherence to the investment style for which individual managers were selected will be monitored. Private investments will be expected to outperform their respective median vintage year benchmarks.

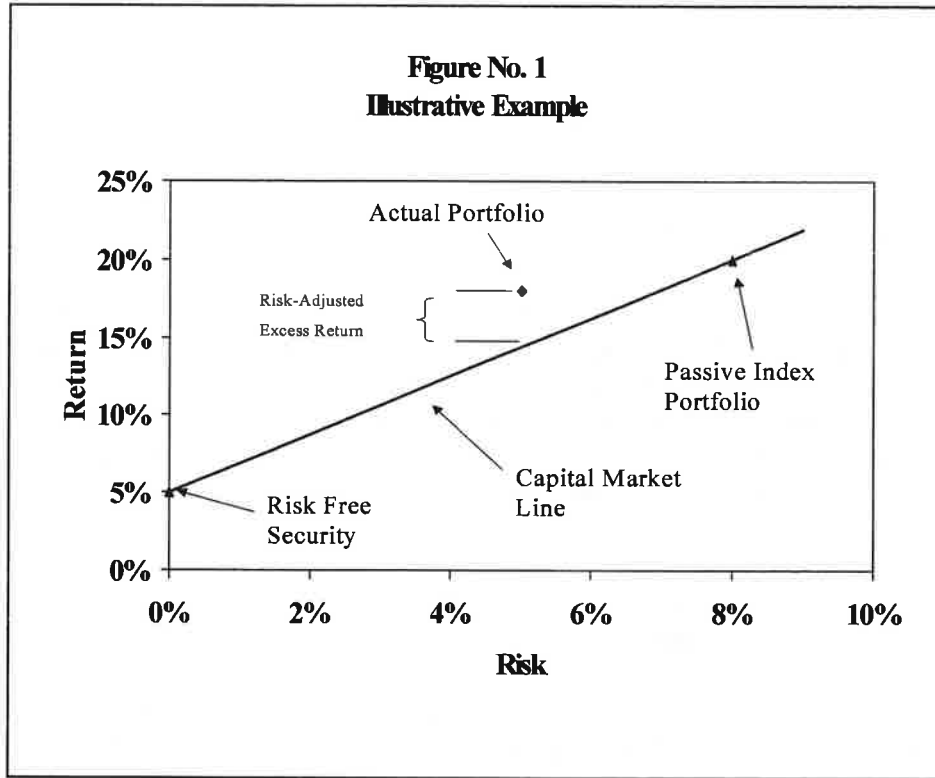
LONG-TERM PERFORMANCE GOALS

The following long-term performance goals of the CIF are expected to be achieved over rolling ten-year periods:

1. A total annual return greater than the rate of inflation plus 6.0%, after fees and expenses.
2. To the extent an actively managed strategy is used, a risk-adjusted, excess annual return greater than 1.0%, after fees and expenses. Risk-adjusted, excess return is defined as a portfolio's actual return over and above that of the benchmark portfolio as predicted by the Capital Asset Pricing Model. (See Figure No. 1.) The Jensen measure is used to calculate the risk-adjusted return.

² The current endowment spending policy authorizes the University to make available 5.0% of the average market value of the endowment as calculated for the twenty quarters of the five calendar years prior to the beginning of the fiscal year in which the spending is expected to occur.

**Figure No. 1
Illustrative Example**



*The passive index portfolio will be composed of benchmark indices, for which passive index funds exist, and weighted to reflect the CIF's asset allocation. It should be noted, however, for private investments for which passive index funds do not exist, well-established indices corresponding to marketable securities will be used.

Table No. 1 lists the benchmark indices and long-term performance goals for each major asset class. The long-term performance goal for each individual manager will be based on the asset class and investment style for which the manager was selected.

Table No. 1 Benchmarks & Long-Term Performance Goals		
Major Asset Class	Benchmark	Long-Term Performance Goals
U.S. Equity	Russell 3000	If passive, benchmark. If active, risk-adjusted excess return of 1.0% after fees
Developed Global ex U.S. Equity	MSCI EAFE	If passive, benchmark. If active, risk-adjusted excess return of 1.0% after fees
Emerging Markets Equity	MSCI Emerging Markets	If passive, benchmark. If active, risk-adjusted excess return of 1.0% after fees

<u>Inflation-Hedge- Marketable Marketable Real Assets</u>	<u>Inflation-Hedge Real Asset</u> Blended Benchmark (50% MSCI U.S. Natural Resources / 25% FTSE NAREIT Equity Index / 25% S&P GSCI)	If passive, benchmark. If active, risk-adjusted excess return of 1.0% after fees
<u>Inflation-Hedge-Private Investments Private Real Assets</u>	Vintage year median IRR for asset class	Meet or exceed benchmark
Private Investments	Vintage year median IRR for asset class	Meet or exceed benchmark
<u>Marketable-Alternatives Hedge Funds</u>	HFRI Fund of Funds Diversified Index	Meet or exceed benchmark
Fixed Income	Barclays Aggregate	If passive, benchmark. If active, risk-adjusted excess return of 0.50% after fees

ASSET ALLOCATION

Table No. 2 sets forth the policy targets and ranges for each major asset class:

Table No. 2 Asset Allocation			
Major Asset Class*	Target	Range	Rationale*
U.S. Equity	16.0%	11.0% - 22.0% 27%	Maximize real returns
Developed Global ex U.S. Equity	10.0%	8.0% - 14.0% 20%	Maximize real returns & diversification
Emerging Markets Equity	8.0%	4.0% - 12.0%	Maximize real returns & diversification
<u>Inflation-Hedge Real Assets</u>	10.0%	7.5% - 15.0%	<u>Inflation-hedge- Real Asset</u> & diversification
Private Investments	18.0% 26%	10.0% - 24.0% 12% - 32%	Higher returns than equities & diversification
<u>Marketable-Alternatives Hedge Funds</u>	25.0% 22%	20.0% 17% - 30.0%	Low volatility & moderate correlation with equities
Fixed Income	13.0% 8%	5.0% - 22.0% 3% - 17%	Deflation hedge & diversification

* See detailed descriptions of each asset class listed below.

U.S. Equity. This asset class consists of marketable equity securities of primarily U.S.-based companies. Managers may hold equity securities of non-U.S.-based companies which are traded as American depository receipts ("ADR's") on U.S. stock exchanges. It is intended to be a long-term hedge against inflation and provide a real return of about 7%. Several sub-categories of this asset class include: large capitalization companies, small capitalization companies, value-style investing and growth-style investing. While the benchmark for this entire class is the Russell 3000 Index, individual managers may have specific benchmarks corresponding to their investment style and capitalization category.

Developed Global ex U.S. Equity. This asset class consists of marketable equity securities in developed countries outside the U.S. It is intended to provide long-term performance

similar to U.S. equities, but will provide some diversification due to imperfect correlation. This class will be diversified geographically.

Emerging Markets Equity. This asset class consists of marketable equity securities in emerging markets. It is intended to provide long-term performance similar to U.S. equities, but will provide some diversification due to imperfect correlation. This class will be diversified geographically.

Real Assets Inflation Hedge. The University will seek to reduce the volatility of the CIF and provide a hedge against sudden, unanticipated inflation by investing a portion of its available funds in real estate and natural resource investments, such as oil, gas, timber and minerals oriented investments. Risks related to the real estate investments will be minimized by diversifying through use of real estate investment pools or partnerships that are varied as to property type, location, investment life cycle and investment manager. This core real estate portfolio may be supplemented with less diversified specialty funds or direct investments. Risks related to natural resource investments will be controlled by diversifying among operators and acquisition prospects and by geography.

Private Investments. The University will seek to enhance the total return of the CIF by investing a portion of its funds in private investments, which include distressed, private equity and venture capital investments. These investments are illiquid and higher risk/return assets than marketable securities. Risk will be controlled by diversifying across a number of fund managers and by geographic focus, industry emphasis, financing stage and vintage year. This core private investments portfolio may be supplemented with less diversified specialty funds or direct investments.

Hedge Funds Marketable Alternatives. The University will seek equity-like returns while reducing the volatility of the CIF by investing a portion of its funds in strategies designed to achieve positive absolute returns with less correlation to broad market trends while employing risk management techniques intended to reduce downside potential. Managers employing "long/short" strategies invest primarily in equities and mitigate market risk by purchasing equity shares that are expected to appreciate in value and selling short equity shares that are expected to decline in value. Managers employing event-driven and arbitrage strategies seek to maximize returns by investing in publicly announced corporate transactions, such as mergers, tender offers, liquidations, bankruptcies and reorganizations or in arbitraging temporary discrepancies in securities pricing in the equity and fixed income markets. Distressed security managers invest primarily in bonds and bank loans trading at a significant discount to par value as a result of the debtor's troubled financial condition.

Fixed Income. This asset class is intended to reduce the portfolio's exposure to market risk and provide a hedge against sudden, unanticipated deflation. Foreign currency bonds may be held to enhance total return and provide diversification.

INVESTMENT GUIDELINES

- 1) Investment guidelines are provided in Exhibit C.
- 2) Additional guidelines may be adopted by separate Board action. They will be communicated to the affected investment managers.

Updated: 10/14/88, 6/8/90, 12/6/91, 12/11/92, 3/31/94, 7/14/95, 11/8/96, 9/22/00, 6/5/03,
11/14/03, 11/12/04, 6/17/05, 2/10/06, 5/18/07, 12/5/08, 6/19/09, 9/17/10, 10/21/11,
12/14/12, 4/12/13, 9/11/15

Statement of Investment Objectives
Exhibit B: Michigan State University's Pooled Cash Fund

INTRODUCTION

This statement sets forth the investment objectives of Michigan State University's Pooled Cash Fund ("PCF"), which is a subset of the University's overall cash pool. (See Figure No. 1.)

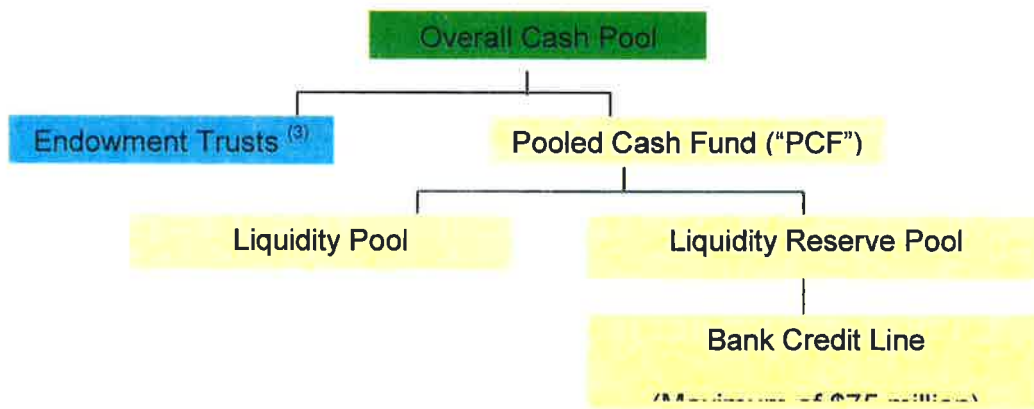
PCF ASSETS

The PCF has two components -- the Liquidity Pool and the Liquidity Reserve Pool. The Liquidity Pool shall be composed of short-term (less than one-year maturity) and intermediate-term (maximum ten-year maturity) commercially available funds (three-year maximum average portfolio duration). These funds shall be available on a daily basis. The target range for the Liquidity Pool shall be 30 - 60 days of operating cash ⁽¹⁾.

The Liquidity Reserve Pool shall be composed of commercially available funds (six-year maximum average portfolio duration) and up to a \$75 million bank line of credit or its equivalent. (See Figure No. 1.) The target amount for the Liquidity Reserve Pool shall be 30 days of operating cash. ⁽¹⁾⁽²⁾

The PCF minimum amount shall be the greater of (1) 45 days of operating cash or (2) the minimum daily liquidity to support five days of maximum commercial paper maturities.

Figure No. 1
Structure of MSU's Overall Cash Pool



- (1) One day of operating cash equals the daily average of operating expenses less depreciation as reported in MSU's Audited Financial Statements for the prior fiscal year.
- (2) See also footnote 1 to Table No. 1 in the event the University employs a bank line of credit in the Liquidity Reserve Pool.
- (3) Overall Cash Pool amounts in excess of 60 days of operating cash may be invested on a long-term basis with other Institutional Funds in the University's Common Investment Fund (CIF).
- (4) The PCF minimum amount shall be the greater of (1) 45 days of operating cash or (2) the minimum daily liquidity to support five days of maximum commercial paper maturities.

Table No. 1 summarizes the target allocations for each component of the PCF.

Table No. 1 PCF Composition		
	Target Allocation	
	Minimum Amount	Target Amount/Range
Liquidity Pool	The greater of (1) 45 days of operating cash or (2) the minimum daily liquidity to support 5 days of maximum commercial paper maturities	30-60 days of operating cash
Liquidity Reserve Pool		30 days of operating cash ⁽¹⁾

1. Up to \$75 million of this amount may be represented by a bank line of credit or its equivalent. Any Liquidity Reserve Pool target amount for which the bank line of credit would substitute would count towards satisfying the PCF minimum amount.

INVESTMENT OBJECTIVES

The investment objectives for each component of the PCF are:

Liquidity Pool. The primary objective is to provide a liquid source of funds to meet the University's daily cash requirements. A secondary objective is to yield a competitive investment return while bearing minimal principal risk.

Liquidity Reserve Pool. The primary objective is to provide a source of funds in the event the Liquidity Pool is insufficient to meet the University's cash needs. A secondary objective is to earn a higher investment return than the Liquidity Pool. Because of the very low likelihood that these funds would be needed to meet cash flow requirements, a greater degree of principal risk is acceptable in order to obtain a higher return.

SHORT-TERM PERFORMANCE GOALS

Short-term performance goals for each component of the PCF, and for individual managers, will be to outperform (if actively managed) net of fees appropriate market and peer benchmarks over rolling one, three and five-year periods. Furthermore, adherence to the investment style for which individual managers were selected will also be monitored.

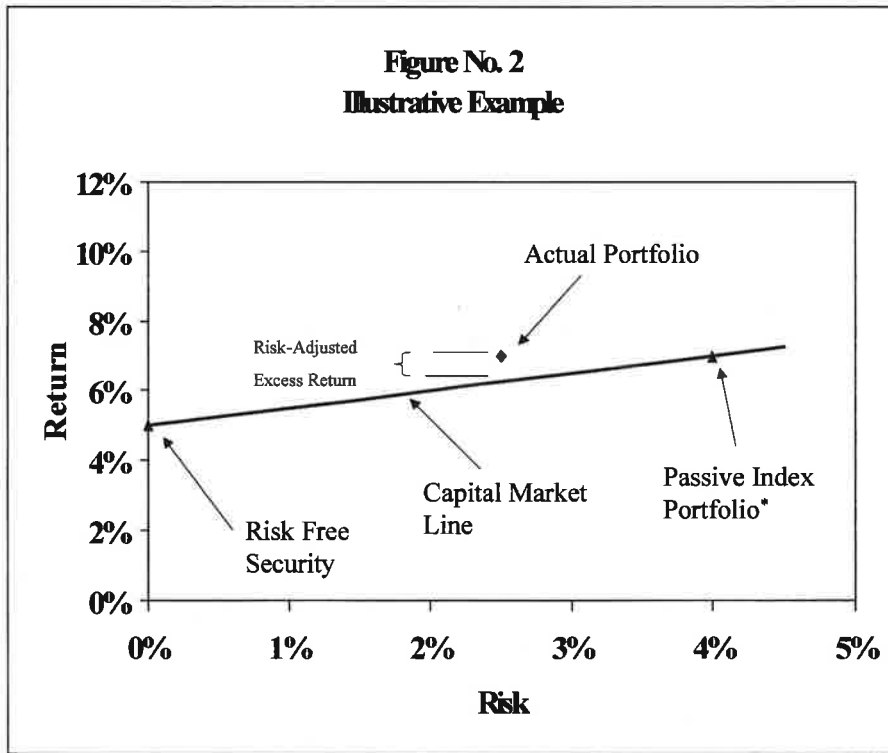
LONG-TERM PERFORMANCE GOALS

The following long-term performance goals of the PCF are expected to be achieved over a ten-year period, measured on a ten-year rolling basis.

- 1) A total annual return net of fees greater than the rate of inflation
 - a. plus 1.5% for the Liquidity Pool, and
 - b. plus 3.0% for the Liquidity Reserve Pool.
- 2) To the extent an actively managed strategy is used, a risk-adjusted, excess annual

- return net of fees greater than
- 0.25% for the Liquidity Pool, and
 - 0.50% for the Liquidity Reserve Pool.

Risk-adjusted, excess return is defined as a portfolio's actual return less the capital market line return corresponding to the same risk level. (See Figure No. 2.)



*The passive index portfolio would be the appropriate fixed income benchmark index.

Table No. 2 lists the benchmark indices and long-term performance goals for each PCF component. Similarly, the long-term performance goal for each individual manager will be for it to contribute a risk-adjusted return corresponding to its respective component of the PCF.

Table No. 2 Benchmarks & Long-Term Performance Goals		
PCF Component	Benchmark	Long-Term Performance Goals
Liquidity Pool	Merrill Lynch 1-3 year Treasury Index	If passive, benchmark. If active, risk-adjusted excess return of 0.25% after fees
Liquidity Reserve Pool	Barclays Aggregate	If passive, benchmark. If active, risk-adjusted excess return of 0.50% after fees

INVESTMENT GUIDELINES

- 1) Liquidity Pool - Investment guidelines are provided in Exhibit C.
- 2) Liquidity Reserve Pool – Investment guidelines are provided in Exhibit C.
- 3) Additional guidelines may be adopted by separate Board action. They will be communicated to the affected investment managers.

Updated: 6/24/83, 2/3/89, 2/7/92, 6/10/94, 10/24/97, 12/8/00, 11/12/04, 12/5/08, 4/16/10,
12/14/12, 6/21/13

**Statement of Investment Objectives
Exhibit C: Investment Guidelines**

<u>Liquidity Pool</u>		<u>Liquidity Reserve Pool</u>		<u>Common Investment Fund</u>	
Separately Managed Funds					
Permitted Securities					
<p>Marketable fixed income securities such as: U.S. government and agency issues; corporate debt; certificates of deposit; time deposits; repurchase and reverse repurchase agreements; mortgage-backed; asset-backed; securities issued under Rule 144A; dollar denominated U.S. and foreign issuers; derivatives for hedging purposes and creating portfolio risk profiles that could otherwise have been achieved using fixed income instruments authorized in these guidelines; commingled and global funds that invest in securities authorized in these guidelines.</p>		<p>Marketable fixed income securities such as: U.S. government and agency issues; U.S and non-U.S. corporate debt; certificates of deposit; time deposits; repurchase and reverse repurchase agreements; inflation indexed bonds; mortgage-backed; asset-backed; securities issued under Rule 144A; obligations of state and local governments and non-U.S. government and agency issues; derivatives for hedging purposes and creating risk portfolio profiles that could otherwise have been achieved using fixed income instruments authorized in these guidelines.</p>		<p>Marketable securities. Non-marketable securities may be held in the <u>Real Assets Inflation Hedge</u>, <u>Non-Marketable Investments</u> <u>Private Investments</u> and Absolute Return asset classes.</p>	
Diversification:					
<p>No more than 15% of the portfolio's market value may be invested in dollar denominated foreign securities of developed countries. No more than 10% of the portfolio's market value will be invested in securities of any single issuer, except those which are obligations of, or fully guaranteed as to both principal and interest by, the U.S. government or its agencies.</p>		<p>No more than 10% of the portfolio's market value may be invested in securities below BBB. No more than 30% of the portfolio's market value may be invested in securities denominated in foreign currencies. No more than 10% of the portfolio's market value will be invested in securities of any single issuer, except those which are obligations of, or fully guaranteed as to both principal and interest by, the U.S. government or its agencies.</p>		<p>In accordance with asset allocation guidelines.</p> <p>Individual investment managers' guidelines at time of manager appointment or as later amended by agreement of both parties.</p>	
Fixed Income:					
Minimum Quality:					
Portfolio:					
AA		AA		AA	
Security (at purchase):					
Short-term	Long-term	Short-term	Long-term	Short-term	Long-term
A1/P1	BBB	A2/P2	B	A2/P2	BB
Maturity/Duration:					
10 year maximum maturity of any security.		No maximum maturity of any security.		No maximum maturity of any security.	
3 year maximum average duration of the portfolio.		6 year maximum average duration of the portfolio.		6 year maximum average duration of the portfolio.	

Commingled Funds: Funds' investment guidelines at time of manager appointment or as later amended prevail.

**Statement of Investment Objectives
Exhibit C: Investment Guidelines
Continued**

| Updated: 11/12/04, 5/18/07, 4/16/10, 10/21/11, 9/11/15

OPTION AGREEMENT TERM SHEET

Party: Alphabet Energy, Inc.

Option: Option on Patent Rights

Term: From the effective date of the agreement to June 30, 2016

Technology: U.S. Patent No. 7,847,179 "Thermoelectric Compositions and Process";
U.S. Patent No. 7,592,535 "Silver-Containing Thermoelectric Compounds"; and
U.S. Patent No. 8,481,843 "Silver-Containing P-Type Semiconductor"
The parties may add or remove technologies under the agreement, including improvements generated under a separate sponsored research agreement, provided that the change does not affect the financial consideration of the parties or the nature or extent of any pecuniary interest of MSU personnel.

Technology's Potential Commercial Utilization: Environmentally friendly polymers

Payment Terms: \$5,000 payable within 30 days of effective date and \$10,000 within 30 days of an extension of the initial option period

Services Provided: By MSU to Alphabet Energy, Inc.: None contemplated under agreement
By Alphabet Energy, Inc. to MSU: None contemplated under agreement

Use of University Facilities/Personnel: None

Organization Type: California corporation

Personnel Interest: Dr. Donald T. Morelli, a Professor in the Department of Chemical Engineering and Materials Science, and members of his family own or have options to buy an equity interest of more than 1 percent of the company. Dr. Morelli is also an officer of Alphabet Energy, Inc.

AMENDED AND RESTATED LICENSE AGREEMENT TERM SHEET

Party:	Phenometrics, Inc.
License:	Exclusive license for commercial purposes
Term:	Ten (10) years from the effective date of the agreement to May 2022 (previous term ended with expiration or abandonment of patent rights)
Technology:	Technical Information included in MSU Invention Disclosure No. TEC2011-0021 "PhotoBioreactor/Sensor Array" (PBSA). The initial license grants rights to pending U.S. Patent application serial no. 13/988,893 and initial royalties were owed to MSU only for PBSA sales in regions where there were issued or pending patents -- which included only the U.S. The amended and restated license is to "know how" on the PBSA design and software regardless of where they are sold. With 2/3 of the PBSA sales outside the U.S., this is a favorable change for MSU.
Technology's Potential Commercial Utilization:	Production of equipment used to optimize light-driven fermentation of algae
Payment Terms:	Due to the elimination of the grant of patent rights and broadening product definition and territory, the royalty rate is reduced from three (3) percent to one and a half (1.5) percent. Licensee will pay \$50,641.76 15 days after signing; that amount includes all back royalties and back patent costs.
Services Provided:	By MSU to Phenometrics, Inc.: None contemplated under agreement By Phenometrics, Inc. to MSU: None contemplated under agreement
Use of University Facilities/Personnel:	No use of MSU services/personnel by Phenometrics, Inc. under contemplated agreement
Organization Type:	Delaware corporation based in Lansing, Michigan and San Diego, California
Personnel Interest:	Dr. David M. Kramer, a Professor in the Department of Biochemistry and Molecular Biology, and members of his family own or have options to buy an ownership interest of more than 1 percent of the company.

LICENSE AGREEMENT TERM SHEET

Party:	Ubiquitous Energy, Inc.
License:	Exclusive license in the field of electronic and electrical devices
Term:	From the effective date of the agreement to the expiration of the last to expire of the patents
Technology:	<p>U.S. Patent Application serial no. 14/075,498; 14/220,850; International Patent PCT/US2015/021257; and U.S. Provisional Patent Application serial no. 62/153,299; and improvements</p> <p>The parties may add or remove technologies under the agreement, including improvements generated under a separate sponsored research agreement, provided that the change does not affect the financial consideration of the parties or the nature or extent of any pecuniary interest of MSU personnel.</p>
Technology's Potential Commercial Utilization:	Transparent photovoltaic devices
Payment Terms:	Annual payment of \$10,000, the first payment due within 30 days of effective date; royalty of 1-3 percent of net sales; 10-25 percent on all sublicensing revenues; patent cost reimbursements; 0.2-0.4 percent equity based on Ubiquitous Energy's fully diluted shares as of August 5, 2015
Services Provided:	<p>By MSU to Ubiquitous Energy, Inc.: None contemplated under agreement</p> <p>By Ubiquitous Energy, Inc. to MSU: None contemplated under agreement</p>
Use of University Facilities/Personnel:	No use of MSU services/personnel by Ubiquitous Energy, Inc. under contemplated agreement
Organization Type:	Delaware corporation with offices in California
Personnel Interest:	Dr. Richard Lunt, an Assistant Professor in the Department of Chemical Engineering and Materials Science, and members of his family own or have options to buy an ownership interest of more than 1 percent of the company. Dr. Lunt is also an officer of Ubiquitous Energy, Inc.