

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

IN RE: APPLICATION OF TRANS-ALLEGHENY	:	
INTERSTATE LINE COMPANY FOR	:	
(I) A CERTIFICATE OF PUBLIC CONVENIENCE	:	
TO OFFER, RENDER, FURNISH AND/OR	:	
SUPPLY TRANSMISSION SERVICE IN THE	:	
COMMONWEALTH OF PENNSYLVANIA;	:	
(II) AUTHORIZATION AND CERTIFICATION	:	
TO LOCATE, CONSTRUCT, OPERATE AND	:	Docket Nos. A-110172
MAINTAIN CERTAIN HIGH VOLTAGE ELECTRIC	:	A-110172F0002
TRANSMISSION LINES AND RELATED ELECTRIC	:	A-110172F0003
SUBSTATION FACILITIES; (III) AUTHORITY	:	A-110172F0004
TO EXERCISE THE POWER OF EMINENT	:	G-000721229
DOMAIN FOR THE CONSTRUCTION AND	:	
INSTALLATION OF AERIAL ELECTRIC	:	
TRANSMISSION FACILITIES ALONG THE	:	
PROPOSED TRANSMISSION LINE ROUTES	:	
IN PENNSYLVANIA; (IV) APPROVAL OF AN	:	
EXEMPTION FROM MUNICIPAL ZONING	:	
REGULATION WITH RESPECT TO THE	:	
CONSTRUCTION OF BUILDINGS; AND	:	
(V) APPROVAL OF CERTAIN RELATED	:	
AFFILIATED INTEREST ARRANGEMENTS	:	

**REBUTTAL TESTIMONY OF
WAYNE A. KNOBLAUCH, Ph.D.**

Re: Impacts of TrAIL on Farming and Agricultural Operations

December 10, 2007

REBUTTAL TESTIMONY OF WAYNE A. KNOBLAUCH, Ph.D.

1 Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

2 A. My name is Wayne A. Knoblauch. I am a Professor in the Department of
3 Applied Economics and Management (“AEM”) at Cornell University, with a
4 business address at Cornell University, 359 Warren Hall, Ithaca, New York
5 14853.

6

7 Q. HAVE YOU PREVIOUSLY SUBMITTED DIRECT TESTIMONY IN THIS
8 PROCEEDING ON BEHALF OF THE TRANS-ALLEGHENY
9 INTERSTATE LINE COMPANY (“TrAILCo”)?

10 A. No, I have not.

11

12 Q. PLEASE DESCRIBE YOUR CURRENT RESPONSIBILITIES AND
13 PROFESSIONAL EXPERIENCE.

14 A. I have been a full Professor in the College of Agriculture and Life Sciences at
15 Cornell University since 1989. I began my academic career there as an
16 Assistant Professor in 1976 and was promoted to an Associate Professor in
17 1982. My primary departmental program area is farm business management.
18 I teach courses in farm management, conduct research on farm management
19 topics and advise undergraduate and graduate students. I also currently serve
20 as Faculty Director of the NY FarmNet and NY FarmLink Programs, the NY
21 Dairy Farm Business Summary Program, and the Pro-Dairy Farm Business
22 Management Programs in the AEM Department.

1 Q. PLEASE SUMMARIZE YOUR EDUCATION AND YOUR ACADEMIC
2 AND RESEARCH EXPERIENCE.

3 A. I earned a Ph.D. in Agricultural Economics from Michigan State University in
4 1976. I also earned B.S with Honors and M.S. degrees in Agricultural
5 Economics from Michigan State University in 1971 and 1972, respectively.
6 TrAILCo Rebuttal Exhibit WAK-1 is my curriculum vitae, which provides the
7 details of my academic honors, research experience, and my research and
8 extension publications.

9
10 Q. ARE YOU A MEMBER OF ANY PROFESSIONAL ORGANIZATIONS?

11 A. Yes. I am a member of the American Agricultural Economics Association;
12 the American Dairy Science Association; and the Northeastern Agricultural
13 and Resource Economics Association.

14
15 Q. WILL THE USE OF VARIOUS TERMS IN YOUR REBUTTAL
16 TESTIMONY BE CONSISTENT WITH THE DEFINITIONS ASSIGNED
17 TO THOSE TERMS IN THE TABLE OF NOMENCLATURE ATTACHED
18 TO TRAILCO WITNESS FLITMAN'S DIRECT TESTIMONY AS
19 TRAILCO EXHIBIT DEF-1?

20 A. Yes. In addition, I may define other specific terms in my rebuttal testimony.

1 Q. PLEASE DESCRIBE THE TOPIC AND PURPOSE FOR YOUR
2 REBUTTAL TESTIMONY.

3 A. My rebuttal testimony will address and respond to the various comments and
4 concerns that were raised during the public input hearings in Pennsylvania
5 about the possibility that the proposed TrAIL project will negatively affect or
6 prohibit the current agricultural uses of farms over which the TrAIL right-of-
7 way may pass.

8
9 Q. BASED ON YOUR PROFESSIONAL OBSERVATION AND
10 EXPERIENCE, WILL THE PLACEMENT OF AN ELECTRIC
11 TRANSMISSION LINE ON A NEW RIGHT-OF-WAY OVER AN
12 OPERATING FARM, IN AND OF ITSELF, NEGATIVELY AFFECT THE
13 EXISTING AGRICULTURAL USES OF THAT PROPERTY OR RENDER
14 CONTINUED FARMING OPERATIONS INFEASIBLE OR IMPOSSIBLE?

15 A. No, it does not. I have been extensively involved in the agricultural industries
16 in many states throughout my academic and professional career, whether
17 performing academic research based on the hundreds of operating farms from
18 which I have gathered data, provided consultation services regarding
19 agricultural economics, management, and operations, or supervising the
20 research of my under- and post-graduate students and, based on those
21 experiences, I have never seen an operating farm unable to continue existing
22 agricultural uses on land within an electric transmission line right-of-way that
23 was used for such purposes before the transmission line was constructed.

1 While the farm operator may lose the benefit of the use of any acreage upon
2 which the footprint (or base) of a transmission tower structure is placed, the
3 cumulative area of those tower footprints on a single landowner's farm is
4 typically very small compared to the entire acreage, and the landowner's
5 existing agricultural operations, whether tilling crops or pasturing livestock,
6 can be continued unabated on the balance of their land over which a right-of-
7 way may pass.

8
9 Q. TO WHAT EXTENT DOES THE PREFERRED TRAIL ROUTE CROSS
10 OVER EXISTING AGRICULTURAL OPERATIONS IN WASHINGTON
11 AND GREENE COUNTIES IN PENNSYLVANIA?

12 A. Based upon my review of the Route Evaluation Report and Environmental
13 Report ("LRE") for both the Prexy Segment facilities and the 502 Junction
14 Segment facilities, TrAILCo Exhibit JH-1, it appears that the preferred route
15 passes over land currently used for agricultural purposes, but not to a large
16 degree as compared to the total line mileage of the Prexy Segment and the 502
17 Junction segment combined. Based on the LRE, approximately 9,650 lineal
18 feet of the preferred route from the 502 Junction Substation site to Prexy will
19 pass over cropland and 38,700 lineal feet of preferred route from the West
20 Virginia-Pennsylvania state line to Prexy will pass over pasture and hayland;
21 the two agricultural use categories identified in the LRE at page 72. These
22 distances equate to an area of approximately 44 acres of cropland and 178
23 acres of pasture/hayland from the West Virginia State line to the Prexy

1 substation. This translates to about a half acre of cropland and two acres of
2 pasture/hayland that would be lost to tower structure bases. Approximately
3 1,950 lineal feet of the Prexy-Manifold/Houston 138 kV Lines will pass over
4 cropland, or an area equivalent of 4 to 5 acres (page 119 of the LRE), of
5 which tower structure bases would take less than a tenth of an acre. The
6 Prexy-Manifold/Houston 138 kV Lines will also pass over 6,900 lineal feet of
7 pasture/hayland, or about 16 acres, with a loss of about a tenth of an acre to
8 the tower structure bases. The Prexy-Union Junction/Peters 138kv Line
9 crosses 2,250 lineal feet of cropland (page 150 of the LRE), which equates to
10 about 5 acres of area with a loss of less than a tenth of an acre of crop
11 production to tower structure bases. The Prexy-Union/Peters 138 kV Line
12 also passes over 7,450 feet of pasture/hayland, encompassing 17 total acres
13 with a loss of a tenth of an acre of hay production to tower structure bases.
14 Finally, the Prexy-Washington/Charleroi 138 kV Line passes over 3,600 lineal
15 feet of cropland, or about 8 acres (page 180 of the LRE), which translates to
16 less than a tenth of an acre lost to tower structure bases. The Prexy-
17 Washington/Charleroi 138 kV Line also crosses 6,700 lineal feet of
18 pasture/hayland, or an estimated 15 acres, with about a tenth of an acre lost to
19 tower structure bases.

20
21 Q. OF THE TWO AGRICULTURAL CATEGORIES DESCRIBED IN THE
22 LRE, IS THERE A MORE PREVALENT AGRICULTURAL ACTIVITY
23 ALONG THE TRAIL RIGHT-OF-WAY?

1 A. Yes. Based on my review of the LRE, current agricultural activity along the
2 preferred TrAIL right-of-way appears to be primarily livestock grazing on
3 pasture land and hay production.

4

5 Q. WILL FARM OWNERS BE ABLE TO CONTINUE THEIR CURRENT
6 AGRICULTURAL OPERATIONS AND USES ON THE PORTIONS OF
7 THEIR PROPERTIES THAT WOULD BE CROSSED BY THE
8 PREFERRED ROUTE?

9 A. Yes. Current farming operations, whether cultivation or pasturing, could be
10 continued without interruption. The most obvious impact to the typical farm
11 owner would be the relatively small area footprint (or base) of each
12 transmission tower structure that might be placed on the right-of-way. Per the
13 direct testimony of TrAILCo witness John Bodenschatz and the LRE, the
14 typical span length between tower structures is expected to be approximately
15 1,200 feet. Considering this information and the relatively small cumulative
16 area for all transmission tower bases along the entire preferred route that is
17 estimated in the LRE, it is unlikely that any single landowner would have a
18 significant number of towers placed on their property. The presence of a
19 tower structure will remove only the area occupied by the transmission tower
20 base from production, for both cultivation and grazing uses, and would result
21 in a minimal reduction in field efficiency of the operator's machinery. In light
22 of the small number of tower structures that will likely be placed directly on
23 current agricultural properties, the cumulative impact of the area under those

1 structures on right-of-way, currently under cultivation or being utilized for
2 livestock grazing, will be very small. Based on the LRE, the entire preferred
3 TrAIL route in Pennsylvania is estimated to cross over 61 acres of cropland
4 and 226 acres of pasture/hayland, with all tower structure bases occupying
5 less than one acre of cropland and about 2.3 acres of pasture/hayland.

6
7 Q. ASIDE FROM ANY TRANSMISSION TOWER STRUCTURE THAT
8 MIGHT BE PLACED ON THE RIGHT-OF-WAY, DOES THE
9 PLACEMENT OF NEW OVERHEAD LINES OVER EXISTING PASTURE
10 OR TILLED ACREAGE PROHIBIT, OR OTHERWISE IMPEDE THE
11 CONTINUED AGRICULTURAL USES OF THAT LAND?

12 A. No. The presence of new overhead lines over an existing farm operation
13 would not, in any way, prohibit or impede any continuing agricultural
14 operation. Livestock grazing can continue unabated, as well as any crop
15 tillage or haying activities.

16
17 Q. SOME WITNESSES AT THE PUBLIC INPUT HEARINGS DESCRIBED
18 CONCERNS WITH THE EFFECTS OF ELECTRIC AND MAGNETIC
19 FIELDS (“EMFs”) ON LIVESTOCK THAT WOULD BE UNDER OR IN
20 CLOSE PROXIMITY TO THE TRAIL RIGHT-OF-WAY. ARE YOU
21 AWARE OF ANY RECENT STUDIES WHICH EXAMINED THE
22 POSSIBLE EFFECTS OF EMFs ON FARM ANIMALS?

1 A. Yes, I am. However, there are no credible studies which have indicated a
2 danger or damage to farm animals. In a February 2005 study entitled
3 “Electromagnetic Fields and Public Health, Effects of EMF on the
4 Environment,” the World Health Organization (“WHO”), a respected
5 scientific body, reported that “[f]ield studies of 50-60 Hz exposure to plants
6 and crops have shown no effects at the levels normally found in the
7 environment, nor even at field levels directly under power lines up to 765
8 kV.” In that report, the WHO stated that “[i]n particular, there were no
9 adverse effects found on cattle grazing below power lines.”

10

11 TrAILCo witness Dr. William Bailey in TrAILCo Statement No. 8-R
12 addresses in more detail the negligible effects of EMFs on farm animals.

13

14 Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

15 A. Yes. However, I reserve the right to file such additional testimony as may
16 become necessary or appropriate.

WAYNE A. KNOBLAUCH, Ph.D.
CURRICULUM VITAE

NAME: WAYNE A. KNOBLAUCH, Ph.D.

TITLE: Professor, Department of Applied Economics & Management

CAMPUS ADDRESS: 359 Warren Hall, Cornell University, Ithaca, NY 14853

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BACKGROUND

EDUCATION:

<u>Year</u>	<u>Degree</u>	<u>Institution</u>
1976	Ph.D., Agricultural Economics	Michigan State University
1972	M.S., Agricultural Economics	Michigan State University
1971	B.S. with Honor, Agricultural Economics	Michigan State University

ACADEMIC RANKS AT CORNELL & YEAR ACHIEVED:

Professor: 1989

Associate Professor: 1982

Assistant Professor: 1976

PRIMARY DEPARTMENTAL PROGRAM AREA: Farm Business Management

**AREAS OF EXPERTISE: Accounting, Business Analysis, Economic Decision Making,
Business Organization, Strategic Planning & Economic Analysis**

PROFESSIONAL EXPERIENCE:

<u>Year</u>	<u>Experience</u>
June 1970 - September 1970	Michigan State University. Field Enumerator. Surveying dairy farmers under supervision of Professor C. Raymond Hoglund
September 1971 - December 1972	Michigan State University. Graduate Research Assistant. Agricultural Economics

January 1973 - December 1975	Michigan State University. Instructor and Academic Advisor, Institute of Agricultural Technology
January 1976 - June 1976	Michigan State University. Instructor, Agricultural Economics
1984, 1985, and 1986	Trustee - Village of Lansing
1987 – 1992	Member - Board of Zoning Appeals, Village of Lansing
1987-88, 1988-89	Faculty Advisor - Phi Kappa Psi
1990-91	Faculty Advisor - Alpha Zeta
2002-07	Faculty Advisor - Cornell Baseball Club

SABBATICALS AND STUDY LEAVES:

2006 – Cargill Financial Services; Minneapolis, Minnesota

1994 - Consumers Power Company; Jackson, Michigan

HONORS AND AWARDS:

Alpha Zeta, Agricultural Honorary, 1969.

Outstanding MS Thesis for 1972, Agricultural Economics, Michigan State University.

American Agricultural Economics Association, Outstanding Extension Program Team Award, "The Dairy Diversion Program", 1984.

American Agricultural Economics Association, Outstanding Extension Program Team Award, "The Dairy Buyout Program", 1987.

American Society of Agricultural Engineers, Blue Ribbon For Quality of Publication, "Farming Alternatives Guidebook", 1989.

Community and Rural Development Institute, Innovator Award, Farming Alternatives Program, 1993.

Community and Rural Development Institute, Innovator Award, New York City Watershed Project, 1997.

American Agricultural Economics Association, Outstanding Extension Program Team Award, "Managing Risk & Profits in Dairy", 2000.

Outstanding New Extension Publication Award, New York Association of County Agriculture Agents, "The Organic Decision: Transitioning to Organic Dairy Production", 2002.

Outstanding Extension Publication Award, New York Association of County Agriculture Agents, "Dairy Farm Business Summary", 2004.

Outstanding Accomplishments in Extension, College of Agriculture and Life Sciences, Cornell University, November, 2006.

ACADEMIC RESPONSIBILITIES

CURRENT ADMINISTRATIVE RESPONSIBILITIES:

Faculty Director, NY FarmNet and NY FarmLink Programs

Faculty Director, NY Dairy Farm Business Summary Program

Faculty Supervisor, Pro-Dairy Farm Business Management Programs in AEM

TEACHING AND ADVISING RESPONSIBILITIES

- **Active Grants/Contracts/Gifts**
Farm Management Study Trip, Principal - Knoblauch, Term 5/06 to 5/07
Warren Teaching Endowment, \$25,800, Percent Effort - 5%
Project Title - AEM 403 Farm Management Study Trip to Texas
- **Pending Grants/Contracts/Gifts**
Farm Management Study Trip, Principal - Knoblauch, Term 5/07 to 5/08
Warren Teaching Endowment, \$15,000, Percent Effort - 5%
Project Title - AEM 403 Farm Management Study Trip to Arizona
- **Administrative Leadership**
Dean's Committee to Design an Undergraduate Agricultural Science Curriculum
Farm Credit Fellows Committee
Department Undergraduate Program Committee
- **Courses Taught**
AEM 302, Farm Business Management
AEM 403, Farm Management Study Trip

EXTENSION RESPONSIBILITIES

- **Active Grants/Contracts/Gifts**

Project No. 8619, Principal Investigators – Staehr/Knoblauch, 4/1/06 to 3/31/07
Source: NYS Department of Agriculture & Markets, \$300,000, Percent Effort - 20%
Title of Project - NY FarmNet & NY FarmLink, Farm Family Assistance

Project No. 8623, Principal Investigators – Mastronardi/Knoblauch, 7/1/06 to 6/30/07
Source: NYS Department of Mental Health, \$200,000, Percent Effort - 5%

Title of Project - NY FarmNet Mental Health Project

Project No. ARP – 05 - 002, Principal Investigator – Knoblauch, 1/1/06 to 12/31/07
 Source: New York Farm Viability Institute, \$100,000 plus \$50,000 from Dean's Funds,
 Title of Project – Dairy Farm Business Summary Project – Improving the Profitability of
 New York Dairy Farms, Percent Effort -20%

Project No. 8112-950, Principal Investigators – Staehr/Knoblauch, 5/06 to 5/07
 Source: Warren Teaching Endowment, \$13,500
 Title of Project – Management Training for Educators and Consultants

Project No. 8611, Principal Investigators – Staehr/Knoblauch, 2/1/06 to 1/31/08
 Source: New York Farm Viability Institute, \$200,000
 Title of Project – Farm Business Planning

Project No. TBD, Principal Investigator – Knoblauch, 3/3/07 to 6/30/08
 Source: New York Farm Viability Institute, \$140,000
 Title of Project – Dairy Farm Business Summary Enhancements

PROFESSIONAL ACTIVITIES

PROFESSIONAL SOCIETIES:

American Agricultural Economics Association
 American Dairy Science Association
 Northeastern Agricultural and Resource Economics Association

CONFERENCES/WORKSHOPS/IN-SERVICE PARTICIPATION

Extension Programs:

NY FarmNet

Provide supervision and leadership to the program, interact with the FarmNet Board of Directors and serve as the liaison to the Department and Cornell Cooperative Extension. Guide the strategy formulation and forge productive linkages to other extension and research activities. FarmNet responds to financial and family requests for assistance by using an 800 number. Services range from assistance in strengthening the profitability of the farm business, improving family relationships to the extreme of suicide intervention. Duration, 2000 to 2007.

NYFarmLink

Provide supervision and leadership to the program, interact with the FarmNet Board of Directors and serve as the liaison to the Department and Cornell Cooperative extension. Guide the strategy formulation and forge productive linkages to other extension and research activities. The program improves the process and effectiveness of farm transfers by providing entering and

exiting farmers with essential networking, consulting and educational support. Duration, 2000 to 2007.

Dairy Farm Business Summary

Provide faculty leadership for the survey and computer analysis of production and financial records from New York dairy farms. Prepare extension and research publications, work with agents and farmers on data collection and conduct regional meetings on topics of current interest. Work with DFBS Board of Directors. Leadership from 1996 to 2007.

Currently enhancing a web-based data base and interface program to enter and analyze dairy farm production and financial data. Plans are being developed to expand the use of the new program beyond New York.

Pro-Dairy Project

Work jointly with a Sr. Extension Associates in the planning, development and implementation of extension programming in farm management and human resource management for the dairy industry. Activities range from program planning to joint authorship of articles and publications. Also working with an extension associate on the development of a web-based, monthly herd monitor. Duration, 1988 to 2007.

Developed a proposed staffing plan for dairy, field crops & business management programs under the Agricultural Initiative, May 2001.

Developed a program of work and position description for a redefined Senior Extension Associate position to work with me on Farm Business Management topics, 1997. Continue to work with and act as joint supervisor for Sr. Extension Associate.

Member of the "Managing With Finances" Committee which developed educational materials for dairy farming, 1989-90.

Member of the "Managing For Success" and "Forage Crop Production and Feeding" Committees, 1988.

CWT Program

Developed worksheets and a web program to assist farmers in determining if herd termination was of benefit to them. The worksheets assisted in the development of a specific bid to be submitted to CWT. Duration, 2003 and 2004.

French Creek Watershed

Developed questionnaire and analyzed results of a survey to evaluate the impacts of nutrient management planning on dairy farms in the French Creek Watershed, Chautauqua County, New York. Joint project with David Gross, Natural Resources. Funding provided by The Nature Conservancy. Duration, 2001 and 2002.

Developed questionnaire and analyzed results of a survey to evaluate farmers' opinions of stream bank protection programs in the French Creek Watershed, Chautauqua County, New

York. Joint project with David Gross, Natural Resources. Funding provided by The Nature Conservancy. Duration, 2002 and 2003.

Farm Unit Study

Coordinate with Thomas R. Maloney and Robert A. Milligan to develop an integrated, in-depth experience for farm management, dairy and field crops agents in farm problem identification, decision-making and farm family counseling, 1997, 1998, 1999, 2000, 2001 and 2003.

Top US Dairy Financial Performance

Worked jointly with Mark Stephenson to develop a survey instrument to collect financial data on "Top" US dairy farms. Presented results at Orlando, Florida conference, August 1997. Improved the survey form and expand questions asked for 1999 data. Presented results at a conference in Orlando, Florida, November 2000.

Web Site Development

Coordinate Agricultural Finance and Management Web Site development in relationship to total department, 1999-00.

New York City Watershed Project

Jointly developed, with faculty in other Cornell departments, the procedures to construct "whole farm plans" for farms in the New York City Watershed to improve water quality and maintain or enhance farm profitability.

Empire Managers Program, 1988 and 1989

Organized a three workshop series for managers of large farms and agriculturally related businesses on:

1. Information Systems and Economic Decision Making,
2. Strategic Planning in an Uncertain Environment, and
3. Management Organization and Personnel Management.

Program was attended by invitation only, with a wide variety of commodities represented. Program was conducted jointly with Gerald B. White. Reunion meetings for the group were held in 1989 and 1990.

Large Dairy Herd Management Conference

Co-chaired with Charles Sniffen, Department of Animal Science, a three-day conference on management tactics and strategies to improve the efficiency and profitability of large dairy farms. Also presented a workshop on setting goals for labor efficiency.

Farming Alternatives Project

Served as the Co-Director and then as Director of the Farming Alternatives Project. Was responsible for working with a staff of three on the identification, planning, development and

implementation of programs to help farmers assess the possibilities of starting or adding new enterprises to existing farm businesses.

Presentation at Northeast Farm Management Committee Meeting on "Results of Farming Entrepreneur Survey", Bangor, Maine, June 1988.

Presentation at the kick-off session of the Farm Family Opportunity Program on "Developing Farming Alternatives", Oneonta, New York, February 1988.

Jointly conducted with Farming Alternatives Project Directors and Staff a "Farming Alternatives Conference", March 1988. Presentation at the conference on a description of the Farming Alternatives Project and Moderated the Extension/Technical Assistance Workshop.

Development of a workbook to assist persons interested in farming alternatives to evaluate the enterprise before investing capital, in process.

Presentation at the Field Test In-service Program for Agents on using the draft workbook to evaluate profit potential and financial feasibility. Cornell University, January 1988.

Presentation at the Pennsylvania, Delaware, and New Jersey Conference on "Marketing Alternative Enterprises" for growers and a more detailed presentation and discussion with Cooperative Extension personnel following the conference. Reading, Pennsylvania, November 1987.

Presentation to W.I. Myers Advisory Committee on progress and plans for the future of the Farming Alternatives Project, October 1987.

Presentation on "Steps in the Management Process of Evaluating Farming Alternatives", Hudson Valley, February 28; Western New York, March 14; Central New York, March 28; and Northern New York, April 11, 1987.

Presentation to Agents and Specialists attending "1986 Production Agriculture Training School" on Objectives and Goals of the Farming Alternatives Project, November 1986.

Alternative Agricultural Opportunities Task Force

Co-chair with John Brake of a Task Force appointed by the Office of Research and Director of Extension to determine if a policy statement which specifies the appropriate focus and priorities in the area of alternative agricultural opportunities is needed by the College, 1988-89.

Farm Financial Crisis

Special Presentation to FarmNet Financial Counselors, "Constructing and Interpreting the Farm Balance Sheet", Department of Agricultural Economics, Cornell University, June and October 1986.

Presentation to Extension Agent In-depth Training Class on Working with Farm Families Under Stress, "Identifying and Prioritizing Extension Clientele for 1986/87", March 1986.

Presentation to FarmNet Counselors Training Session on "Analysis and Use of The Balance Sheet When Working With Farmers Under Financial Stress" and "Using The Dairy Farm Business Summary as a Diagnostic Tool", March 1986.

Presentation to Broome and Chenango County Young Farmers on "Farm Machinery Management", January 1986.

Dairy Herd Buyout

Jointly developed and appeared in a videotape describing "The Dairy Buyout" and how farmers should evaluate the programs impacts on their business. The videotape was distributed to 27 states as well as 33 copies being distributed within New York.

As part of a three location series for farm lenders, agribusiness, and Extension personnel, presented "Calculating Your Breakeven Bid" in Albany, New York, February 1986.

Presentation at organizational meeting of National Dairy Herd Buyout Extension Program Committee on "Worksheets for Dairy Farmers to Calculate Bread-even Bids", Ohio State University, Columbus, Ohio, November 1985.

Dairy Diversion Program

Jointly developed and appeared in a 60-minute television program entitled, "The New Dairy Bill: What Can Farmers Do?" The program was broadcast in New York and also by 43 television stations in 15 states from Maine to California and Georgia to Minnesota.

Presentation to Cortland County farmers and agribusiness personnel on the characteristics of The Dairy Stabilization Act and how farmers could analyze whether or not to participate in the diversion program, January 1984.

Presentation to Eastern Milk Producers Cooperative Board of Directors on how farmers could analyze whether or not to participate in the dairy diversion program, Owego, New York, January 1984.

Computer Use

Development and use of computerized decision aids that serve as education tools in working with farmers, extension agents and specialists, and industry leaders.

Remote Access Computers:

NEWPLAN Program 65 "Profitable Organization of Dairy Farm Enterprises". Selecting and combining enterprises given the dairy farmer's unique resources to maximize profit. Testing consequences of differing management strategies and production coefficients.

Jointly presented with Robert A. Milligan at ECOP Conference on Computer Use in Extension a session entitled "Use of Forward Planning Computer Models in Farm Management Extension", Pittsburgh, PA, March 1979.

Presented a paper entitled "User Evaluation of Remote Access Computing" at Outstate Forward Planning System Users Conference, University of Illinois, September 1978.

Jointly conducted with Robert A. Milligan and Marylouise van Lieshout three 3-session sequential schools for dairy farmers:

Oneida and Herkimer Counties; March 1980
Tompkins, Chemung, Tioga, and Schuyler Counties; January 1979
Erie and Wyoming Counties; February 1979

Jointly conducted with Robert A. Milligan, eight 3-day sequential schools for dairy farmers:

Cortland and Seneca Counties; January 1982
Jefferson and Lewis Counties; January 1981
Cattaraugus-Chautauqua Counties; November 1978
Genesee, Niagara, Orleans, Monroe Counties; February 1978
Cortland and Chenango Counties; February 1978
Wayne, Ontario, Seneca, Yates Counties; March 1978
Cayuga and Madison Counties; January 1978

Jointly conducted with Robert A. Milligan a two-day agent training session on use of the remote access computer and NEWPLAN program, September 1977.

Presentations to Ag Ec 302 and 402 farm management classes on the use of remote access computers in extension, April 1977 and April 1978.

Analyzed a dairy farm business using remote access computer programs for the Western Plains Dairy Team's Large Herd Dairy Tour, August 1977.

Jointly conducted with Robert A. Milligan two pilot sequential schools on use of the remote access computer and NEWPLAN program for Delaware, Otsego, and Chenango Counties in Oneonta in January 1976.

Presentation to Extension Lay Leaders Tour on Use of Computers in Farm Management and Finance, April 1978.

Presentation to College of Agriculture and Life Sciences Advisory committee on Use of Computers in Farm Management and Finance Extension Programs, May 1978.

Jointly conducted with Robert A. Milligan an Introduction to Enterprise Analysis for county agents during the Production Agriculture School in November 1976.

NEWPLAN Program 31 "Least-Cost Balanced Dairy Rations". Selecting and combining feeds into rations which meet all nutrient requirements of the animal for the least cost.

Jointly conducted with Robert A. Milligan, Charles Sniffen, and Larry Chase a two-day school on "Use of the New NEWPLAN Program 31 - Least-Cost Balanced Dairy Rations" for Cooperation Extension specialists and agents, October 1980.

Jointly conducted with Larry E. Chase a workshop for dairy farmers on "Economical Dairy Cattle Feeding in Limited Forage Situations", St. Lawrence County, February 1978.

Jointly conducted with Robert A. Milligan and Larry E. Chase a two day Agent Training Session on the use of the remote access computer and NEWPLAN program "Least-Cost Balanced Dairy Rations", December 1977.

NEWPLAN Program 18 "Profitable Combination of Cash Crop Enterprises". Selecting and combining cash crop enterprises given the machinery capacity, labor availability, and

acreage that will maximize profit for each individual farm. Economic returns from increased machinery capacity and changes in returns with product prices/input costs are analyzed.

Jointly conducted with Robert A. Milligan a three-day sequential school for farmers in Genesee, Monroe, Niagara, and Orleans Counties, January 1981.

Jointly conducted with Robert A. Milligan and Philip R. Sprague a three-day sequential school for farmers in Seneca, Wayne, Ontario, and Yates Counties, February 1979.

NEWPLAN Program 50 "Analysis of Major Capital Investments". Through estimation of cash inflows, capital outflows, and their terminal values an after tax assessment of the desirability of a major expansion and financial feasibility are determined.

Jointly conducted with Eddy LaDue and Stuart Smith a four-day sequential school for dairy farmers in Erie, Wyoming, Genesee, Niagara, Monroe, and Orleans Counties, March 1980.

Jointly conducted with Eddy LaDue, Robert Milligan, and Stuart Smith a training session during Agriculture Production School on "Analysis of Major Capital Investments for Dairy Herd Expansion and Use of NEWPLAN Program 50", November 1979.

Micro/Minicomputers:

Presentation at Production Agriculture School, "Analyzing Equipment Replacement Decisions Using a Microcomputer", November 1987.

Presentation at Vermont Computer Conference, "Is a Computer for Your Farm?" Barre, Vermont, November 1983.

Organized and moderated a "Contributed Software Symposia", Postconference meeting, American Agricultural Economics Association, August 1983.

Presentation to Graduate Bankers Seminar, "Futuristic View of Computer Use on Farms", August 1983.

Presentation to Extension Service County Coordinators, "Update on Kellogg Project and Challenges to Extension on Computer Use", June 1983.

Presentation to Eastern Milk Producers, Board of Directors, "Use of Computers on Farms, The Kellogg Project Experience", May 1983.

Presentation to College of Agriculture and Life Sciences Advisory Committee, "Computer Uses in Farm Management, Policy Issues for The Future", Geneva, November 1983.

Presentation to New York Farm Bureau, Young Farmers and Ranchers, "Future of Computer Use on Farms", Syracuse, February 1983.

Presentation at Farm Computing and Trade Show, "Goals of The Kellogg Project", Syracuse, January 1983.

Presentation to New York State Farm Bureau Board of Directors on "Computer Use in Agriculture", February 1981.

Presentation at College of Agriculture and Life Sciences, Symposium on "Computer Utilization - The Cornell Minicomputer Dairy Management Project", January 1981.

Jointly presented with Robert A. Milligan at Production Agriculture School "Small Computers - Potential and Pitfalls", November 1980.

Presentation at Dairymen's Seminar on "On-Farm Microcomputer Selection", Cornell Campus, November 1979.

Programmable Calculators:

Development and use of programs for use by farmers and extension personnel to assist in farm management decision making.

Two programs have been developed. Documentation is contained in:

Knoblauch, Wayne A. and Gary D. Rice, Economic Value of Cropland, Northeast Agricultural Engineering Service, No. 5.23, April 1979.

Knoblauch, Wayne A. and Gary D. Rice, Financial Feasibility of Cropland Purchase, Northeast Agricultural Engineering Service, No. 5.24, April 1979.

Agribusiness Seminars and Schools

Presented "Analyzing a Dairy Farm Business" to Farm Service Agency Loan Officers, Ithaca, New York, December, 2003

Moderator of Northeast Agribusiness Seminar, Cornell University, 1996, 1997, 1998, 1999 and 2001.

Presented "US Top Dairies Financial Performance" at the Agribusiness Economics Outlook, and Agribusiness Outlook Conference, December 1997.

"New York Dairy Situation" presented at the Annual and Mid-Year Agent Outlook, and Agribusiness Outlook Conferences, December 1978-93 and 1994-97.

Presentation at New York Tax Assessors School, "Sustainable Agriculture in the 1990's", July 1990.

Presentation at New York Tax Assessors School, "Farming Alternatives in New York", July 1989.

Presentation at Graduate Bankers Seminar, "The Farming Alternatives Project", August 1988.

Presentation at Graduate Bankers Seminar, "New York's Farm Financial Situation", August 1985.

Presentation at Graduate Bankers Seminar, "Dairy Farm Cash Flow Situation and Outlook", August 1984.

Presentation at Northeast Dairy Conference, "The Impact of the Dairy Production Stabilization Act of 1983 on New York Producers", Syracuse, NY, April 1984.

Presentation at Agribusiness Outlook Conference, "Steps for Evaluating the Paid Diversion Participation Decision", December 1983.

Presentation to FmHA personnel, "Farm Machinery Economics", June 1983.

Presentation at Key Bankers Meetings, "Managing a Dairy Farm in 1983", Syracuse and Batavia, October 1982.

Presentation to FmHA personnel on "Agricultural Information Sources", July 1982.

Taught a portion of Agribusiness Executives School, "Using Computers on Farms, What's Possible?" June 1982.

Taught a weeklong course in the Bankers School of Agriculture on "Farm Machinery Economics", August, 1980-1989.

Jointly coordinated with C. Arthur Bratton and Stuart F. Smith a two-day seminar for Agway Farm Consultants and Credit Managers, May 1978.

Taught a weeklong course in the Bankers School of Agriculture on "Capital Management Decisions in the Farm Business", August 1977, 1978, and 1979.

Presented a discussion of "Enterprise Analysis" to Graduate Bankers Seminar, August 1977.

Dairy Days Programs:

Presentation to Western New York Dairy Farmers on changes in 1996 with an eye to managing in 1997. Also, economics of leasing versus purchasing machinery. Wyoming County, February 1997.

Presentation on Economics of Dairy in the Future, Delaware County, April 1997.

Presentation at Western New York Dairy Congress, "Cost of Producing Milk in New York and Ontario, What's the Difference?" Batavia and Waterloo, February 1993.

Presentation at Agriculture Education Days, "Should I Repair or Replace Machinery?" Ulysses, PA and Rushford, NY, January 1993.

Presentation at Capital District Day Futurama, "What's Required to be Competitive in Dairying", Greenwich, New York, February 1991.

Presentation at Oneida/Herkimer County Agricultural Science Day, "Purchasing vs. Growing Forage", Herkimer, 1990.

Presentation at Sullivan County Dairy Days, "Managing Dairy Farms During Periods of Economic Stress", Youngsville, March 1983.

Presentation to clientele of Citizens Central Bank, "Managing Farms During Periods of Economic Stress", Wyoming County, March 1983.

Presentation on "Buying Decisions in 1981 and Beyond" at Money Management Seminar, Batavia, March 1981.

Presentation at New York-Pennsylvania Dairymen's Seminar on "Remote Access Computer Programs to Assist in Farm Business Management Decisions", February 1981.

Presentation at Madison County Dairy Days Program on "Economical Utilization of Forages for Milk Production", January 1981.

Presentation at Cattaraugus County Dairy Days Program on "Managing Your Dairy Farm in 1980 - Prospects for Profit", March 1980.

Presentation at Chautauqua County Dairy Days Program on "Managing Your Dairy Farm in 1980 - Prospects for Profit", March 1980.

Presentation at Sullivan County Dairy Days Program on "Managing Your Dairy Farms in The 80's", April 1979.

Presentation at Lewis County Dairy Days Program on "Debt Capacity Per Cow", March 1978.

Presentation at Cattaraugus County Dairy Days Program on "Debt Capacity Per Cow", March 1978.

Presentation at Chautauqua County Dairy Days Program on "Debt Capacity Per Cow", March 1978.

Presentation at Allegany County Dairy Days Program on "Forage Crops Cost of Production and Systems", February 1978.

Presentation at Western Plains and Erie-Wyoming Dairy Teams Futurama on "Debt Capacity per Cow", January 1978.

Presentation at Delaware County Dairy Days Program on "Economics of Forage Systems", January 1978.

Presentation at Cornell Dairy Days Program on "Debt Capacity Per Cow", January 1978.

Presentation at Schoharie, Fulton, and Montgomery Counties Dairy Days Program on "The Economics of Hay and Hay Crop Silage", February 1977.

CONSULTING

Consulting services have been provided on economic aspects in four major areas: new product development, product liability, personal injury, and impact assessment.

New Product Development

Research as to the feasibility of starting a dairy operation was done for Anheuser-Busch, Inc., St. Louis, Missouri. Research into an economic and nutritional evaluation of three whey products as feed for dairy cattle was done for Abcor, Inc., Wilmington, Massachusetts.

Economic and nutritional evaluation of the value of the by-products of snack food processing for dairy cattle was done for Frito-Lay, Inc., Dallas, Texas.

Product Liability

Analysis of economic loss, and where required disposition and trial testimony, has been provided to the following: Alfa-Laval, Inc., Kansas City, Missouri; Michigan Power Company, Kalamazoo, Michigan; Consumers Power Company, Jackson, Michigan; Columbus and Southern Ohio Electric Company, Columbus, Ohio; Wheeling Electric Company, Wheeling, West Virginia; Castle and Cooke, Inc., San Francisco, California; Calvin Brown, Seneca County, New York; Van Kempen Electric Company, Grand Rapids, Michigan; Oceana Electric Company, Hart, Michigan; Michigan Farm Bureau, Lansing, Michigan; Powell Farms, Fremont, Michigan; Germania Dairy Automation, Madison, Wisconsin; Potomac Edison, Baltimore, Maryland; Comanche Electric Co-op, Comanche, Texas; Rappahannock Electric Cooperative, Culpeper, Virginia; Abel Farms, Pennsylvania; Babson Brothers, Illinois; Peb-L-Brook Farms, Michigan; Indiana REMC; Erath County Electric Cooperative Association, Stephenville, Texas; Heater Farms, Millerton, Pennsylvania and Painter Farms, Westfield, Pennsylvania; Conrad Farms, Millerstown, Pennsylvania; Lake and Piepkow Farms, Michigan; Southwestern Public Service Company, New Mexico; O & A Electric Cooperative, Michigan; Tri-County Electric Cooperative, Michigan; Bangor Hydro Electric, Bangor, Maine; American Electric Power Company, Columbus, Ohio; Green Mountain Power, Burlington, Vermont; Central Maine Power, Augusta, Maine; New Hampshire Public Utility Company; Cable Service Company, Pennsylvania; Mullen Farms, New York; The Irrigation Company, Idaho; Allegany Power Company, West Virginia; American Electric Power Company, Virginia; Ohio Power Company, Ohio; Tincknell Farm, Pennsylvania; Staley Manufacturing Company, Michigan; West Farm, New York; Carney Farm, New York; Maine Potato Growers, Maine; Vermont Farm Bureau; Giezen Electric, Idaho; Den-Tex Dairy, Texas, Miller Dairy, Texas; Idaho Power Company, Idaho; Geitzen Electric Company, Idaho; Novartis Corporation, North Carolina; Wisconsin Public Service Corp, Wisconsin; Anheuser-Busch, Columbus, Ohio; J-Star Manufacturing, Minnesota; King and Polhamus Farms, New York; Idaho Dairy Supply Company, Idaho; United Vaccines, Minnesota and Wisconsin; Cabot Corporation, Pennsylvania; Spring Flower Dairy, Ohio; Peterson Construction, Idaho; Professional Engineering Consultants, Kansas; Johnson Air Services, Delaware; ABB, Inc, Delaware; Bentley Farm, New York; Cargill Financial Services, Minnesota; Brofee Dairy, Pennsylvania, Pennsylvania Electric Cooperative, Pennsylvania; Crone Farms, Ohio; Cutter Dairy, Ohio; Excel Energy, Wisconsin; Gulf South Pipeline Company, Louisiana; Fulwood and Bland, United Kingdom & California, Espisoto, Pennsylvania.

Personal Injury

Analysis of economic loss and where required deposition and trial testimony has been provided the following: City of Kalamazoo, Michigan; Burnley Corporation, Saginaw, Michigan; David Sharick, Wyoming County, New York; Bill Smith, Trumansburg, New York; Lucy Snell, Akron, New York; William Conrad, Ithaca, New York; Vliestra Farm, Wisconsin.

Impact Assessment

New York City Water Board; Assessment of the economic impact of proposed regulations on agriculture in the Delaware/Catskill and Croton Watersheds, conducted with Parsons, Brinckerhoff, Quade and Douglas, New York City; Batavia Turf Farms, New York; Heering Creek Farms, Massachusetts.

RESEARCH AND EXTENSION PUBLICATIONS – 2000 to 2007

Knoblauch, Wayne, George Conneman and Linda Putnam, Chapter 7, "Dairy Farm Management" in New York Economic Handbook 2007, E.B. 2006-20, Department of Applied Economics and Management, Cornell University, December 2006.

Knoblauch, Wayne A., Linda D. Putnam and Jason Karszes, Dairy Farm Business Summary, New York State, 2005, R.B. 2006-06, Department of Applied Economics and Management, Cornell University, October 2006.

Knoblauch, Wayne A. and Linda D. Putnam, Dairy Farm Business Summary, New York Dairy Renters, 2005, E.B. 2006-18, Department of Applied Economics and Management, Cornell University, October 2006.

Knoblauch, Wayne A., Charles Z. Radick, George Allhusen, Jason Karszes and Linda D. Putnam, Dairy Farm Business Summary, Central Valleys Region, 2005, E.B. 2006-13, Department of Applied Economics and Management, Cornell University, September 2006.

Knoblauch, Wayne A., Linda D. Putnam, Jason Karszes, Peggy Murray, Frans Vokey, Molly Ames, William Van Loo, Anita Deming, Carl Tillinghast, Julie Viveiros, Dairy Farm Business Summary, Northern New York, 2005, E.B. 2006-12, Department of Applied Economics and Management, Cornell University, August 2006.

Knoblauch, Wayne A., Linda D. Putnam, Mariane Kiraly, Jason Karszes, Dairy Farm Business Summary, New York Small Herd Farms, 80 Cows or Fewer, 2005, E.B. 2006-09, Department of Applied Economics and Management, Cornell University, August 2006.

Knoblauch, Wayne A., Linda D. Putnam, Jason Karszes, James W. Grace, David L. Munsee, Jacob Schuelke, Joan S. Petzen, Dairy Farm Business Summary, Western and Central Plateau Region, 2005, E.B. 2006-06, Department of Applied Economics and Management, Cornell University, July 2006.

Knoblauch, Wayne A., Linda D. Putnam, Mariane Kiraly, Joseph J. Walsh, Stephen E. Hadcock, Larry R. Hulle, Dairy Farm Business Summary, Southeastern New York, 2005, E.B. 2006-08, Department of Applied Economics and Management, Cornell University, July 2006.

Knoblauch, Wayne A., Linda D. Putnam, Jason Karszes, John Hanchar, Griffen Moag, Josh Sauter, Dairy Farm Business Summary, Western and Central Plain Region, 2005, E.B. 2006-05, Department of Applied Economics and Management, Cornell University, May 2006.

Karszes, Jason, Wayne A. Knoblauch and Linda D. Putnam, Dairy Farm Business Summary, New York Large Herd Farms, 300 Cows or Larger, 2005, E.B. 2006-03, Department of Applied Economics and Management, Cornell University, May 2006.

Knoblauch, Wayne A. and Linda D. Putnam, Dairy Farm Business Summary, New York Dairy Renters, 2004, E.B. 2005-16, Department of Applied Economics and Management, Cornell University, December 2005.

Knoblauch, Wayne, George Conneman and Linda Putnam, Chapter 7, "Dairy Farm Management" in New York Economic Handbook 2006, E.B. 2005-14, Department of Applied Economics and Management, Cornell University, December 2005.

Knoblauch, Wayne A., Linda D. Putnam, Mariane Kiraly, Jason Karszes, Dairy Farm Business Summary, New York Small Herd Farms, 80 Cows or Fewer, 2004, E.B. 2005-15, Department of Applied Economics and Management, Cornell University, November 2005.

Knoblauch, Wayne A., Linda D. Putnam and Jason Karszes, Dairy Farm Business Summary, New York State, 2004, R.B. 2005-03, Department of Applied Economics and Management, Cornell University, November 2005.

Knoblauch, Wayne A., Jason Karszes, Charles Z. Radick, Dan Welch and Linda D. Putnam , Dairy Farm Business Summary, Central Valleys Region, 2004, E.B. 2005-13, Department of Applied Economics and Management, Cornell University, October 2005.

Knoblauch, Wayne A., Linda D. Putnam, Jason Karszes, James W. Grace, David L. Munsee, Jacob Schuelke, Joan S. Petzen, Dairy Farm Business Summary, Western and Central Plateau Region, 2004, E.B. 2005-09, Department of Applied Economics and Management, Cornell University, September 2005.

Knoblauch, Wayne A., Linda D. Putnam, Mariane Kiraly, Joseph J. Walsh, Stephen E. Hadcock, Larry R. Hulle, Dairy Farm Business Summary, Southeastern New York, 2004, E.B. 2005-10, Department of Applied Economics and Management, Cornell University, September 2005.

Knoblauch, Wayne A., Linda D. Putnam, Jason Karszes, Peggy Murray, Frans Vokey, Molly Ames, William Van Loo, Dairy Farm Business Summary, Northern New York, 2004, E.B. 2005-07, Department of Applied Economics and Management, Cornell University, August 2005.

Karszes, Jason, Wayne A. Knoblauch and Linda D. Putnam, Dairy Farm Business Summary, New York Large Herd Farms, 300 Cows or Larger, 2004, E.B. 2005-05, Department of Applied Economics and Management, Cornell University, June 2005.

Knoblauch, Wayne A., Linda D. Putnam, Jason Karszes, John Hanchar, Jason Murphy, Dairy Farm Business Summary, Western and Central Plain, 2004, E.B. 2005-03, Department of Applied Economics and Management, Cornell University, May 2005.

Knoblauch, Wayne A., Linda D. Putnam and Jason Karszes, Dairy Farm Business Summary, New York State, 2003, R.B. 2004-13, Department of Applied Economics and Management, Cornell University, January 2005.

Knoblauch, Wayne A., Linda D. Putnam, Mariane Kiraly, Jason Karszes, Dairy Farm Business Summary, New York Small Herd Farms, 80 Cows or Fewer, 2003, E.B. 2004-21, Department of Applied Economics and Management, Cornell University, December 2004.

Knoblauch, Wayne A. and Linda D. Putnam, Chapter 7, "Dairy Farm Management" in New York Economic Handbook 2005, E.B. 2004-20, Department of Applied Economics and Management, Cornell University, December 2004.

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Knoblauch, Wayne A., Linda D. Putnam, Jason Karszes, George Allhusen, James W. Grace, Joan S. Petzen, Andrew N. Dufresne, Dairy Farm Business Summary, Western and Central Plateau Region, 2003, E.B. 2004-18, Department of Applied Economics and Management, Cornell University, November 2004.

Knoblauch, Wayne A., Linda D. Putnam, Mariane Kiraly, Joseph J. Walsh, Stephen E. Hadcock, Larry R. Hulle, Dairy Farm Business Summary, Southeastern New York, 2003, E.B. 2004-16, Department of Applied Economics and Management, Cornell University, October 2004.

Knoblauch, Wayne A., Linda D. Putnam, Jason Karszes, John Hanchar, Jason Murphy, Judith Barry, Dairy Farm Business Summary, Western and Central Plain, 2003, E.B. 2004-011, Department of Applied Economics and Management, Cornell University, August 2004.

Karszes, Jason, Wayne A. Knoblauch and Linda D. Putnam, Dairy Farm Business Summary, New York Large Herd Farms, 300 Cows or Larger, 2003, E.B. 2004-09, Department of Applied Economics and Management, Cornell University, July 2004.

Knoblauch, Wayne A. and Linda D. Putnam, Chapter 7, "Dairy Farm Management" in New York Economic Handbook 2004, E.B. 2003-22, Department of Applied Economics and Management, Cornell University, December 2003.

Knoblauch, Wayne A., Linda D. Putnam and Jason Karszes, Dairy Farm Business Summary, New York State, 2002, R.B. 2003-03, Department of Applied Economics and Management, Cornell University, November 2003.

Knoblauch, Wayne A. and Linda D. Putnam, Dairy Farm Business Summary, New York Dairy Farm Renters, 2002, E.B. 2003-21, Department of Applied Economics and Management, Cornell University, November 2003.

Knoblauch, Wayne A., Linda D. Putnam, Jason Karszes, George Allhusen, James W. Grace, Joan S. Petzen, Andrew N. Dufresne, Dairy Farm Business Summary, Western and Central Plateau Region, 2002, E.B. 2003-20, Department of Applied Economics and Management, Cornell University, November 2003.

Knoblauch, Wayne A., Linda D. Putnam, Mariane Kiraly, Jason Karszes, Dairy Farm Business Summary, New York Small Herd Farms, 80 Cows or Fewer, 2002, E.B. 2003-18, Department of Applied Economics and Management, Cornell University, October 2003.

Knoblauch, Wayne A., Linda D. Putnam, William Van Loo, Peggy Murray, Frans Vokey, Anita Demming, Chris Nobles, Molly Ames, Jason Karszes, Dairy Farm Business Summary, Northern New York, 2002, E.B. 2003-14, Department of Applied Economics and Management, Cornell University, September 2003.

Knoblauch, Wayne A., Linda D. Putnam, Stephen E. Hadcock, Larry R. Hulle, Mariane Kiraly, Joseph J. Walsh, Dairy Farm Business Summary, Southeastern New York, 2002, E.B. 2003-11, Department of Applied Economics and Management, Cornell University, August 2003.

Karszes, Jason, Wayne A. Knoblauch and Linda Putnam, Dairy Farm Business Summary, New York Large Herd Farms, 300 Cows or Larger, 2002, E.B. 2003-08, Department of Applied Economics and Management, Cornell University, July 2003.

Knoblauch, Wayne A., Linda D. Putnam, Jason Karszes, John Hanchar, Jason Murphy, Judith Barry, Steve Richards and George Allhusen, Dairy Farm Business Summary, Western and Central Plain, 2002, E.B. 2003-04, Department of Applied Economics and Management, Cornell University, June 2003.

Knoblauch, Wayne, Jason Karszes, Brad Hilty, "Dairy Expansion: Financial Planning for Success", NRAES-166, ISBN 0-935817-90-5, February 2003.

Knoblauch, Wayne A. and Linda D. Putnam, Chapter 8, "Dairy Farm Management" in New York Economic Handbook 2003, E.B. 2002-21, Department of Applied Economics and Management, Cornell University, December 2002.

Knoblauch, Wayne A., Linda D. Putnam and Jason Karszes, Dairy Farm Business Summary, New York State, 2001, R.B. 2002-11, Department of Applied Economics and Management, Cornell University, November 2002.

Knoblauch, Wayne A., Linda D. Putnam, Mariane Kiraly and Jason Karszes, Dairy Farm Business Summary New York Small Herd Farms, 70 Cows or Fewer, 2001, E.B. 2002-18, Department of Applied Economics and Management, Cornell University, October 2002.

Knoblauch, Wayne A. and Linda D. Putnam, Dairy Farm Business Summary Eastern New York Renter Summary, 2001, E.B. 2002-19, Department of Applied Economics and Management, Cornell University, October 2002.

Knoblauch, Wayne A., Linda D. Putnam, William Van Loo, Peggy Murray, Frans Vokey, Anita Demming, Chris Nobles, Molly Ames and Jason Karszes, Dairy Farm Business Summary Northern New York, 2001, E.B. 2002-13, Department of Applied Economics and Management, Cornell University, September 2002.

Knoblauch, Wayne A., Linda D. Putnam, Jason Karszes, George Allhusen, James W. Grace, Joan S. Petzen, Andrew N. Dufresne and Janet Allard, E.B. 2002-14, Dairy Farm Business Summary Western and Central Plateau, 2001, Department of Applied Economics and Management, Cornell University, September 2002.

Knoblauch, Wayne A., Linda D. Putnam, Jason Karszes, Steven Richards, John Hanchar, Judith Barry, Kathleen English, Tim Terry and George Allhusen, E.B. 2002-09, Dairy Farm Business Summary Western and Central Plain, 2001, Department of Applied Economics and Management, Cornell University, July 2002.

Karszes, Jason, Wayne A. Knoblauch and Linda D. Putnam, Dairy Farm Business Summary New York Large Herd Farms, 300 Cows or Larger, 2001, E.B. 2002-08, Department of Applied Economics and Management, Cornell University, June 2002.

Richards, Steve, Steve Bulkley, Craig Alexander, Janice Degni, Wayne Knoblauch and Dan Demaine, E.B. 2002-02, The Organic Decision: Transitioning to Organic Dairy Production, Department of Applied Economics and Management, Cornell University, January 2002.

Knoblauch, Wayne A. and Linda D. Putnam, Chapter 8, "Dairy Farm Management" in New York Economic Handbook 2002, E.B. 2001-16, Department of Applied Economics and Management, Cornell University, December 2001.

Knoblauch, Wayne A., Linda D. Putnam and Jason Karszes, Dairy Farm Business Summary, New York State 2000, R.B. 2001-06, Department of Applied Economics and Management, Cornell University, October 2001.

Knoblauch, Wayne A., Linda D. Putnam, Mariane Kiraly and Jason Karszes, Dairy Farm Business Summary New York Small Herd Farms, 70 Cows or Fewer, 2000, E.B. 2001-10, Department of Applied Economics and Management, Cornell University, August 2001.

Knoblauch, Wayne A., Linda D. Putnam, Stephen E. Hadcock, Larry R. Hulle, Mariane Kiraly and Joseph J. Walsh, E.B. 2001-09, Dairy Farm Business Summary Southeastern New York, 2000, Department of Applied Economics and Management, Cornell University, July 2001.

Knoblauch, Wayne A., Linda D. Putnam, William Van Loo, Peggy Murray, Anita Demming, Chris Nobles, Molly Ames and Jason Karszes, Dairy Farm Business Summary Northern New York, 2000, E.B. 2001-08, Department of Applied Economics and Management, Cornell University, July 2001.

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Karszes, Jason, Wayne A. Knoblauch and Linda D. Putnam, E.B. 2001-06, New York Large Farms, 300 Cows or Larger, 2000, Department of Applied Economics and Management, Cornell University, May 2001.

Knoblauch, Wayne A., Linda D. Putnam, Jason Karszes, Steven T. Richards, John Hanchar, Carry Oostveen, Bruce Dehm, Kathy English, Stacia True, John Gremer and George Allhusen, E.B. 2001-05, Dairy Farm Business Summary Western and Central Plain, 2000, Department of Applied Economics and Management, Cornell University, May 2001.

Karszes, Jason, Wayne A. Knoblauch and Linda D. Putnam, Dairy Farm Business Summary New York Large Herd Farms, 300 Cows or Larger, 2000, E.B. 2001-06, Department of Applied Economics and Management, Cornell University, May 2001.

Knoblauch, Wayne A., Linda D. Putnam, Jason Karszes, et. al., Dairy Farm Business Summary Western and Central Plain Region, 2000, E.B. 2001-05, Department of Applied Economics and Management, Cornell University, May 2001.

Knoblauch, Wayne A. and Linda D. Putnam, Chapter 8, "Dairy Farm Management" in New York Economic Handbook 2001, E.B. 2000-17, Department of Applied Economics and Management, Cornell University, December 2000.

Mullen, Kathleen, Wayne Knoblauch and David Gross, Final Report, An Assessment of Stream Bank Protection Practices and Attitudes: French Creek Watershed, Chautauqua County, New York, October 4, 2000.

Knoblauch, Wayne A., Linda D. Putnam, and Jason Karszes, Dairy Farm Management Business Summary New York State, 1999, R.B. 2000-03, Department of Agricultural, Resource, and Managerial Economics, Cornell University, October 2000.

Knoblauch, Wayne A. and Linda D. Putnam, Dairy Farm Business Summary Eastern New York Renter Summary, 1999, E.B. 2000-13, Department of Agricultural, Resource, and Managerial Economics, Cornell University, October 2000.

Knoblauch, Wayne A., Linda D. Putnam, Jason Karszes, et. al., Dairy Farm Business Summary New York Small Herd Farms, 65 Cows or Fewer, 1999, E.B. 2000-12, Department of Agricultural, Resource, and Managerial Economics, Cornell University, October 2000.

Knoblauch, Wayne A., Linda D. Putnam, et. al., Dairy Farm Business Summary Northern New York Region, 1999, E.B. 2000-08, Department of Agricultural, Resource, and Managerial Economics, Cornell University, July 2000.

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Karszes, Jason, Wayne A. Knoblauch, and Linda D. Putnam, Dairy Farm Business Summary New York Large Herd Farms, 300 Cows or Larger, 1999, E.B. 2000-04, Department of Agricultural, Resource, and Managerial Economics, Cornell University, July 2000.

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Putnam, Linda D. and Wayne A. Knoblauch, DFBS: A Guide to Processing Dairy Farm Business Summaries in County and Regional Extension Offices for DFBS Version 4.3, E.B. 2000-02, Department of Agricultural, Resource, and Managerial Economics, Cornell University, February 2000.

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Cox, William J., John J. Hanchar, Wayne A. Knoblauch and Jerome Cherney, "Growth, Yield, Quality and Economics of Corn Silage Under Different Row Spacings" Accepted for publication by Agronomy Journal.

Cox, William J., Wayne A. Knoblauch, Harold M. van Es, Tawainga W. Katsvairo, Michael A. Glos, "Economics of Purchasing a Yield Monitor for Split-Planter Corn Hybrid Testing", Agronomy Journal, 2004, pages 96:1469-1474.

Karszes, Jason and Wayne Knoblauch, "Managing Cash Flow, Meeting Cash Commitments During Low Price Cycles" Extension Power Point Presentation, January 2004.

Hanchar, John, J., Wayne A. Knoblauch and Robert A. Milligan, "Constraining Phosphorus In Surface Waters of the New York City Watershed: Dairy Farm Resource Use and Profitability", Agricultural, Resource and Economics Review, October 2003, pages 171-183.

Frank, Gary and Wayne Knoblauch, "Managing Financial Risk: Tools for Identifying, Prioritizing, and Reducing Risk" National Program for Integrated Dairy Risk Management Education and Research, 2003.

Knoblauch, Wayne A., and Mark Stephenson, Calculating Your CWT Program Bid, A Web Based Program. The program is available at <http://dairy.cornell.edu/cwt/>.

Knoblauch, Wayne A. and Jason Karszes, "Is The Business Positioned for Expansion", Invited Paper, Building Freestall Barns and Milking Centers Conference, Harrisburg, Pennsylvania, February 2003.

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Knoblauch, Wayne A., Linda D. Putnam and Jason Karszes, "Cornell Farm Account Book", Cornell University Media Services, 121CUFAB, February 2003.

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Knoblauch, Wayne A. and Jason Karszes, "Fight New Paint Disease with Careful Analysis", Northeast Dairy Business Magazine, p 19, 20 & 22, October 2002.

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