

History of Agricultural Engineering at Penn State 1976 – 2012

Department renamed
Agricultural and Biological Engineering
September 1990



**The Pennsylvania State University
College of Agricultural Sciences
College of Engineering
University Park, Pennsylvania**

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History of Agricultural Engineering at Penn State

Volume 2

1976 – 2012

Contents

Significant Events	1
Redirecting the Department Focus	3
Emergence of Biological Engineering	3
College Reorganization	4
Agricultural Mechanization	4
Communication and Leadership	5
TAE Program	6
Alpha Epsilon	6
Appendix 1 Department Faculty	8
Appendix 2 Technical Staff	12
Appendix 3 Engineering Graduates	13
Appendix 4 Mechanization Graduates	25
Appendix 5 Farm Equipment Service & Sales	30
Appendix 6 IPAC Members	31
Appendix 7 Outstanding Alums	34
Appendix 8 Outstanding Recent Alums	36
Appendix 9 Alpha Epsilon Members	37
Appendix 10 TAE Graduates	43

Department History

Significant Events

- June 1, 1976 H. V. Walton became Head of the Department of Agricultural Engineering.
- February 2, 1983 Master of Agriculture degree program in Agricultural Mechanization approved.
- July 31, 1985 H. V. Walton retired as Head of the Department of Agricultural Engineering. H. B. Manbeck appointed Acting Head.
- August 1, 1985 Dennis E. Buffington appointed Head of the Department of Agricultural Engineering.
- 1985 College of Engineering initiated a Co-op Program giving students the option of working in industry for three non-consecutive semesters.
- August 25, 1986 Minor in Agricultural Engineering approved.
- March 13, 1987 Minor in Agricultural Mechanization Technology approved.
- July 1, 1988 Brent Fritz Memorial Laboratory dedicated.
- June 17, 1989 Harvey Corson Electronics Instrumentation Laboratory dedicated.
- Summer 1990 Agricultural Engineering Program included a General Option and a Food Engineering Option.
- November, 1990 Department name changed to Agricultural and Biological Engineering.
- November, 1990 Agricultural Mechanization program (AG M) changed name to Agricultural Systems Management and Technology (ASMT).
- March 18, 1994 Agricultural Systems Management and Technology program (ASMT) changed name to Agricultural Systems Management (ASM).
- March 18, 1994 Agricultural Engineering Graduate program (Ag E) changed name to Agricultural and Biological Engineering (ABE).
- March 15, 1996 Agricultural Engineering program (Ag E) name changed to

Agricultural and Biological Engineering (ABE).

- March 15, 1996 Agricultural Engineering Minor name changed to Agricultural and Biological Engineering.
- July 1, 1998 R. E. Young appointed Head of the Department of Agricultural and Biological Engineering.
- August, 2001 Initiated two new, 2-credit courses; one focused on Leadership and the second focused on Communication, that replaced the senior seminar (ABE 490) and Technical Writing (ENGL 202) in Spring 2003.
- Spring, 2002 Initiated the Off-Road Equipment minor.
- January 2005 Agricultural and Biological Engineering program renamed its two options to be Agricultural Engineering and Biological and Food Engineering.
- January 18, 2008 Agricultural and Biological Engineering program was renamed Biological Engineering.
- July 1, 2010 P. H. Heinemann appointed head of the Department of Agricultural and Biological Engineering.
- August, 2010 Natural Resource Engineering Option added to the Biological Engineering major; Biological and Food Engineering option renamed Food and Biological Process Engineering.
- July 1, 2012 Wood Products Faculty from the former School of Forestry were welcomed into the Department.

Redirecting the Department Focus

The beginnings of Agricultural Engineering as a profession and the beginning of what became the Department of Agricultural Engineering are outlined in Volume I of this history.

From the 1970s until 1990 few changes occurred in the academic Agricultural Engineering Program. There were courses that focused on machinery, structures, soil and water, processing, and food. Students, by selecting electives developed strength in one or more of these areas. In 1990 the engineering academic program was divided into two Options; the General (or Agricultural Engineering) Option and the Food Engineering Option. Students entering the major were required to select one of these two options and the course work required for each option differed so that students in each of the two options developed strengths appropriate to the selected option.

Emergence of Biological Engineering

Students in the Agricultural Engineering program always understood that Agricultural Engineers appreciated the biological concepts related to the engineering principles being taught. In a few cases, namely North Carolina State University in 1965, Mississippi State University in 1967, and University of Guelph in 1969, the program and/or department name was changed to include some version of the word “biology”. All other agricultural engineering programs and departments considered biology to be an unnamed, implicit (but important) part of the curriculum.

In the early 1990s, under the National leadership of pioneers such as ASAE President Carl Hall, ASEE members Denny Davis and Art Johnson, and University of California faculty member Roger Garrett, a US Department of Agriculture project developed a series of workshops with the focus of creating and lending credence to a Biological Engineering curriculum. Simultaneous with these efforts, there was a decline in the numbers of students seeking degrees in Agricultural Engineering. These two factors led to the emergence of the Biological Engineering effort. New names were given to the subdivisions of the Ag E curriculum including Biotechnical Engineering, Bioenvironmental Controls, Machine Systems Engineering, Bioprocess Systems Engineering, Natural Resources Engineering, and Food Engineering. Lastly, course outlines were developed for a suite of new courses that were considered necessary for Biological Engineers to have completed.

As a result of this effort at the National level, with leadership provided by ASAE, Agricultural Engineering Departments across the nation began to consider if and how they would be a part of this new Biological Engineering movement. At Penn State the faculty took the first step towards Biological Engineering by changing the Department's name to Agricultural and

Biological Engineering in November of 1990. In March of 1994, the name of the graduate program was changed to Agricultural and Biological Engineering and in March 1996 the name of the undergraduate Agricultural Engineering (Ag E) program was changed to Agricultural and Biological Engineering (ABE). In January 2008, the name of the undergraduate Agricultural and Biological Engineering (ABE) program was again changed to Biological Engineering (BE). The last change to date was in August 2010 when the Biological Engineering program added a third option to the program giving students in the Biological Engineering program the option of choosing either the “Agricultural Engineering”, the “Food and Biological Process Engineering”, or the “Natural Resource Engineering” Option.

With the emergence of Biological Engineering, several Departmental courses were changed and new courses in Biological Systems and Engineering Elements of Biochemistry and Microbiology were added to the curriculum along with appropriate senior-level design courses. The graduates from the engineering program are listed in Appendix 3.

College of Agricultural Sciences Changes and Changes within the Agricultural and Biological Engineering Department

July 1, 2012 – The College of Agricultural Sciences restructured thus reducing the number of academic departments from 12 to 9. The Department of Agricultural and Biological Engineering was not affected greatly. However, four faculty members who work in the wood products area moved from the School of Forest Resources (renamed Ecosystems Science and Management, ESM) to Agricultural and Biological Engineering.

These four faculty members are:

Nicole Brown, Associate Professor

John Janowiak, Professor

Paul Smith, Professor

Judd Michael, Professor (maintaining a joint appointment between ABE and ESM)

Agricultural Mechanization

Begun in the early 1960s, the Agricultural Mechanization program was a College of Agricultural Sciences undergraduate program designed for students who wished to develop strength in three major areas; (1) basic sciences of mathematics, physics, chemistry and biology, (2) engineering technology with courses in machine systems, building environments, natural resources, food technology, and processing, and (3) business. Since its inception this program has developed graduates with special abilities to work in all areas of the agricultural industry. Over the years a

large majority of these graduates have found employment in the machinery industry, but many have been successful in other areas of agriculture.

After Dave Beppler's retirement in 1986, James Hilton assumed the leadership role of the Agricultural Mechanization program. Around 2000 Jim relinquished this responsibility to Dennis Buckmaster, who provided leadership until 2006 when he left Penn State. For about two years Paul Heinemann provided leadership to this program until Jude Liu assumed this role in 2010.

Over the years, mostly in response to political pressures, the Agricultural Mechanization (Ag M) program has evolved primarily in name only. In November of 1990, the name was changed to Agricultural Systems Management and Technology (ASMT). In March 1994, the term "Technology" was dropped and what started as the Ag M program in the early 1960s became the Agricultural Systems Management (ASM) program. As the program took on these various names, the content and intent of the program remained primarily the same as described above.

This program has provided many students with viable agriculturally based educations that have served them well throughout their careers. Those who have graduated from these programs are listed in Appendix 4.

Communication and Leadership

In about 1999, Joseph Irudayaraj and James Hilton wrote a USDA project that argued that graduates from the Agricultural and Biological Engineering Department needed enhanced instruction in communication and leadership. The funding of this project resulted in the creation of two new courses, both required of all graduates from both the Agricultural and Biological Engineering (ABE now BE) and Agricultural Systems Management (ASM) programs. These two courses, taught from their inception by Ronald Johnson from the Smeal College of Business, emerged in 2006 after a decade of changes into the courses we have today. The first course, BE/ASM 391 Contextual Integration of Communication Skills for the Technical Workplace is a 2-credit course taught during Spring Semester of the junior year. The second course, BE/ASM 392 Contextual Integration of Leadership Skills for the Technical Workplace is a 2-credit course taught during the fall semester of the senior year. These two 2-credit courses replaced a required 3-credit Technical Writing course (ENGL 303) and a 1-credit Senior Seminar (ABE 490). These courses have been well received by the students and have been highly endorsed by the agencies and companies who have hired our graduates.

Turfgrass and Agricultural Equipment (TAE) Service Technician Certification Program

The Turfgrass and Agricultural Equipment Service Technician Certificate Program developed as a result of industry connections of James W. Hilton in 2003. A shortage of skilled technicians to maintain golf course equipment, as well as the contemporary agricultural tractors and machinery, gave further impetus for the program to be commenced. As a result of industry input, the two-year certificate program was formalized with four intensive 8-week sessions plus an internship requirement. Curriculum offerings included: engines, hydraulics, power transfer, electronics, electro-hydraulics, hydrostatics, irrigation, turf reel mowers and reel grinding, welding, metal fabrication, shop management, agronomy, business concepts/applications, personnel management, and diagnostics and troubleshooting.

Student successes have included employment at major golf clubs, smaller golf facilities, agricultural equipment dealerships, equipment rental facilities, irrigation design firms, farming, municipal grounds programs, and landscaping firms.

With faculty re-assignments, research, and retirements plus Department renovations and re-focus, the program ended in March 2011. Thirty-five quality technical-minded individuals had been mentored toward their entry into the field of turfgrass and agricultural equipment service.

Faculty who developed and taught the TAE program are:

Dr. James W. Hilton, Program Director, 2003-2011
Dr. Doug Schaufler, Instructor, 2003-2009
Dr. Aaron Yoder, Instructor, 2003-2009
William C. Harshman, Assistant Program Director and Instructor, 2003-2011
Jeff Downing, Instructor, 2009-2010
Bob Wrye, Instructor, 2009-2010

Penn State Omicron Chapter of Alpha Epsilon Honor Society for students in Agricultural Engineering and related engineering programs

The National Organization of Alpha Epsilon was founded in 1959 at the University of Missouri. Alpha Epsilon Honor Society's main objectives are: 1) to promote the noble ideals of the engineering profession, 2) give recognition to those agricultural and biological engineers who manifest worthy qualities of character, scholarship, and professional attainment, and 3) to encourage and support improvements in the Agricultural and Biological Engineering profession.

The Penn State Omicron Chapter was chartered in 1969 and seeks to honor students in agricultural engineering and related engineering programs, who are duly registered in the engineering curriculum. The selection of members is based on excellent engineering ability, scholarship, character, and leadership.

- Juniors who have a cumulative scholastic rank in the upper quarter of their class in the College of Engineering may be elected for membership after the first month of their junior year.
- Seniors who have a cumulative scholastic rank in the upper third of their class in the College of Engineering may be elected for membership after the first month of their senior year.
- Graduate students who have a cumulative grade point average of 3.25 or higher may be elected for membership after the completion of at least 7 course credits.
- Engineers and scientists who have made important contributions to the Department of Agricultural and Biological Engineering or to the Agricultural and Biological Engineering profession may be inducted into Alpha Epsilon as honorary members.

The Penn State students who have been initiated into the Omicron Chapter are listed in Appendix 9.

Appendix 1

Department Faculty

F. W. Peikert	Retired as Head of the Department, August 1975.
J. M. Hoover	Appointed Adjunct Assistant Professor, September 1, 1975.
W. J. Elliott	Resigned, September 30, 1975.
D. W. Johnson	Appointed Instructor, January 11, 1976.
H. V. Walton	Appointed Head of the Department, June 1, 1976.
D. J. Murphy	Appointed Instructor, June 15, 1976.
O. A. Kimmel	Retired July 1, 1977.
J. W. Hilton	Appointed Assistant Professor, June 1, 1978.
G. R. Bodman	Appointed Assistant Professor, June 30, 1978.
J. W. Garthe	Appointed Instructor, July 1, 1978.
N. N. Mohsenin	Resigned June 30, 1979.
R. A. Aldrich	Resigned September 1, 1979.
M. J. Kern	Appointed Instructor September 1, 1979.
H. B. Manbeck	Appointed Professor July 1, 1980.
D. J. Meyer	Appointed Assistant Professor July 1, 1980.
S. K. Sastry	Appointed Assistant Professor September 18, 1980.
A. R. Grout	Retired as Professor Emeritus January 1, 1981.
H. D. Bartlett	Retired as Professor Emeritus May 1, 1981.
W. R. DeTar	Resigned June 30, 1981.
N. H. Wooding	Retired as Professor Emeritus January 1, 1982.
D. E. Brune	Appointed Assistant Professor January 25, 1982.
R. E. Graves	Appointed Associate Professor March 1, 1982.

P. N. Walker	Appointed Associate Professor March 15, 1982.
T. G. Pierson	Appointed Lecturer June 1, 1982 to August 31, 1982 and June 1, 1983 to August 31, 1983.
R. A. Keppeler	Retired June 30, 1982.
S. K. Sastry	Transferred to Department of Food Science March 1, 1983.
K. M. Mancl	Appointed Assistant Professor September 1, 1983.
V. M. Puri	Appointed Assistant Professor October 27, 1983.
J. A. McCurdy	Retired as Professor Emeritus January 1, 1984.
K. Q. Stephenson	Retired as Professor Emeritus January 1, 1984.
R. E. Phillips	Appointed Assistant Director, State Program Leader for Extension June 1, 1984.
C. A. Zuritz	Appointed Assistant Professor August 10, 1984.
H. A. Elliott	Appointed Associate Professor August 15, 1984.
J. M. Carson	Appointed Assistant Professor January 2, 1985.
H. V. Walton	Retired June 30, 1985.
D. E. Buffington	Appointed Professor and Head August 1, 1985.
K. M. Mancl	Resigned April 20, 1986.
W. L. Kjelgaard	Retired June 30, 1986.
D. C. Beppler	Retired June 30, 1986.
M. E. Schroeder	Retired as Professor Emeritus June 30, 1986.
D. E. Brune	Resigned January 1987.
P. D. Robillard	Appointed Assistant Professor July 1, 1987.
J. M. Hamlett	Appointed Assistant Professor September 28, 1987.
T. G. Pierson	Appointed Instructor 1987.
R. C. Brandt	Appointed Lecturer March 1, 1988.

P. H. Heinemann	Appointed Assistant Professor September 1, 1988.
D. R. Buckmaster	Appointed Assistant Professor January 23, 1989.
J. M. Carson	Resigned March 31, 1990.
M. D. Shaw	Retired June 31, 1991.
D. J. Meyer	Resigned August 9, 1991.
S. P. E. Persson	Retired August 31, 1991.
P. M. Anderson	Retired December 31, 1991.
D. R. Daum	Retired June 30, 1994.
C. T. Morrow	Retired as Professor Emeritus June 1996.
C. A. Zuritz	Resigned 1993.
E. F. Wheeler	Appointed Assistant Professor November 1, 1994.
R. D. Shannon	Appointed Assistant Professor August 15, 1995.
D. E. Buffington	Resigned as Head of Department June 30, 1996.
H. B. Manbeck	Appointed Interim Head July 1, 1996.
D. G. Wagner	Appointed Assistant Professor August 1, 1997.
J. Irudayaraj	Appointed Assistant Professor April 1, 1998.
R. E. Young	Appointed Professor and Head July 1, 1998.
A. Demirci	Appointed Assistant Professor July 1, 1999.
A. M. Yoder	Appointed Instructor June 1, 2001.
R. G. Johnson	Appointed Instructor August 1, 2001.
D. Schaufler	Appointed Instructor 2001.
R. D. Shannon	Appointed Program Coordinator of Environmental Resource Management (ERM) program August 2000.
H. B. Manbeck	Retired as Distinguished Professor Emeritus January 31, 2004.

T. Richard	Appointed Associate Professor October 1, 2004.
J. Irudayaraj	Resigned March 31, 2005.
R. S. Thomas	Appointed Instructor January 2006.
D. R. Buckmaster	Resigned August 31, 2006.
W. G. M. Schneider III	Appointed Instructor May 1, 2007.
J. Catchmark	Appointed Associate Professor October 1, 2007.
J. Liu	Appointed Assistant Professor December 1, 2007.
T. Richard	Appointed Director of the Penn State Institute for Energy and Environment January 1, 2008.
D. Ciolkosz	Appointed Extension Associate August 1, 2008.
H. Salis	Appointed Assistant professor January 1, 2009.
R. E. Young	Retired as Department Head June 30, 2010.
P. H. Heinemann	Appointed Department Head July 1, 2010.
M. Marshall	Appointed Instructor July 1, 2010.
P. N. Walker	Retired as Professor Emeritus August 31, 2010.
J. W. Garthe	Retired June 30, 2011.
J. W. Hilton	Retired as Associate professor Emeritus June 30, 2011.
A. R. Jarrett	Retired as Professor Emeritus December 31, 2011.
D. E. Buffington	Retired as Professor Emeritus June 30, 2012.
R. E. Graves	Retired as Professor Emeritus June 30, 2012.
Nicole Brown	Appointed Associate Professor July 1, 2012□
John Janowiak	Appointed Professor July 1, 2012.
Paul Smith	Appointed Professor July 1, 2012.
Judd Michael	Appointed Professor July 1, 2012

Appendix 2

Technicians, Assistants, and Administrative Support Staff

Technicians and Assistants

R. Bock	E. R. Cieslar
N. Davitt	K. DeMarco
J. Drogue	L. Fetzer
T. Foster	J. H. Gummo
I. Hansen	W. Harshman
L. Heard	D. Hill
L. S. Jodon	G. Kann
S. Knight	T. Laird
K. Lebowsky	B. Macafee
P. A. Mark	M. Marshall
W. K. Moyer	R. Rao
A. Spangler	S. Steel
D. Topper	P. Topper
M. A. Wittman	H. Yi

Administrative Support Staff

C. Bloom	C. Butts
T. Confer	M. Connelly
D. Diehl	M. Drake
C. Eckley	B. Hazel
B. Hill	D. Holt
B. Holcolm	M. Hull
P. Irvin	S. Kelleher
A. Maney	P. Newel
W. Nyman	R. Rotz
D. Stout	M. Tourinsky
A. Trella	L. Zellers

Appendix 3

Engineering Graduates

*Indicates M.S. Degree, **Indicates Ph.D. Degree

Agricultural Engineering (Ag E)

1976	Robert E. Bos*	Donald R. Cantore
	Eric S. George	Fred A. Fox, Jr.
	Michael J. Green*	Steven H. Gluck
	Larry D. Hall	Timothy P. Hoover
	Daniel E. Hammett	Gary L. Kelso
	Richard A. Herring	Amnon N. Manor**
	Walter Hosea Latshaw	Alan H. Merbaum
	Gerald D. Lawruk	Fallak S. Sial**
	Franklin A. Oellig	Mohinder Singh*
	Ramesh Pall*	Barry R. Skiles
	Sterlin M. Rebuck*	Bernard E. Smith
	John M. Sceiford	Terry E. Snoddy
	James G. Schenck Jr.	Ted E. Stewart
	James F. Willats	Thomas R. Stottlemeyer
	John Zaganaylo III	Djoko Suharto**
		Joseph Tecza*
		Gary R. Tohill
		Kathleen Mailki White
1977	Larry W. Aaron	Thomas H. Wilson
	Duane R. Aurand	
	Jon M. Carson	1979 Marjorie J. Ballina
	Blaine K. Delaney	James E. Biddle, Jr.
	William H. Doll, Jr.	Betty L. Brockett
	Randy A. Greaser	Thomas K. Brosius
	Carl A. Johnson	Joseph K. Edwards
	Timothy J. Krall	Darlene S. Gluck
	Michael R. Lorenz*	David A. Haines
	David C. Moser	Ronald R. Hockensmith
	Royann J. Petrell*	Mark J. Kern*
	Gary D. Rimmey	William J. Liberato
	Karen Travis Rimmey	Gerald W. Longenecker
	C. Alan Rotz**	Stephen T. Mahan
	Peter J. Vanderstappen	Patrick D. McCloskey
	Kurt M. Walker	John E. Messenger
	Emil C. Wunz*	William F. Milburn*
	James S. Zahner	Jitendra P. Mittal**
1978	Tengku Ahmad*	Donald R. Murray
	Zulkifli B. Alias*	George C. Musser
	Javier A. Arce*	Jeffrey J. Postal
	Kevin W. Beaver	Chris M. Rosenbaum
	Michael Bedis	Matthew J. Smith
	George Campbell	Michael A. Smith
		Thomas R. Stahlnecker

	Brian S. Walker Karen E. Warnaka Kenneth E. Wolfe Jr.	Dale A. Lehman Fernando J. Leon Joseph M. McDonough Michael L. McMullen Michael A. Napoletano Craig W. Neal Mark E. Nieweg Craig A. Patterson Jeffrey R. Phillips Susan M. Putman Russell E. Raney David O. Roe Thomas P. Ross Robert E. Scheideman Wendy A. Schmidt Dennis R. Toomey Stephen L. Weise Randolf L. Whisler William W. Zeiders
1980	Carl M. Biddle, II Wayne M. Bogovich Harold E. Brosius Mohamed B. Daud* Steven E. Davis Robert L. Doneker David S. Dum William M. Elliott* Gregg A. Eshelman Eileen Fabian Jonathan C. Garsey Mark R. Lehner Gerald W. Longenecker* Karen Z. Mahan Alireza Malek* Samuel L. McLaughlin Ramesh Pall** David L. Roth James M. Schuler Timothy M. Skergan Karl A. Snyder Lodovico Spinabelli Jr. Jeffrey L. Suhr Paul C. Sweetwood* Bruce A. Telega Todd W. Williams Craig J. Wilson	1982 William A. Babacz David E. Braun Linda D. Cluck Ashis K. Datta** Michael P. Dillen Kyle F. Dresden John Einfalt Randy E. Fisher Emil A. Galis Paul H. Heinemann* Morgan T. Hoge II Albert P. Kermiet, Jr. Brian G. Leib Richard P. Lukas Timothy Matechak Robert E. Mellott William F. Milburn** Peter G. Mora Mark C. Mummert Larry M. Muzzelo Michael G. Null Leo F. Petrokonis Cindy P. Fairchild Jeffrey R. Phillips* Philip E. Risser Bernard T. Ryan Thomas K. Schenke Glen R. Scott, Jr.
1981	Patrice E. Anderson Badruddin Badrashi* Gary C. Blough Kenneth R. Brockett Joseph J. Carabetta Steven M. Charles Janice McClure David H. Cowperthwait Elaine D. Dell Timothy C. Eisenhart Lyle S. Fisher Neal D. Hallee** Michael J. Hills Steven R. Johnson Christopher D. Jones Frank M. Kislan*	

	Abolghasem Shahbazi-Markid**	
	Dennis P. Smith	Walter E. Snavley
	Jeffrey L. Suhr*	Terry L. Starr
	Ahmad Tabatabaifar	Edward W. Stas
	James K. Thomas	Gary M. Svetz
	Jeffrey L. Thomas	Robert J. Thompson
	Stephen R. Weaver	Ezra Tice*
	James J. Wendrick	Scott Q. Turn
	Roy A. Wetzel	Nevin W. Wagner
	Henry L. Wilusz	Thomas H. Weber
	Joseph M. Zulovich	Mark W. Zuber
1983	Edmond H. Albright	Andrew L. Blank
	Richard A. Alexander	Glyn R. Boone
	Nels C. Bergstrom	Timothy J. Bowser
	Kurt S. Borgoyn	David A. Brown
	Philip E. Carr	Thomas R. Chewning
	Edward M. Charney	Mary B. Cohan
	Samuel S. China*	Alan E. Daum
	Bernard E. Coval	Matthew Dolecki
	Craig H. Davis	Gene E. Dougherty
	David C. Drum	Harry Dravecky
	Brian K. Emrich	Peggy S. Duffy*
	Lyle S. Fisher*	Roger K. Ebba
	Sandra L. Foose	Brian D. Eberie
	Stephen I. Forgas	Sean E. Gill
	Emil A. Galis*	Donald M. Hedgeland
	Michael J. Good	Gregory D. Jennings
	Kenneth J. Guffey	Michael J. Kelmel
	Nancy S. Hoffman	Ann M. Kyper
	Sidney L. Hull	D. Kevin Landfried
	Douglas P. Ingle	Bruce D. Lindsey
	Stephen R. Johnson*	Daniel E. Line
	Dale A. Lehman*	Kurt F. Martin
	Samuel L. McLaughlin*	Scott E. McDowell
	Joseph J. Miller	Vincent D. McHenry
	Teresa G. Morris	Gary L. Miller
	John A. Moyer	Felipe Molina
	Mark C. Mummert*	Richard J. O'Donnell
	Larry M. Muzzelo*	Randy R. Patarcity
	Mark D. Myers	Luis R. Perez-Alegria*
	Billy A. Negley	Brian S. Peterman
	James K. Newman	Jeffrey S. Ross
	Edward F. Orris, Jr.	George A. Skovran
	Arthur H. Reede, Jr.*	Gary V. Snyder
	Timothy R. Royer	Rodney M. Snyder
	Robert E. Scheideman*	Robin F. Stas
	Jon P. Schultz	Ahmad Tabatabaifar*
		Bruce A. Telega*

	Jerry A. Valecko George A. Volinsky Gareth A. Wallace David P. Waterman William H. Weist Roy A. Wetzel* Patrick M. Wood Joseph M. Zulovich*		Timothy J. Bowser* Wayne A. Carvell Michael W. Clark Marcia G. Donmoyer Harold J. Dubensky* William R. Farwell Wesley E. Garrod Kenneth J. Guffey* William J. Hutzel
1985	Brian S. Baker Sheila A. Bloom Paul J. Boxler Christopher M. Branda Scott B. Carl Frederick L. Charles Harold J. Dubensky Vincent J. Farrell Michael L. Fischer James H. Freiss Jeffrey A. Friend Judith M. Greer Jere W. Grube Kevin W. Kiedaisch James F. Kjelgaard Aaron N. Lepro Kyle R. Mankin Martin K. Megnin Joseph K. Miller Rory A. Miller Edgar G. Murakami** Timothy J. Orr Elizabeth A. Rheingans Patrick O. Richie Jude D. Schlimm Jon P. Schultz* Richard M. Smucker Karen K. Sobka Christian Vinten-Johansen* Lawrence E. Walker Philip W. Wursta Thomas C. Wurster Qiang Zhang*		Gregory D. Jennings* Kenneth R. Keen Joseph W. Labant, Jr. Daniel E. Line* Kevin M. Lynch Dwayne M. McGrody Scott E. Morley Stephen P. Perschke Brian L. Roy Robin F. Stas* Duane A. Stine
		1987	Glyn R. Boone* Craig A. Carlson Thomas A. Cincotta Glenn J. Eby James E. Eisenbrown Dominic A. Galassi Robin M. Potter* Kevin J. Kelly Paul E. King Thomas M. Levine Kyle R. Mankin* Luis R. Perez-Alegria** Rita F. Purnell Jack F. Rae John D. Ross Terri T. Ruch Thomas Steen Robert W. Sweppenheiser II Joseph W. Webb Ronald L. Welling* Bradley W. Wright* Qiang Zhang**
1986	Glenn M. Andrews Edward J. Baranski, Jr. Jeffrey E. Bell Nels C. Bergstrom* Randall G. Bock	1988	Michael P. Berg* Donald L. Brough Michael R. Corrigan

	Eric S. Fellon Wesley E. Heisley John C. Henry Michael A. Hulzinga* Janice McClure** Martin K. Megnin* Gary S. Mescavage Michael R. Raney* Roy F. Stevenson David F. Troxell Steven A. Weinhold Donald R. Whitenight	Dirk A. Wahanik Michael J. Weiland
1991	Krista L. Cessna Wade W. Chamberlain Theng M. Cheam Christopher R. Daubert Lewton A. Deichert Dennis J. Gustafson Mark J. Heebner Leon W. Heisey J. David Keener Eric D. Lowe C. Patrick Maggi Paul J. Manns William A. Meacock Scott L. Merritt Patricia A. Mitchell Stephen R. Polloni Lester O. Pordesimo** Rugang Qi* Mohamad R. Razavi Christine A. Rutherford Patrick O. Richie* Scott W. Sipple Timothy S. Stombaugh* Yang Tao** Donald R. Whitenight* Dennis P. Whitney Matthew P. Zeigler	
1989	Edelberto R. Alcairo* Randall G. Bock* Robin C. Brandt Robin C. Brandt* Robert D. Edwards Jr. Brian L. Fischbach Susan N. Frazier Andrew C. Hrynczyszyn William J. Hutzel* Louis A. Kopczyk Jean M. Kruis Aaron Leakemariam Yanbin Li** Matthew J. McCoy Rita F. Purnell* Timothy S. Stombaugh Girish Subramaniam* William J. Zacharias	
1992	Stephen A. Chordas Jennifer L. Deichert Crile Doscher Jr.* Brian W. Engle* Lawrence A. Fennessey Mark O. Gardner Bryce D. Good Shella R. Hackinson Douglas W. Hamilton** Thomas E. Herlihy* Khoa D. Huynh Sunil Kamath* Christine K. Maggi Ronaldo G. Maghirang** Christopher J. Novosad Cecilia M. Partsch* Tara L. Romano	
1990	Sharif H. Almashat* Kevin M. Brannan David E. Braun* Donald L. Brough* Joel L. Cuello* Brian W. Engle Larry S. Engle Mark F. Field Brian T. Linvill Brian D. Long Renfu Lu** Cecilia M. Partsch Timothy W. Riegel Daniel P. Schofer Henry L. Seidel Max A. Stanisch Roy F. Stevenson*	

	Brian G. Rupp James P. Shedlauskas Matthew R. Smith Philip J. Squire* Ahmad Tabafabaifar** Abraham Z. Varghese** Robert P. Woerner Bradley W. Wright**	Julie A. Hickey K. G. Karthikeyan* Christopher M. Kirkham Aaron K. Lee Jenshinn Lin** Jodi Litus Yan Sheng Liu** Jeremy S. Madaras Bryan K. Nolan Brian S. Noll Douglas H. Schaufler** Katherine A. Scott Jeannie L. Sikora* Kevin M. Smith Terry L. Strausser Jeffrey E. Strulic Patrick S. Thompson Michael A. Tripodi**
1993	Mohammad H. Bagherzadeh** Neal H. Barto* Larry K. Brannaka** Kevin M. Brannan* Todd W. Carenbauer Wade W. Chamberlain* Randy W. Clouse Sydney H. Deck** Lewton A. Deichert* James A. Dunkelberger David S. Elkin Daun L. Fitzpatrick Jerrold L. Grosh* W. Michael Hardin Leon W. Heisey* Valdis J. Krumins Andrew S. Levine Eric D. Lowe* Randolph E. Manack Todd E. Palmer Niranjan P. Pathare* Christine A. Retherford* K. P. Sandeep* Holly D. Sharp Jeffery T. Smith Girish Subramaniam** John T. Tyson Cheryl F. Vorhauer* Edwin A. Wagenheiser Eric C. Williams Myron S. Worley* Lluming Zhou**	March 18, 1994 Graduate program name changed to Agricultural and Biological Engineering (ABE)
1994	Thomas H. D'Alfonso** Tracey J. Dengler-Crawford Tomas A. Fajardo* Lawrence A. Fennessey* Brian J. Fischer* Mark O. Gardner*	1995 Nathan M. Anderson Kent A. Bitting Kevin A. Blose Deron G. Davis Shawn P. Duffy Wayne T. Farrow Jr. James S. Garvin Jennifer L. Goyne Bin He* J. David Keener* Konrad R. Kerr Sarah E. Labance Robert A. Land Dauda D. Ladipo* Feng Li* Greta L. Martin-Washington Stacy G. Maun Jonathon D. Mead Stephen R. Messier* Joseph A. Millen Dennis Q. Neff II Matthew C. Newton Robert F. Olsen Shane C. Parson* Howard L. Pope III

		March 15, 1996 Undergraduate program name changed to Agricultural and Biological Engineering (ABE)
1997		Sajid H. Alavi* Brian M. Brochon Jeffrey K. Brown Neylor A. Calasans** Abhijit Chatterjee* Prentiss P. Douglass Shawn P. Duffy* Bethany A. Elkin Christopher M. Ernst Daniel R. Fabin Amy L. K. Forbes Luke E. Helsel John R. Hicks Daniel P. Hindman K. G. Karthikeyan** Ali B. Koc* Vincent D. Lacross* Matthew J. Lawrence (Ag E) Ling Eng Low** Michael W. Lubinsky Steven J. Lynch Jeremy S. Madaras* Greta L. Martin-Washington* Matthew J. Miller (Ag E) Jonathan P. Moats Mark C. Ott (Ag E) Joel R. Peterson* Wendy L. Polasko Cheri L. Salas* Matthew D. Schaefer Edie S. Sears* Aaron B. Stephens Anthony M. Trout (Ag E) Zhijie Wang** Scott E. Wolf
1996	Jason L. Deysher Crile Doscher, Jr.** Jose I. Escribens* Mark C. Fowles Joseph A. Glotz James B. Harrold Travis J. Herrold Larry L. Hoover Gary M. Huslak Sunil Kamath** Jason E. Kirk Jeffrey W. Lann Brent Leatherman Li Liu** Shelby P. Magliari Joseph A. Martinenza Jr. Joseph A. Millen* Susan M. Miller Devlina Mukherjee* Jennifer M. Nolan Elizabeth A. Northeimer Andrew J. Rogowski Jennifer Rauhofer K. P. Sandeep** Andrew J. Schall Matthew E. Schultz Nityanand L. Shastri* Kevin M. Smith* Steven G. Snyder Roderick S. Thomas* Radhakrishnan S. Vilayannur* Zhijie Wang* Heather Warren* Susan L. Wood* Matthew P. Zeigler*	1998 Robert J. Allison Nathan M. Anderson* Mohammad H. Ayagi* Drew E. Becker Steven M. Brown Diane E. Chan*

	Frederick L. Charles** Thomas H. Colledge** Matthew W. Dixon Benjamin J. Ehrhart* Handan Erturk** Stephen J. George Gary L. Graff Larry L. Hoover* Susan K. Hwang Jason E. Kirk* Sarah E. Labance* Brian G. Leib** William R. Lloyd III Crystal A. Markley Jeremy S. Mondock David A. Newman Melissa Nowakowski Robert D. Oates Kenneth L. Orie Matthew D. Plant Jennifer Rauhofer* John H. Scarborough Benjamin T. Stratton Daniel R. Warner Benjamin Wisniewski Troy D. Young (Ag E)	Mark D. Swank Rebecca S. Wargo Archie L. Williams* Scott E. Wolf*
2000	Michele A. Aukerman Sarah K. Bowen John E. Cudoc Lawrence A. Fennessey** Brian M. Green Deanna D. Hoekstra Linchang Huang** Pamela A. Kayatta Chad M. Keating Ali B. Koc** William R. Lloyd III* Douglas W. Matthews Shankar Radhakrishnan* Ronald W. Roeder Jr. Michael M. Rubano* Trevor W. Rudy Kathleen M. Rut Joshua B. Ryan Paul C. Sedesse Jr. M. S. Srinivasan** Luke T. Teller Benjamin Wisniewski* Susan L. Wood**	
1999	David A. Bidelspach Michael D. Blose Jeffrey K. Brown* Robert G. Deecki III Steven M. Fagan Zachary L. Gay Tawni T. Hoang* Raghunandan N. Kandala* Scott L. Kauffman Jason E. Keller Jordana L. Langiotti Feng Li** Sridhar Loke* William N. Marrazzo** Susan M. McNulty Bhavishya Mittal* Tom O. Owino** Shane C. Parson** Kevin P. Quill Eugene L. Shelhamer Puneet Srivastava** Aaron B. Stephens*	2001 Matthew D. Brubaker Julia D. Denardo Shawn P. Duffy** Eric B. Greenswait* Sang-Hyup Han* Todd D. Huber Barton E. Kirk Autumn H. Long* Judson P. Long* Julie E. Masser Angela Mazzoni Chad D. Peters Matthew P. Pruss Rakesh Ranjan* Edie S. Sears** Hillary M. Sharp Roderick S. Thomas** Siza D. Tumbo** Carolina Vela Stephen P. Walker

2002	David A. Bidelsbach* Mickael R. Bixler Jamie A. Bober* Clair M. Breneman Lula T. Ghebremichael* Megan K. Hamilton Soo J. Jun** Kathirawan Krishnamurthy* Sarah E. Labance** Sheri A. Lamphere Eric P. Pesce Michael R. Reiner Ronald W. Roeder Jr.* Nadia C. Sabeh* Heather L. Schaetzle Ratna R. Sharma-Shivappa** Jason L. Sperry Eric R. Steigman Robert O. Strobl** Sean C. Sweeney Michael L. Sword* Barrett T. Vaughan** John W. Waswa* Nathan S. Watts Jeffrey M. Werner Eric L. Wriglesworth Hong Yang** Min Zhang**	Stephen P. Walker* Kenneth W. Wedel Jr. Daniel A. Wilson Guoshun Zhang*
2004	Mark A. Bechara* Katherine L. Bialka* Michael A. Brown Deniz Cekmecelioglu** Jonathan R. Channell Remegio B. Confesor** Erin E. Cummings Bryce A. Fidmore David E. Finkenbinder Benjamin T. Kaiser Renee L. Korach* Matthew J. Lawrence* Diana M. Maimone Blaine R. Noll Christina L. Pepple Erica M. Petre Anna L. Santini Justin T. Spangler Johnathan R. Stahl Kristin Szachetka Pingjun Tang** Bradley J. Wagner Alan D. Wood** Stacy K. Worley**	
2003	Robin C. Brandt** Jesse R. Burow Byoung-Kwan Cho** Julia Denardo* Vivian J. Figueroa Nicholas A. Fisher Margaret W. Gitau** Jarrod J. Hart William F. Hunt** Nitin Khandelwai* Dustin P. Kieffer Ramazan Kizil** Robert W. Klindworth Julie E. Masser* Justin E. May Michael Q. Nassry Tremaine B. Powell* Peter B. Toft Ennis L. Veale*	Jesse R. Burow* Kelly A. Collins Cameron M. Cornelius Michael E Fifth II Kevin M. Flynn Grace F. A. Igot Jordan S. Kahlenberg Shaowei Liu** S. Matthew March Tan Meesook* Ryan M. Moose Monique N. Person Eric P. Pesce* Farzaneh Rezaei* Alvaro F. Rivera Dawn Sedorovich Gregory F. Stricker Anand S. Subramanian*

		Joshua W. Kemmerer Neha K. Khandke Kathryn LaVan Matthew J. Lawrence** Ross W. Lindley Garrett S. Mock Michael Q. Nassry* Manolya E. Oner* Robert L. Plank III Saed Sayyar-Roudsart** Paul A. Shealer Nathan W. Shepp Daniel J. Wagner* Eric D. White Thomas O. Wilson
2006	Nathan M. Anderson** Tracy L. Bender Holly C. Cinkutis David L. Dietrich Jamie L. Fisher Richard M. Forney Morgan Hayes Patrick L. Henry Michael R. Kreider Kathirawan Krishnamurthy** Changying Li** Todd J. Miserendino* Lindsay A. Peters Slade P. Peters Thunyarat Pongtharangkul** Bridgette A. Ramer Haiyu Ren** Michele L. Seib Mark R. Sell Kevin B. Spangler Alexandra C. Srebro Michael J. Vassallo* Erik M. Vranich Archie L. Williams** Xinsheng Xie** Juan Zhao**	January 18, 2008 Undergraduate program name changed to Biological Engineering (BE)
2007	Mark C. Baker Mark A. Bechara** Ryan A. Bentzel Katherine L. Bialka** William R. Brooks Robert A. Brown Joseph A. DeChristopher Joshua S. Eipper Jeffrey K. England Travis J. Fisher Zebulon D. Fultz Lula T. Ghebremichael** Rhonda N. Ghilarducci Jaskaran S. Gill* Joel Q. Grim Christopher M. Henry Yen C. Huang*	2008 Darryl M. Baxam Douglas K. Brownell (ABE) Jeremy A. Davis Reuben J. Dise (ABE) Justin M. Hall (ABE) Muhammad Hishamuddin (ABE) Daniel J. Hopkins, Jr. (ABE) Rosa M. Jarvis (ABE) Arjani K. Jha** Jeremy R. Kauffman (ABE) Joai M. Koratich Abraham H. Kuol (ABE) Caitlin M. Latshaw Angela D. Lieb (ABE) Ernest K. Osseo-Asare Joseph E. Parisi (ABE) Daniel M. Paxton (ABE) Timothy W. Peters (ABE) Jared A. Puvak (ABE) Erika H. Reifenstein (ABE) Kevin P. Resnik Jr. (ABE) Farzaneh Rezaei** Rachel Rorick Drew D. Scarantino (ABE) Dawn Sedorovich** Natalie K. Shewski Kurt M. Smay (ABE) John W. Stratton (ABE)

	John T. Tyson*	Maxwell D. Dettlinger
	Benjamin B. Unger (ABE)	Ryan A. Gehringer
	Krista A. Virsack	Shawn M. Haas (ABE)
	Eric D. Ward (ABE)	Alyssa Holgate (ABE)
	Patrick J. Wilshire (ABE)	Kelly J. Irish
	Patrick J. Woolcock	Gultin Izmirlioglu*
2009	Joshua M. Beichner (ABE)	Deepak Jaiswal**
	Douglas K. Brownell*	Charles D. Johnson (ABE)
	Brandon D. Bufalini (ABE)	Jason E. Kennedy
	Gustavo G. Carnargo*	Joshua A. Lesher
	Qin Chen**	Alex Y. Lin (ABE)
	Margaret H. Emerick (ABE)	Nicholas R. Martin
	Christian R. Fulkman	Michael D. McKay*
	Rick L. Hall Jr.	Andrew D. McLean
	Keith L. Hodge (ABE)	Cory E. Moore (ABE)
	Aaron J. Jolin	Manolya E. Oner**
	Nene M. Keklik**	Ryan J. Progin
	Benjamin D. Kemmerer (ABE)	Richard T. Reiber (ABE)
	Kraig S. Kephart (ABE)	Michael R. Ryan (ABE)
	Bao L. Li	Simon A. Sassaman (ABE)
	Duane R. Moore (ABE)	Jessica L. Schwartz (ABE)
	Edward J. Moyer (ABE)	Pamela A. Smith
	Josiah S. Newman (ABE)	Brian A. Stone (ABE)
	Hatrice O. Ozden**	N. Kip Totten (ABE)
	Anuranjan Pandeya**	Stephen P. Walker**
	Samuel P. Roberts (ABE)	Bradley J. Wenger
	Evan Rusadi	Mark R. Williams*
	Brett M. Schrey (ABE)	Marlyse K. Williams**
	Scott A. Shore*	Thomas O. Wilson*
	Jena M. Smolko (ABE)	2011
	Deepti Tanjore**	Katherine L. Blansett**
	James A. Tillapaugh*	Benjamin P. Campbell
	Jimmy Truong	Christopher M. Ferry
	Matthew J. Wagner	Kaitlin E. Fortnam
	Nathan R. Whited (ABE)	Joseph P. Herbstritt
	Haijun Wu**	Stephanie M. Herbstritt
	Zachary F. Zapsky (ABE)	Daniel W. Hofstetter*
	Guoshun Zhang**	Yang Hu**
	Jiayun Zhang*	Collin Julius*
2010	Sarah A. Adams	Benjamin D. Kemmerer*
	Justin M. Becker (ABE)	Alexander W. Leslie
	Samuel H. Blaydon (ABE)	Andrew F. Liptock
	Mark G. Buckwalter (ABE)	Zachary S. Long
	Kuan-Chen Cheng**	Sandra C. Mateu
	Joseph W. Christie (ABE)	William J. McGrotty
	Marlo N. Ciccone (ABE)	Preston L. McKinney
	Shauna L. Couch	Dana M. Mears*
		Niharika Mishra**
		Todd S. Parker

	Lucas M. Powell Robin M. Pritz Christopher J. Ritchie Dustin Shearer Peter F. Slover Michael J. Stefanchik Michael T. Thomas Serena Wang David M. Werner Nathan R. Whited*	Joshua D. Hughes Brian R. Kelly Joshua L. Lounder Jonathan A. Lyne Isaiah Martin Jonathan E. May Eric M. McCann Thomas A. McCarthy Kory R. Noggle John R. Novoshelski Adam R. Plucinski Angela M. Raimondi Sarah E. Richer Kaitlyn N. Roberts Matthew T. Ruff Kyle W. Simpson Christopher S. Smith Vincent J. Smith Scott A. Strobel Joseph R. Sunder Andrew G. Vensko Andrew N. Wolos Hanfu Zhao
2012	Jonathan F. Amt David A. Beckstead Alex Devaux Nathan R. Drzal Christopher J. Felter Reid W. Garner Matthew J. Gearhart Daniel J. Glass Alexander Greenspan Jason M. Hegedus Nathan Hinterberger	

Appendix 4

Mechanization Graduates

Agricultural Mechanization (Ag M) Master of Agriculture (M AGR)

1976	Bryan Bard	Stephen B. Rowe
	Robert P. Bean	Dennis B. Spangler
	Richard L. Caswell II	Howard L. Stoltzfus
	David A. Dell	Harry E. Stugart, Jr.
	Ray E. Duke	Kurt E. Taylor
	James W. Hallowell	
	Daniel E. Hammett	1979 Kenneth L. Dietz
	Robert B. Keith, Jr.	R. Evan Fox Jr.
	John M. Lindey	E. Dennis Ginder
	Thomas C. Lipinski	John F. Griggs
	Jeffrey D. McCord	Lyndon B. Hepler
	Douglas R. Myers	David R. Klingensmith
1977	Ronald J. Secord	David P. Marchini
	Michael J. Wiley	John J. Mulholland
	William K. Christofel	James T. Oliver
	Glenn K. Gearhart	Mark A. Pavcik
	Joel R. Gravitz	Keith M. Ruhl
	James C. Heintzelman	Kirk S. Schaller
	Randall C. Imbt	James S. Shadle, Jr.
	William J. Kelsall	Gary L. Sheppard
	Paul J. Miskinis	Harold M. Swarr
	Garry L. Pepple	Eric C. Woelfel
	John E. Single	
	Robert D. Strock	1980 William M. Blyshak
1978	James F. Wess	Keith A. Campbell
	George N. Whitaker	David V. Coxon
	Adesoji O. Adelaja	Jeri Dubec
	J. Craig Aurand	William M. Gearhart
	Bernard J. Becker	Willis L. Greaser, Jr.
	Peter D. Burkhardt	Geralyn A. Harrington
	Timothy D. Gordon	Ronald L. Heiken
	Richard W. Hetherington	Mark D. Hergenreder
	Galen M. Julius	Dale B. Johnson
	Kurt W. Keilhofer	John A. Keith
	Ernest A. Keller	Stephen C. Kistler
	Patrick J. McCormick	Edwin E. Kline, Jr.

Clifton D. Miller Edwin E. Kline, Jr.
 Bruce T. Rea Gregory A. Long
 Joseph D. Rihl, Jr. Timothy P. Lutz
 Charles J. Ritinski, Jr. Merle F. McAnallen
 David J. Rothermel David C. Mumma
 Leon E. Poplawski John P. Remington
 Bradley J. Sunanday

	Paul S. Trella	Kevin R. Campbell Margaret M. Condon John F. Cunningham Kenneth A. Dunmire Ronald E. Fetrow Robert T. Fullerton C. Frank Hess Thomas S. Hutchison Timothy N. Lelo John R. Logan Craig K. McGee John J. McGoldrick Joseph C. Schuck Martin A. Shamro James V. Sinden Neil S. Squier James V. Wagner David J. Ward Bruce E. Weaver Ronald K. Wells Lloyd R. Wilson	
1981	Dale H. Bloom Philip D. Dean Richard H. Deutsch David W. Heider Ronald D. Hess, Jr. Donald J. Hohn Theodore F. Hovermale, Jr. Thomas M. Kalasky Bradley A. Lewis Kenneth J. Martz John A. McConnell Joan W. Mosteller John B. Myers John R. Myers Steven M. Packer Ralph E. Schramm Samuel G. Schuler Douglas Y. Smith James G. Stewart Joseph B. Stratton Harry L. Vroomen William G. Wichser	1984	Barbara M. Baxter Frederic B. Bennett C. Daniel Brogdon Peter E. Brown Brian T. Chick Gregg A. Davis Kelli G. Hartie Mark A. Hewel Michael R. Hydachak Richard R. Kincaid Steven L. McCosby Gary L. Miller Kevin R. Moore William H. Neilson Calvin A. Odhner Robert J. Podiaszewski Paul N. Schuler Randolph A. Weirman
1982	Leslie A. Bower John R. Butcosk David J. Custozzo Steven M. Eno Randall E. Fardelmann Steven C. Farney Thomas J. Flegler George E. Gourley David A. Hudish James S. Jacklin Paul J. Klens Ronald M. Koontz William R. Korman Ronald A. Kraszewski Jr. Stephen R. Peck Kevin D. Rimmeley Robert R. Ross, Jr. D. Bradley Rowe Stuart L. Thompson John W. Yeash	1985	Thomas M. Berge Bernie J. Buzulak William H. Deitrick Thomas J. Dilley Glenn Hartz Brian D. Harwick
1983	Kamran Abdollahi Curtis A. Bookhammer Ricky L. Butz		

	Michael L. Hogue Vincent J. Jedrziewski Carey D. Kalupson Jr. Timothy W. Kyle Eric J. Longenecker Kurt R. Padavano Gary M. Pokrifka Richard J. Sanders David J. Stas John C. Walter	Edward J. Kaufman Francis G. McCormack Kyle L. Nicholas Bruce A. Roy
1986	Timothy J. Bupp Glen A. Burger Gregory G. Clarke Michael T. Donahey Lowell D. Graybill Jeffrey L. Havens Thomas M. Henry Joseph G. Hughes Cameron M. Johnson Robert B. Manns David A. Radcliffe John E. Rutherford Robert A. Scott Nicholas C. Smith Blaine A. Stebick Lynn E. Temple	1989 Patrick K. Fenstermacher Daniel B. Foresman Michael L. Groszkiewicz Troy L. Mest Robert J. Ratvasky Kenneth H. Soder, Jr. Thomas E. Sokol James J. Stratton
		1990 Melinda A. Anderson Harvey F. Arter, Jr. Bryan R. Eberly Drew V. Fletcher Dale R. Happel Francis G. McCormack* Michael W. McCahren Paul W. Schmidt
1987	Stephen E. Adams Allen C. Augenstein John S. Baker Theodore R. Brown Agrippa M. Dlamini* Bernhard R. Griwatz Douglas A. Haagen Eric M. Hallman Karl R. Heffner John C. Hoffman Kenneth A. Hoover Stacy A. Kovalchick Marc P. Stachowski Ira G. Summerhill	1991 Eric J. Bowersox James R. Day (Ag M) Fred J. Perino, Jr. (Ag M) Donald S. Templeton (Ag M) Daniel F. Troxell (Ag M)
		1992 Daniel P. Basalyga III Daniel A. Carney Craig T. Cassidy John R. Ferringer (Ag M) Michael L. Groszkiewicz* Philip C. Jones (Ag M) Martin D. Reichard Todd B. Way
1988	Mark E. Bonson Timothy E. Enderlein Gerald D. Faust Eric M. Hallman* David D. Heilman Daniel C. Jandzio	1993 Brian K. Brady George E. Dills Daniel L. Eppinger James W. Fitzgerald Richard R. Hissong Bret A. Leiphart Brian R. Macafee

Robert J. Meinen
Scott A. Raubenstine
Timothy R. Stoner
Robert C. Stout
Curry D. Werkheiser

Andrew B. Kumpf (ASMT)
Michael L. Long
David G. Masser
Anthony J. Mihalak
Marc J. Miller
Wade L. Myers
Andrew J. Petro
Alana E. Pore
Erin A. Pore
Scott A. Rebert
Emily Rogers

March 19, 1994
**name changed to Agricultural
Systems Management (ASM)**

1994	Donald A. Fair (ASMT) Timothy B. Groff (ASMT) Robert J. Jackson (ASMT) Bryan C. Kaniuk (ASMT) Willie Kelty William N. Sage (ASMT) James D. Smith (ASMT) David A. Thiel (ASMT) Christopher D. Thomas (ASMT) Kevin D. Vandervort (ASMT) Amy S. M. Werner	1999	Eugene M. Barton, Jr. Brian H. Claypoole Glen L. Fair Todd R. Frankenfield Blake P. Gendebien Ryan W. Graham Bryan Grube Shawn P. Hite Marc A. Kovach Timothy C. Owens Andrew J. Tarman Jere L. Wingert
1995	Frank J. Roginski Jr. R. Scott Sahrhage (ASMT)		
1996	Dean J. Kohler (ASMT) Andrew C. Lewis (ASMT) Mark A. Mangieri (ASMT) Robert E. McKee (ASMT) Shane R. St Cyr David E. Wharry (ASMT)	2000	Lewis P. Beatty Gregory E. Dillner Neal R. Generose Gregory E. Hawn Keith A. Hoover Michael S. Platt Kurt A. Wearing
1997	Brett A. Baron Daniel A. Cherrie (ASMT) Scott N. Flanders Jason J. Henderson (ASMT) Todd A. Hutzell Garin R. Ingalls Aaron M. Yoder	2001	Abram E. Brister Eric D. Moser Marc T. Valentine
1998	Jarrod S. Angstadt Clinton J. Burkholder Andrew B. Cherry Christopher J. Donovan Kris L. Hay Christopher J. Kamzalow	2002	Derek L. Ashenfelder Glen R. Cauffman* Philip C. Eby Daniel J. Mearkle Brian S. Oberholzer Jason A. Piwowar Michael M. Reskovac Patrick A. Topper

2003	Heather E. Bowers Melinda E. Martin Peter J. Vollmer	Scott R. Rhodes Michael S. Smeal Jason A. Spieker
2004	Benjamin W. Ditchcreek Khaled A. Elridi Jeremy J. Matinko Kathryn E. S. Mosholder Matthew A. Mosholder Timothy R. Olver Nevin R. Sassaman Andrew C. Schreffler Adam R. Sieg Lauren K. Smetanick	Jacob C. Altermus Samuel W. Ditchcreek Sara M. Karns Sean M. Kenney Zachary S. Lauver Michael B. Miller Justin R. Olsen Paris M. Persun II Richard M. Shellenberger
2005	Jason M. Briggs Aaron M. Kinch Christopher E. Kovalchick Nathan C. Leach Andrew Prusinowski Jonathan D. Reinecker Andrew F. Uhland Adam W. Voll	Tyler M. Ackley Timothy D. Artman Carl P. Bruno Jacob S. Crooke Christopher A. Dietrich Mark F. Hansberry Benjamin J. Kratzer Jeffrey H. Leese Justin S. McRoberts Alex F. Potosky
2006	David P. Aducci George V. Agnew James M. Biddle Austin G. Binkley Jason L. Bixler Richard L. Bupp Esmond B. Crooke Allan J. Day Nathan C. Decker Ryan T. Gahres Aaron L. George Seth J. Gropp Stefanie M. Pollock Derek C. Sealand Adam P. Vivell	Brandon Redmond Jonathon D. Robinson Timothy R. Stewart Ian S. Vranich Randall A. Wakefield
2007	Jay T. Bechdel Nathan J. Crooke Seth T. Doman Thomas J. Doody Robert J. Garrett Joshua D. Kratzer Jason G. Lamm Ryan P. McCormick Cody J. Musser	Christopher C. Brenner Nevin C. Dysinger Scott C. Fitzpatrick Joseph G. Geary Matthew T. Henderson Kyle J. Leh Robert L. Lomax Scott J. Milchak Tyler J. Nehlig Kyle K. Runkle David J. Shertzer Philip L. Slusser Steven R. Woods
		2010
		Robbin Campbell Victor M. Constable Bradley H. Dressler Preston K. Eshelman Christopher S. Harnish
		2011

	David K. Harwick Creighton L. Knopsnider Josiah C. Meck Anthony Miller Jr. Miles L. Miller Trevor Miller Emily H. Smetanick Jonathan A. Smetanick Tyler S. Ulrich	Wesley C. Congdon Christopher M. Dara David B. Gray Gabriel N. Hartman Steven R. Hunsicker Benjamin S. Kunkel Zachary S. Neiderer Korey L. Rider Russell L. Rohrbaugh Mark A. Slusser Brian D. Thrush
2012	Jason M. Barnett Ryan D. Berkey	

Appendix 5

Farm Equipment Service and Sales Graduates

1976	Gary M. Cowden Robin R. Hitchner Kenneth R. Houser Robert S. LaVan Todd D. Sloane George A. Wilson Howard J. Zurn
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Appendix 6

Departmental IPAC Members

Name	Company/Agency/Title	Years
John W. Ackley	Research Engineer, Deere, and Company Technical Center	1973-1978 1987-1988
Gary W. Allshouse	Senior Design Engineer, Sprout-Bauer, Inc.	1987-1991
Julie Masser Ballay	Masser Potato Farms	2010-2012
Perry H. Ballek	Division Manager, John Deere Industrial Equipment Co.	1992-1995
William Batchelor	Mississippi State University	2008-2010
David Bidelsbach	Stantec, Inc.	2011-2013
Wayne Bogovich	USDA-NRCS	2004-2009
Dante Bonaquist	Praxair, Inc.	2012-2014
Glyn R. Boone	Staff Engineer, Butler Rural Systems, Trus-Joist	1990-1995 2000-2002
William J. Bowers	State Conservation Engineer, USDA-SCS	1987-1991
David E. Braun	Senior Sales Engineer, Andritz Sprout-Bauer, Inc.	1992-1994
H. P. Brown	Sales Representative, Lamco Mfg. and Dist. Co., Inc.	1971-1976
Karl Brown	State Conservation Commission	1998-2001
Mike Brubaker	Brubaker Agronomic Consulting	2000-2001
David H. Bucher	Senior Division Engineer, Deere & Company	1985-1990
Dale A. Bucks	USDA-ARS	2001-2002
Robert L. Carper	Manager, Firestone Test Center	1980-1985
Krista Cessna	Hershey Foods	2002
Frederick Charles	MFG, Inc.	2001-2002
Harry Cooper	Procter and Gamble Company	1993-1995 1997-1998
Robert S. Crist	Customer Service Engineer, West Penn Power Company	1980-1985
Thomas D'Alfonso	Danisco Animal Nutrition	2006-2011
Miles D. Daub	Director, Process & Product Engineering, Hershey Foods Corporation	1989-1994
James R. Day	Turf-Teg, LLC	2005-2010
Lynn Deitrich	Grove Worldwide	2002
Dave Elkin	Murphy Brown, LLC	2003-2005
Ray Evans	Titan International	2010-2012
Robert Evans	North Carolina State University	2011-2013
Daniel Fabin	John Deere Products Engineering Center	2002
Cynthia A. Fairchild	Consulting Engineer, H. M. Stauffer & Sons, Inc	1989-1994
Essex E. Finney Jr.	Assistant Director, Beltsville Agricultural Research Ctr., Federal Res., SEA-USDA.	1978-1984

Larry Gaultney	DuPont	1998-2001
Roland Gehman	President, MGS, Inc.	1971-1976
John R. Graham	Quality Control Engineer, Caterpillar, Inc.	1990-1992
Kenneth J. Guffey	Applications Engineer, FABRAL, Inc.	1987-1991
David A. Haines	Product Engineer, FABRAL	1984-1986
Kent H. Hamaker	Merck & Company, Inc.	2010-2012
John H. Hamilton	Marketing Planning Mgr, Agricultural/Industrial Division, International Harvester Co	1974-1979
Melvin J. Happe	Vice-President, Engineering, Sperry New Holland	1976-1981
C. Gene Haugh	Virginia State University	2002
Dennis R. Heldman	Executive Vice-President, National Food Processors Association	1986-1991
Larry M. Hixon	Fluid Energy Aljet	1995-1997
Robert J. Hoffman	Plant Manager, Ralston Purina Company	1984-1986
Kenneth Hoover	Cargill-Nutrena	1995
William J. Howard	Executive Engineer, Ford Tractor Operations	1985-1987
Carl A. Johnson	Perdue Farms, Inc.	1995-2000
Thomas O. Johnstone	Director, Product Services, FABRAL	1979-1982
William T. Kennedy III	Vice President, Engineering, Sperry New Holland	1984-1986
Barry Kintzer	USDA-NRCS	1997-2002
W. Hosea Latshaw	USDA-NRCS	2009-2015
Dale Lehman	Section Head, Greenhorne & O'Mara, Inc.	1987-1988
Dale Lehman	URS	2004-2009
Feng Li	Merck & Company	2008-2010
Kelly (Collins) Lindow	Center for Watershed Protection	2011-2013
Michael Lorenz	Kling Architects, Engineers & Interior Designers	2008-2014
Mike Macheck	GVM, Inc.	1998-2002
C. Patrick Maggi	Cannon Instrument Company	2004-2006
Wayne A. Maley	Agricultural Engineer, U.S. Steel Corp.	1973-1978
Wayne Martenas	CNH Global	2005-2010
Rodney Martin	Director, Farm Systems Research, Agway, Inc.	1970-1975
Keith E. Masser	Farm Manager, Sterman Masser, Inc.	1980-1983
William F. Matson	General Manager, Pennsylvania Rural Electric Association	1972-1977
Samuel McLaughlin	Volvo, Inc.	2011-2013
Susan McNulty Atwater	Rich Foods, Inc.	2004-2009

Donald E. McCandless, Jr.	Water Management Engineer, USDA-SCS	1977-1983
Bhavishya Mittal	Millennium Pharmaceuticals	2005-2007
W. R. Mosig	Product and Manager, FABRAL	1983-1984
John C. Nye	University of Delaware	1997-2000
L. A. Parrott	President, McDowell Manufacturing Co.	1971-1976
Gerald E. Rehkugler	Associate Dean, College of Engineering, Cornell University	1989-1994
Allan R. Rider	Vice-President Engineering, Ford-New Holland	1986-1991
Timothy R. Royer	Timber Tech Engineering, Inc.	1992-1995 1997
Terry Thomas Ruch	USDA-NRCS	1995-1997
Jay V. Rush	President, York Farm Credit	1992-1994
John C. Sager	Agricultural Research Engineer, NASA	1991-1996
Luther S. Singley	Executive Vice President and General Manager, West Penn Power Company	1977-1979
Kenneth E. Smith	Executive Engineer, Ford-Holland, Inc.	1991-1996
Vaughn B. Staller	Manager, Agricultural Division, American Home Foods, Chef Boy-Ar-Dee	1977-1983
Larry E. Stewart	Chairman, Department of Agricultural Engineering, University of Maryland	1992-1994
Girish Subramaniam	Fluor Daniel Company	1997-2002
Jeffrey L. Suhr	Group Leader, Greenhorne & O'Mara, Inc.	1989-1991
Jordana Langiotti Swank	Hershey Foods	2008-2014
Paul O. Swartz	Director, Soil and Water Conservation, DER	1986-1988
Rosalie Tarris	Hershey Chocolate	1995-2001
Lloyd E. Thomas	Construction Engineer, USDA-SCS	1984-1986 1992-1994
Beth Wagner	Caterpillar, Inc.	1998-2002
Robert A. Wagstaff	Vice President, Engineering, Sperry New Holland	1983-1984
Kenneth Wedel	Naval Sea Systems Command	2009-2015
Stanley A. Weeks	Manager Energy Utilization, Agway Research Center	1987-1991
Robert D. Wismer	Manager, Product Technology, Deere, and Company Technical Center	1979-1984
Robert G. Yeck	Staff Scientist, Soil, Water, and Air Sciences, USDA	1974-1979

Appendix 7

Outstanding Alums

The Department of Agricultural and Biological Engineering participates in both the College of Agricultural Sciences and the College of Engineering Outstanding Alumni programs. These programs honor graduates of the colleges who have made outstanding contributions to their professions and society and are nominated by the departments.

E. E. Finney (M.S. Ag E '61) College of Engineering; Outstanding Engineering Alumnus. March 21, 1985

K. H. Norris (B.S. Ag E '42) College of Engineering; Outstanding Engineering Alumnus. April 4, 1986.

R. P. Gehman (B.S. Ag E '59) College of Engineering; Outstanding Engineering Alumnus. March 18, 1988.

K. H. Norris (B.S. Ag E '42) Penn State University Alumni Fellow. September 29, 1988.

John N. Walker (B.S. Ag E '51 & M.S. Ag E '58) College of Engineering; Outstanding Alumnus. March 23, 1990.

Lloyd E. Thomas (B.S. Ag E '61) College of Engineering; Outstanding Alumnus. March 22, 1991.

Donald Snyder (B.S. Ag E '57) College of Engineering; Outstanding Alumnus. 1992.

David H. Bucher (B.S. Ag E '57 & M.S. Ag E '62) College of Engineering; Outstanding Alumnus. 1993.

John C. Sager (B.S. Ag E '64 & M.S. Ag E '70 & Ph.D. Ag E '73) College of Engineering; Outstanding Alumnus. 1995.

Perry H. Ballek (B.S. Ag M '69) College of Agricultural Sciences; Outstanding Alumnus. 1995.

Larry M. Hixon (B.S. Ag E '66 & M.S. Ag E '67) College of Engineering; Outstanding Alumnus. 1996.

Joseph C. Hurlburt (B.S. Ag E '61) College of Engineering; Outstanding Alumnus. 1997.

William J. Bowers (B.S. Ag E '69) College of Agricultural Sciences; Outstanding Alumnus. 1999.

Donald L. Henninger (B.S. Ag M '70) College of Agricultural Sciences; Outstanding Alumnus. 2001.

C. Gene Haugh (B.S. Ag E '58) College of Engineering; Outstanding Alumnus. 2002.

Adesoji O. Adelaja (B.S. Ag M '78) College of Agricultural Sciences; Outstanding Alumnus. 2002.

Kenneth E. Smith (B.S. Ag E '67) College of Agricultural Sciences; Outstanding Alumnus. 2004.

Michael R. Lorenz (B.S. Ag E '75 & M.S. Ag E '77) College of Engineering; Outstanding Alumnus. 2006.

Wayne M. Bogovich (B.S. Ag E '80) College of Agricultural Sciences; Outstanding Alumnus. 2006.

Earnest U. Gingrich (B.S. Ag E '53) College of Agricultural Sciences; Outstanding Alumnus. 2007.

Keith E. Masser (B.S. Ag E '73) College of Agricultural Sciences; Outstanding Alumnus. 2008.

George E. Logue (B.S. Ag E '51) College of Agricultural Sciences; Outstanding Alumnus. 2009.

Wayne B. Martenas (B.S. Ag E '74) College of Engineering; Outstanding Alumnus. 2010.

Lynn A. Dietrich (B.S. Ag E '73) College of Agricultural Sciences; Outstanding Alumnus. 2010.

Renfu Lu (Ph.D. Ag E '90) College of Agricultural Sciences; Outstanding Alumnus. 2011.

Yanbin Li (Ph.D. Ag E '89) College of Engineering; Outstanding Alumnus, 2012.

David C. Curtis, (B.S. Ag E '72) College of Agricultural Sciences; Outstanding Alumnus, 2012

Appendix 8

Outstanding Recent Alums

The Outstanding Recent Alumni award was established in 2000 to recognize outstanding alumni who have graduated within the last ten years and provide opportunities for faculty, staff, and students to interact with them. Honorees have distinguished themselves through significant career advancement and diverse service to their communities.

James R. Day (B.S. Ag M '91) College of Agricultural Sciences; Outstanding Recent Alumnus. September 7, 2001.

Richard R. Hissong (B.S. ASMT '93) College of Agricultural Sciences; Outstanding Recent Alumnus. October 25, 2002.

David Elkin (B.S. Ag E '93) College of Agricultural Sciences; Outstanding Recent Alumnus. October 24, 2003.

Thomas H. D'Alfonso (Ph.D. ABE '94) College of Agricultural Sciences; Outstanding Recent Alumnus. October 11, 2005.

Brent Leatherman (B.S. Ag E '96) College of Agricultural Sciences; Outstanding Recent Alumnus. November 3, 2006.

Steve B. Taylor (Ph.D. Engineering '85) College of Agricultural Sciences; Outstanding Recent Alumnus. October 19, 2007.

Larry L. Hoover (B.S. Ag E '96 & M.S. ABE '98) College of Agricultural Sciences; Outstanding Recent Alumnus. November 7, 2008.

Appendix 9

Engineers Initiated into Penn State Omicron Chapter of Alpha Epsilon

* = honorary

1970	Edward A. Blakeslee Michael F. Brugger William L. Everett Philip J. Ehrhart Albert R. Jarrett Barry L. Kintzer Mahesh Kumar William M. Miller Frank W. Peikert* David S. Ross John C. Sager James R. Wilson	Keith E. Masser Gary D. Matson Thomas R. McCarty Eugene N. Miller Robert E. Naugle Emmanuel I. Odigboh John Pero Sverker P. E. Persson* Jack T. Purdy Marshall L. Quade Terance W. Repine Albert J. Wolfkill	
1971	Robert A. Aldrich* Lynn E. Herbst Joseph J. Lehman Nuri N. Mohsenin* Donald O. Norman Charles G. Perkins Morris E. Schroeder* Samuel E. Wehr Swarnapuri P. Yayathi George E. Ziegler	1974	Raymond D. Boyer Lynn A. Deitrich Paul E. Dietz William M. Elliot James V. Husted Richard A. Keppeler* Glenn M. Kimmel Harold E. Myers John S. Weller
1972	Thomas G. Bubenheim David C. Curtis George W. Hawkins Gerand M. Hillegas Ernesto P. Lozada Earl A. Myers* Suresh D. Sawart William O. Stewart Jack N. Walter Oran J. Weaver Alan D. Wood Emil C. Wunz	1975	Eric S. George Larry D. Hall Neal D. Hallee Gerald M. Heistand Barron L. Hetherington John W. Heyler Dale R. Hollinger Walter H. Latshaw Dean R. Leech John G. Lutz Joseph F. Marcin Wayne B. Martenas Blaine J. Masemore Charles T. Morrow* David P. Mummert Leslie H. Parmele* Nathan Rosenzweig James G. Schenck
1973	Albert M. Best* Richard L. Byler Robert L. Carper George H. Diener David G. Lutz		

1976	Howard D. Bartlett*	David S. Dum
	Blaine K. Delaney	Fouad M. Hamdi
	Franklin A. Oellig	William L. Kjelgaard*
	Ramesh Pall	Mark E. Niewig
	Gary Rimmey	Russell E. Raney
	Alan C. Rotz	Timothy M. Skergan
	John M. Sciford	Lodovico Spinabelli
	Kallak Sial	Paul C. Sweetwood
	Djoko Suharto	Stephen L. Weise
	Kurt Walker	
1977	Kevin Beaver	1981 Badruddin Badrashi
	Michael Bedia	David C. Beppler*
	Fred A. Fox	Steven M. Charles
	Amnon Manor	Janice E. Corle
	Jitendra Mittal	Ashis K. Datta
	Kermit Q. Stephenson*	Kyle F. Dresden
	Peter J. Vanderstappen	John B. Einfalt
1978	Javier Arce	A. R. Grout*
	James E. Biddle	Michael J. Hills
	Betty L. Brockett	Fernando J. Leon
	Cynthia L. David	Mark C. Mummert
	Randy F. Greaser	Larry M. Muzzelo
	Timothy P. Hoover	Cindy A. Petters
	Gary L. Kelso	Philip E. Risser
	Stephen T. Mahan	David O. Roe
	Ausmus S. Marburger*	Robert E. Scheideman
	Joseph McCurdy*	Randolf L. Whisler
	Royann J. Petrell	
	Jeffrey J. Postal	1982 Paul M. Anderson*
	Chris M. Rosenbaum	Kenneth R. Brockett
	Barry R. Skiles	Lyle S. Fisher
	Majorie J. Snider	Frank M. Kislan
	Thomas R. Stahlnecker	Harvey B. Manbeck*
1979	Eileen Fabian	Timothy Matechek
	Jonathan Garcie	Michael R. Null
	Roland Gehman*	Jeffrey R. Phillips
	Mark Kern	Michael R. Raney
	Robert Laughner	Abolghasem Shahbazi
	Sam McLaughlin	Dennis P. Smith
	Jim Schuler	Nancy L. Smith
	Karl Snyder	Edward W. Stas
	N. H. Wooding*	Jeffrey L. Suhr
1980	Harold E. Brosius	Joseph M. Zulovich
	Robert L. Doneker	
	Donald R. Daum*	1983 Edmond H. Albright
		Nels C. Bergstrom
		Glyn R. Boone
		James W. Fairchild

	Robert E. Graves*	Daniel E. Line
	Kenneth J. Guffey	Virendra M. Puri*
	Sidney L. Hull	Thomas Steen
	Douglas P. Ingle	Ronald L. Welling
	Steven R. Johnson	
	Ann M. Kyper	1987 Robin L. Firestone
	Dale A. Lehman	James W. Hilton*
	Vincent D. McHenry	Robin M. Kaufman
	Mark D. Myers	Louis A. Kopczyk
	Edgar G. Murakami	Yanbin Li
	Luis R. Perez	Steven C. McCoy
	Arthur H. Reede, Jr.	Terri T. Thomas
	Jon P. Schultz	David F. Troxell
	Mark D. Shaw*	Bradley W. Wright
	Terry L. Starr	Qiang Zhang
	Scott Q. Turn	
	Mark W. Zuber	1988 Randall G. Bock
1984	Andrew L. Blank	Larry K. Brannaka
	David E. Braun	Larry S. Engle
	Frederick L. Charles	Dwayne M. McGrody
	Harold J. Dubensky	Roy F. Stevenson
	Peggy S. Duffy	Timothy S. Stombaugh
	Jeffrey A. Friend	Donald R. Whitenight
	Jere W. Grube	Paul D. Robillard*
	Gregory D. Jennings	
	Kurt F. Martin	1989 Robin C. Brandt
	Karen M. Mancl*	Wade W. Chamberlain
	Rory A. Miller	Renfu Lu
	Edward F. Orris	Cecilia Partsch
	Patrick O. Richie	Henry L. Seidel
	Gary V. Snyder	Girish J. Subramaniam
	Brian Stoltzfus	Michael J. Weiland
	Patrick M. Wood	
1985	William J. Hutzel	1990 Edelberto Alcairo
	James F. Kjelgaard	Rite F. Blough
	Aaron N. Lepro	Donald L. Brough
	Dennis J. Murphy*	Krista L. Cessna
	Richard J. O'Donnell	Joel L. Cuello
	Leo F. Petrokonis	Paul H. Heinemann*
	Brian L. Roy	Leon W. Heisey
	Richard M. Smucker	Ronaldo G. Maghirang
1986	Edward J. Baranski	Lester O. Pordesimo
	Timothy J. Bowser	Ahmad Tabatabaifar
	Herschel A. Elliott*	Yang Tao
		Zubin Varghese
		1991 Ramaswamy Anantheswaran*
		Lewton A. Deichert

	Mark F. Field Mark O. Gardner Eric D. Lowe	Ray Witmer, Jr Min Zhang
1992	Kevin Brannan Crile Doscher Brian W. Engle Sunil Kamath Valdis J. Krumins Yansheng Liu Ragang Qi Holly Shoener Philip Squires Liuming Zhou	1996 Sajid Alavi Nathan M. Anderson Jeffrey Brown Bethany A. Elkin Amy L. Kaleita Ali B. Koc Vincent D. LaCross Brian Leib Joseph A. Millen Matthew C. Newton Thomas Owino Joel R. Peterson Vilayannur S. Radhakrishnan Aaron Stephens Roderick Thomas John T. Tyson Zhijie Wang Archie L. Williams
1993	Laurel Cisko Thomas D'Alfonso Tomas Fajardo Jerrold Grosh Niranjan Pathare Christine Rutherford K. P. Sandeep Douglas Schaufler Kevin Smith Cheryl Vorhauer	1998 Michele Aukerman Michael Blose Sarah Bowen Linchang Huang Carl Johnson Chad Keating Sarah LaBance Jordana Langiotti William Marazzo Bhavishya Mittal David Newman Mark Swank Barrett Vaughan Rebecca Wargo Scott Wolf Susan Wood Troy Young
1994	Neylor Calasans Daniel E. Ciolkosz Shawn P. Duffy Handan Erturk Daniel Hindman Larry Hoover K. G. Karthikeyan Konrad R. Kerr Jeannie Leggett Feng Li Liu Li Tianxiang Lin Beth A. Lundmark Stephen R. Messier Devlina Mukherjee Timothy Riegel James P. Shedlauskas Kanwaljith Singh Anand Premdeep Singh Dhanoa Donald Smith M. S. Srinivasan Dirk Wahanik	1999 Kirk E. Barton Ali Demirci* Julia C. DeNardo Pamela Kayetta Shankar Radhakrishnan Rob Strobl Ben Wisniewski

2000	Matthew Brubaker Cho Byoung-Kwan Remegio Confessor Lula Ghebremichael Margaret Gitau Eric Greenwalt Todd Huber Judson Long Ranjan Rakesh Heather Schaetzle Walter Schneider Robert Shannon* Jason Sperry Dhal Sushant Stephen Walker	Nil Ozer* Thunyarat Pongtharangkul Gregory Stricker Michael Vassallo
		2004 Mark Bechara Kelly Collins Joshua Eipper Patrick L. Henry Matthew Lawrence Changying Li Tan Meesook H. Oz Ozden Lindsay A. Peters Thomas L. Richard* Alexandra Srebro
2001	David Bidelsbach Jesse Burow Autumn Hawke (Long) Kathiravan Krishnamurthy Sheri Lamphere Michael Reiner Nadia Sabeh Ratna R. Sharma Eric Steigman Michael Sword Pingjun Tang Nathan S. Watts Jeffrey Werner	Jennine B. Terrill Erik M. Vranich Juan Zhao
		2005 Mark C. Baker Robert Brown Richard M. Forney Michael R. Kreider Todd J. Miserendino Michael Q. Nassry Haiyu Ren Farzaneh Rezaei Kevin B. Spangler Eric D. White
2002	Michael A. Brown Deniz Cekmecelioglu Bryce Figgore Megan Hamilton Nitin Khandelwal Ramazan Kizil Shaowei Liu Diana Maimone Christina Pepple Erica Petre Ennis Veale Bradley J. Wagner Xinsheng Xie Guoshun Zhang	Patrick J. Woolcock
		2007 William Brooks Douglas K. Brownell Qin Chen Reuben J. Dise Christian Fulkman Justin Hall Anjani K. Jha Nene Meltem Keklik Niharika Mishra Manolya Eser Oner Timothy Peters Jarad A. Puvak Dawn M. Sedorovich Natalie Shewski Scott Shore Jena Smolko
2003	Katherine Bialka Jonathan Channell S. Matthew March	

	John W. Stratton Marlyse Williams Haijun (Daniel) Wu	2010	Seth Bomgardner Candace Boretzky Alex Devaux Christopher Ferry Jason Hegedus Joseph Herbstritt Daniel Hofstetter Megan Marshall* Howard Salis* Stella M. Sendagi Scott Strobel Ross Sundin
2008	Jeffrey M. Catchmark* Kuan-Chen Cheng Keith L. Hodge Benjamin Kemmerer Jude Liu* Andrew D. McLean Sara A. Pace Matthew Wagner	2011	Curtis R. Covelli Duygu Ercan Gregory T. Fasick Collin B. Julius Andrew Neal Carly Wackerman Mohammad S. Zamil
2009	Sarah Adams Gulten Izmirlioglu Michael D. McKay Dustin Shearer Pamela Smith Serena Wang		

Appendix 10

TAE Graduates

2004	Ardry, Tom Brandt, Kevin Gummo, David Hinish, Kent McCrea, Matt Myers, Bill Schwartz, Adam	2008	Condur, Steve Michael, Carl Richards, Mark
2005	Mauger, Wes Moyer, Matt Smith, Robert	2009	Cowden, Dillon Unger, Rick
2006	Diamond, Paul Lupini, Derek Rhoads, Dustin Stitt, Jason	2010	Avolia, Sam Bigelow, Wayne Byler, Luke Wellar, Kyle
2007	Bartlett, Brad Ruhl, Mark Saltzman, Randy Ulmer, Matt Wilkins, Andrew	2011	Delbaugh, Luke Frankenburger, Dustin Grice, Brent Haas, Derrick Hawn, James Smith, Christopher

