

**PROFESSIONAL RESUMÉ OF ACCOMPLISHMENTS**

**CARL J. BERN**

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## CURRICULUM VITAE

### 1. PERSONAL DATA

NAME: **CARL J. BERN**

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Iowa State University cjbern@iastate.edu  
Ames, IA 50010 515-292-1219 (home)

DATE OF BIRTH: 02/27/40

CITIZENSHIP: USA

APPOINTMENT: (50% appointment) Teaching 30%, Research 10%, Service 10%

PROFESSIONAL ENGINEERING REGISTRATION: 8679PE (Iowa, Agricultural)

### 2. EDUCATION

Ph.D.	Major: Agricultural Engineering Minor: Mechanical Engineering	Iowa State University	1973
M.S.	Agricultural Engineering	University of Nebraska	1964
B.S.	Agricultural Engineering	University of Nebraska	1963

### 3. ACADEMIC EXPERIENCE

ORIGINAL APPOINTMENT DATE: 09/67

START DATE	END DATE	TITLE	ORGANIZATION/ ADDRESS
07 02	Present	University Professor	Iowa State University, Ames, IA
07 82	07 02	Professor	Iowa State University, Ames, IA
07 76	07 82	Associate Professor	Iowa State University, Ames, IA
09 73	07 76	Assistant Professor	Iowa State University, Ames, IA
09 68	09 73	Instructor	Iowa State University, Ames, IA
09 67	09 68	Half-time Grad. Teach. Asst.	Iowa State University, Ames, IA
07 64	07 67	Instructor	Lynam Agric. College, Stann Creek, Belize
02 63	06 64	Half-time Grad. Res. Asst.	University of Nebraska, Lincoln, NE

#### 4. HONORS AND AWARDS

YEAR	HONORARY NAME OR AWARD
2011	ASABE Student Branch Faculty Member of the Year
2005	National Food and Energy Council Electric Technology Award, American Society of Agricultural and Biological Engineers
2005	ISU Foundation award for Outstanding Achievement in Teaching
2004	Massey-Ferguson gold medal award "For advancement of engineering knowledge and practice in agriculture" American Society of Agricultural Engineers
2002	Named a University Professor at Iowa State University
2001	ISU Honors Program Award for Excellence in Honors Mentoring and Advising
2001	Member of the Year, Iowa Section, American Society of Agricultural Engineers
1998	Member of the Year, Mid-Central Conference, American Society of Agricultural Engineers
1996, 94, 88, 79	Elected outstanding professor in Agricultural Engineering by Student Branch
1993	Elected a Fellow of the American Society of Agricultural Engineers
1992	ASAE Blue Ribbon Award (shared with 5 others) Agricultural and Biosystems Engineering Recruitment Brochure
1992	ASAE Blue Ribbon Award (shared with 5 others) Agricultural Systems Technology Recruitment Brochure
1991	Special Service Award, Mid-Central Conference, Am. Soc. of Agric. Engrs.
1989	Iowa Legislature \$1000 Teaching Excellence Award, College of Engineering
1985	Superior Engineering Teacher Award, College of Engineering
1972	Alpha Epsilon (agricultural engineering)
1963	Gamma Sigma Delta (agriculture)
1963	Sigma Xi (science)
1961	Pi Mu Epsilon (mathematics)
1960	Sigma Tau (engineering)

### 5. TEACHING ACTIVITIES

Year	Course	Title	Term	Credits	Number	Time	%	Student Credit Hours
2011	TSM 699	Research	S,SS,F	Var.	3	Arr.	100	81
	AE 363	Agri-Indst appl of elec pwr	F	4	27	(3-2)	75	
	AE 699 F	Research	S,SS,F	Var.	2	Arr.	100	
	AE 469/569	Gain Preservation, Processing	S	3	20	(2-3)	100	
	Total							141
2010	AE 363	Agri-Indstl appl of elec pwr	F	4	48	(3-2)	75	144
	AE699F	Research	S,SS, F/10	Var.	2	Arr.	100	
	TSM 363	Electricity for ag and industry	S	4	36	(3-3)	50	144
	AE469/569	Grain preservation, processing	S	3	20	(2-3)	100	60
	Total							348
2009	TSM 416	Capstone II	F	2	29	(1-0)	100	58
	AE 363	Agri-Indstl appl of elec pwr	F	4	38	(3-2)	75	114
	AE699F	Research	S,SS, F/09	Var.	2	Arr.	100	
	TSM 415	Capstone I	S	2	29	(1-2)	100	58
	AE469/569	Grain preservation, processing	S	3	17	(2-3)	100	51
Total							281	
2008	TSM 416	Capstone II	F	2	14	(1-0)	100	28
	TSM 363	Electricity for ag and industry	F	4	46	(3-3)	50	92
	AE363	Agri-indstrl appl of elec pwr	F	4	38	(3-2)	75	114
	AE699F	Research	S, SS, F/08	Var.	1	arr.	100	10
	TSM 415	Capstone I	S	2	14	(1-2)	100	28
	AE469/569	Grain preservation, processing	S	3	17	(2-3)	100	51
Total							323	
2007	TSM 363	Electricity for ag and industry	S	4	47	(3-3)	50	94
	AE363	Agri-indstrl appl of elec pwr	F	4	31	(3-2)	75	93
	AE699F	Research	S07/SS07	Var.	1	arr.	90, 80	51
	AE469/569	Grain preservation, processing	S	3	17	(2-3)	100	51
Total							243	
2006	TSM	Electric power for ag & industry	F	4	50	(3-3)	83	166
	AE363	Agri-indstrl appl of elec pwr	F	4	28	(3-2)	75	84
	AE699F	Research	S05/F05	Var.	1	arr.	100	3
	AE490R	Independent Study	S	3	1	arr.	100	3
	AE469/569	Grain preservation, processing	S	3	17	(2-3)	100	51
	AST362	Preservation of grain quality	S	1	31	(3-0)	75	23
	AST 460	Agricultural electronics	S	2	16	(1-2)	50	16
Total							346	
2005	AST360	Electric power for ag	F	3	58	(2-3)	83	144
	AE363	Agri-indstrl appl of elec pwr	F	4	28	(3-2)	75	84
	AE699F	Research	S05/F05	Var.	1	arr.	100	3
	AE490R	Independent Study	S	3	1	arr.	100	3
	AE469/569	Grain Preservation, processing	S	3	17	(2-3)	100	51

	AST362	Preservation of grain quality	S		1	31	(3-0)	75	23
	AST460	Agricultural electronics	S		2	16	(1-2)	50	16
								Total 324	
2004	AST360	Electric power for ag	F		3	42	(2-3)	80	101
	AE363	Agri-indstrl appl of elec pwr	F		4	34	(3-2)	75	102
	AE699F	Research	S04/F04	Var.		1	arr.	100	6
	AE490R	Independent Study	S		3	1	arr.	100	3
	AE469/569	Grain Preservation, processing	S		3	15	(2-3)	100	45
	AST362	Preservation of grain quality	S		1	31	(3-0)	100	31
								Total 288	
2003	AST360	Electric power for ag	F		3	33	(2-3)	100	99
	AE363	Agri-indstrl appl of elec pwr	F		4	32	(3-2)	75	96
	AE699F	Research	SS03/F02	Var.		1	arr.	100	1
	AE490R	Independent Study	F		3	1	arr.	100	3
	AE469/569	Grain Preservation, processing	S		3	10	(2-3)	100	30
	AST362	Preservation of grain quality	S		1	29	(0-3)	100	29
	AST490S	Independent Study	S		2	1	arr.	100	2
								Total 260	
2002	AST360	Electric power for ag	F		3	25	(2-3)	100	75
	AE363	Agri-indstrl appl of elec pwr	F		4	25	(3-2)	75	75
	AE699F	Research	S02/SS02/F02	Var.		6	arr.	100	17
	AE490R	Independent Study	F	1,3		2	arr.	100	4
	AE469/569	Grain Preservation, processing	S		3	15	(2-3)	100	45
	AST460	Agricultural electronics	S		2	14	(1-2)	100	28
	AST490G	Independent Study	F		3	1	arr.	100	3
								Total 247	
2001	AST360	Electric power for ag	F		3	29	(2-3)	75	65
	AE363	Agri-indstrl appl of elec pwr	F		4	25	(3-2)	75	75
	AE699F	Research	S00/F00/SS00	Var.		7	arr.	100	19
	AE490R	Independent Study	F		2	1	arr.	50	1
	AE469/569	Grain Preservation, processing	S		3	11	(2-3)	100	33
	AST464	Grain Process Operations	S		2	16	(1-2)	100	32
	AST403	Senior Seminar	F		1	41	(1-0)	100	41
								Total 266	
2000	AST360	Electric power for ag	F		3	28	(2-3)	67	56
	AE363	Agri-indstrl appl of elec pwr	F		4	27	(3-2)	75	81
	AE699F	Research	F00/S00	Var.		3	arr.	100	7
	AE490R	Independent Study	F		1	1	arr.	100	1
	AST362	Maintaining qualit of grain	S		3	44	(2-3)	67	88
	AST460	Agricultural Electronics	S		2	16	(1-2)	100	32
	AST290G	Independent Study	F		2	1	arr.	100	2
								Total 267	

1999	AST360	Electric power for ag	F	3	26	(2-3)	67	52
	AE363	Agri-indstrl appl of elec pwr	F	4	14	(3-2)	75	42
	AE699R	Research	S98/SS98/F98	Var.	3	arr.	100	7
	AST464	Grain Process Operations	S	2	9	(1-3)	100	18
	AE699F	Research	F99/S99	Var.	1	arr.	100	6
	AE490H	Honors Independent Study	F	3,2	2	arr.	100	10
	AST362	Maintaining quality of grain	S	3	43	(2-3)	67	86
	AST462	Postharvest grain technology	S	2	11	arr.	100	22
							Total	243

**6. UNDERGRADUATE STUDENT PROJECTS ADVISED or CO-ADVISED or MENTORED by CARL BERN**

YEAR	NAME	TITLE	MCR <sup>1</sup>	NW <sup>2</sup>	NO <sup>3</sup>	JP <sup>4</sup>	NSF <sup>5</sup>	SWER <sup>6</sup>	SWEN <sup>7</sup>
2011	Nathan Schuler	Mixing wet distillers grain in beef rations	-	4	-	-	-	-	-
2010	Matthew Koehler	Deterioration control of maize By high concentration ozone	-	6	-	-	-	-	-
2010	Nathan Schuler	Mixing wet distillers grain in beef rations	-	4	-	-	-	-	-
2010	Jacob Baker	The use of phosphorus sorption isotherms to project vegetative treatment area life expectancy	2	1	3	-	-	-	-
2009	Gayle Bishop	Evaluation of laboratory biochemical methane potentials as a predictor of anaerobic dairy manure digestive biogas production	2	3	1	-	-	-	-
2009	John Stinn	Modification of the Iowa State University vegetative treatment area model	1	7	-	-	-	-	-
2008	Ben Rottinghaus	Burning distillers grain pellets in corn-fueled furnaces	2	2	1	-	-	-	-
2008	Laura Pepple	Validation and calibration of open-channel flow measurement devices	1	4	-	-	-	-	-
2007	Jacob Bolson	Temperature stability of Zeltex AccuHarvest near-infrared spectroscopy units	2	2	2	-	-	-	-
2007	Brian Whitman	Dairy windrow composting infiltration/rainfall simulator	3	3	3	-	-	-	-

2007	Ross Muhlbauer	Low cost method for monitoring flow from a vegetative treatment system	1	1	1	-	-	-	-
2006	Karl Broer	Modeling sorbent canister breakthrough time of toxins to <i>R rubrum</i> in producer gas	-	1?	1	-	-	-	-

2006	Kyle Baumgartner	Spontaneous heating of corn gluten feed pellets	3	3?	3	-	-	-	-
2006	Matt Klein	Spatial and temporal variability of soil water content in a Central Iowa agricultural field	2	-	-	-	-	-	-
2006	Ross Muhlbauer	Development and testing of a fan monitoring system using induction operated current switches	1	-	-	-	-	-	-
2005	Pat Murphy	Solid-state fermentation of kenaf core fiber for pretreatment and bioconversion	2	2	3	-	-	-	-
2005	Bart Derocher	Effects of long-term storage on soybean quality	-	4	-	-	-	-	-
2004	Jeremy Hanson	Corn dry matter loss: Direct versus CO <sub>2</sub> measurement	2	1	1	-	-	-	-
2004	Kyle Baumgartner	Evaluation of anhydrous ammonia distribution manifolds	1	2	2	-	-	-	-
2003	Amber Hashe Widman	Model of testing greenhouse ventilation logic	2	1	1	-	-	-	-
2003	Dan Johnson	Effects of drying air temperature on corn storability	4	4	-	-	-	-	-
2003	Vince Stout	Swine methane emissions using the tracer gas ratio method	3	2	2	-	-	-	-
2002	Nicholas Krueger	Gravity separation of commodity corn	3	2	1	X	-	-	-
2002	Tim VanPelt	Biomass densification	1	1	2	-	-	-	-
2002	Justin Bonnema	Quantification of plant growth on composted subsoils	2	4	-	-	-	-	-
2001	Chris Melvin	Effects of harvest moisture and combine type on the mechanical damage of corn	-	3	1	-	-	-	-
2000	Jasmine Zingler Bootman	Storability of 16 corn hybrids	2	3	3	-	-	1	2
2000	Holly Norman	Rocks entering combines: The problem and possible solutions	6	9	-	-	-	-	-
1999	Jay Fallick	Coupling soybean cyst nematode damage to CROPGROW-Soybeans	-	2	3	-	-	-	-
1999	Brian Gelder	Root length density and diameter of	-	3	1	-	-	-	-

		three grass species							
1998	Howard Butler	EMI prediction of soil clay content	4	2	3	-	-	-	-
1998	Robert Cogdill	Modeling effects of splits on soybean deterioration	2	3	1	-	-	-	-
1997	Andrew Hageman	Effects of splits on soybean deterioration	1	1	3	-	-	-	-
1996	David Van Utrecht	Soybean mechanical damage detection	1	2	1	X	-	-	-
1996	John Kihonge	Development of a global positioning system tutorial	4	-	-	-	-	-	-
1996	Karen Keppler	Evaluation of neural network architectures: A case study	2	4 (3-way tie)	-	-	-	-	-
1995	Todd VanHal	Optimizing the operation of a <i>quasi ad-libitum</i> electronic feeding system for gestating sows in loose housing	1	2	1	-	X	-	-
1995	Kevin Gaul <sup>8</sup>	Computer control of a continuous baffle slot inlet	2	1	2	-	-	-	-
1994	Eric B. Smith (Cornell U. student)	Subsoil strain comparison for combine, tractor, and grain cart traffic	-	1	1	-	X	-	-
1994	Mark Oberreuter	Efficiencies and airflow characteristics of sidewall air inlets	1	2	2	-	X	-	-
1994	Kurt Rosentrater	Using ionization to remove dust from swine facilities	2	4	-	-	X	-	-
1994	Kim Olsen	Accessibility of tractors by youth as determined by anthropometric data	-	-	-	-	X	1	2
1993	Amy VanDyke	Mechanical damage to soybean seed during bag handling	-	-	-	-	X	1	1
1993	Steven M. Siegel	Bestman: A best management practice research database application	-	1	-*	-	X	-	-
1993	Douglas J. Wiering	Soil strain at five tractor ground speeds	1	2	3	-	-	-	-
1992	Tim H. Kaldenberg	Comparison of actual and predicted crop residue covers	3	2	2 (tie)	X	-	-	-
1992	Roger E. Meyer	Tractor noise level exposures for bean-bar riders	4	1	--*	X	X	-	-
1992	Brain J. Fischer	Effects of brush machine adjustments on physical properties of crambe and oats	1 (tie)	7	--	-	X	-	-
1992	Mark Devore	NUMAXS: A nutrient management expert system	5	12	--	-	X	-	-
1991	Gerald Kinney	Soil strain under three tractor configurations	4	1 (tie)	1	X	X	-	-
1991	Margaret Herzog	A portable meter to assess leaf	2	4	--	-	X	-	-



chlorophyll distributions in maize									
1991	Aryln Wilcox	Soil strain caused by multiple passes of agricultural tractors	3	6	--	-	X	-	-
1991	Darin Roth	Soil microtopography effects on disk-harrow energy requirements	1	7	--	-	-	-	-
1991	Jim Ryken	Farmer satisfaction with hay and forage equipment in Allamakee and Mahaska Counties in Iowa	-	-	-	X	X	-	-
1990	Daron Head	Airflow resistance of bin floor supporting fine material from corn	2	4	-	-	-	-	-
1990	Steve Roth	Farm bill compliance: A case feasibility study	1	7	-	-	-	-	-
1990	Chris Bowersox	Ethanol production: A student laboratory exercise	-	8	-	-	-	-	-
1989	Dave Meester	Analysis and modifications plot combine pneumatic grain conveyor	1 (tie)	2	2	X	-	-	-
1989	Ann M. Liebenow	An analysis of interrill erodibility of 18 western	2	4	-	-	-	-	-
1989	Steven R. Roth	Effects of tillage system on fuel and time requirements	3	6	-	-	-	-	-
1989	Matthew L. Philips	Correlation of five-day biochemical oxygen demand to chemical oxygen demand	4	7	-	-	-	-	-
1988	Thomas Kellen	Modification of a rotary airlock feeder to reduce corn breakage	1	1	*	-	-	-	-
1988	Jeff L. Lubben	IFSDB (The iconic field simulator and data-base)	3	5	-	-	-	-	-
1988	Juan Saibis	A comparison of hand and mechanical picking of cotton in Columbia	4	9	-	-	-	-	-
1987	David D. Metzger	Effect of moisture content on popcorn popping volume for oil and hot-air popping	3	2	2	X	-	-	-
1987	Roger Kay	Horizontal and vertical airflow resistance of shelled corn as influenced by bulk density	2	3	1	X	-	-	-
1987	Bruce E. Hawkins	Residue management export system	1	1	3	-	-	-	-
1986	Howard Jon Lyon	Characteristics of a modified Wisconsin breakage tester	1	2	2	X	-	-	-
1986	Kevin Balster	Development of a data logger system for use in a motor test lab	2	13	-	-	-	-	-
1986	Larry Michel	Corn storage monitor analysis	3	9	-	-	-	-	-
1985	Mitchell J. Hushak	Characteristics of a revolving tube vertical screw conveyor	1	1	1	-	-	-	-
1985	Steven Schmitt	Application of a programmable	3	7	-	-	-	-	-

		controller to a farm grain system							
1984	Alan D. Gaul	Variation of physical properties in gravity separated soybeans	2	1	2	X	-	-	-
1984	Lydon J. Schroeder	Estimating earthwork volumes using a microcomputer digitizer	3	7	-	-	-	-	-
1984	Alan Jacobsen	Performance of electronic moisture meters in oil-variety sunflower seeds	1	3	3	-	-	-	-
1983	James Korslund	Design of an electronic alarm and control system for a grain elevator	1	2	1	-	-	-	-
1983	Daniel Wisner	Solar walls for hog confinement structures	-	-	-	-	-	-	-
1982	Jonathon Luttenegger	Effects of refrigeration on moisture content determination by electric moisture meters on corn	1	1	2	-	-	-	-
1981	Mike Lentz	Fireplace logs from corn stalks	-	-	-	-	-	-	-
1981	Jeff Krieger	Moisture content determination by electronic moisture meters on mixtures of wet and dry corn	1	1	3	-	-	-	-
1980	David Israel	Distribution of fines in auger-stirred shelled corn	-	2	2	-	-	-	-
1980	Carl D. Sitzmann	Factors affecting the accuracy of air-oven moisture measurement for corn	2	6	-	-	-	-	-
1979	Michael Maiwald	Measurements of bulk density and static pressure during low-temperature corn drying	1	7	-	-	-	-	-
1978	Jill Randall	Airflow resistance characteristics of cracked soybeans as influenced by bulk density	1	1	*	-	-	-	-
1977	Roger Growth	A comparison of low-temperature electric corn drying systems for Central Iowa	3	-	-	-	-	-	-
1976	Charles Sukup	A comparison of methods used for determining grain moisture content in continuous-flow	1	4	-	-	-	-	-
1975	Bob Wemer	The effect of roasting time on required grinding energy for shelled corn	1	3	3	-	-	-	-

\*could not compete

<sup>1</sup>Placing in ASABE Mid-Central Region Student Paper Competition.

<sup>2</sup>Placing in ASABE K. K. Barnes Student Paper written competition. Top three are invited to present in the Oral Runoff.

<sup>3</sup>Placing in ASAE K. K. Barnes Oral Run-Off Competition at annual ASAE International Conference.

<sup>4</sup>Published as refereed journal article.

<sup>5</sup>Student did work as participant in NSF Research Experiences program.

<sup>6</sup>Society of Women Engineers Student Technical Presentation regional competition.

<sup>7</sup>Society of Women Engineers Student Technical Presentation national oral competition.

<sup>8</sup>Kurt Rosentrater was co-author of original report.

## 7. GRADUATE STUDENTS ADVISED (OR CO-ADVISED)

<u>Name</u>	<u>Degree</u>	<u>Graduation</u>	<u>Thesis or Creative Component</u>
Bujang, Ahmad	PhD	2015	Not decided
Yakubu, Ali	PhD	2012	Maize storage system for East Africa
Bujang, Ahmad Safuan	MS	2011	Biomass drying
Yakubu, Ali	MS	2009	Non-chemical on-farm hermetic maize storage in East Africa
White, Steve(w/Hans van Leeuwen)	MS	2007	Preserving high-moisture corn by means of ozone treatment
Murphy, Pat (w/Ken Moore)	MS	2006	Determination of iodoform and manure application rates in biomass ensilage conversion system for corn stover
Thakur, Maitri(w/ C. Hurburgh)	MS	2006	Quality and nutritional value of US soybeans and soybean meal
Arora, Gaurav	MS	2003	Effects of high temperature air exposure on corn value for wet milling
Hein, Ruth	M of Ag	2002	Evaluation of soybean seed reclaimed through use of a Harads two-bell sorter
Chittrar, Sinora (w/ Dr. Singh)	MS	2002	Quantifying corn storability by use of CO <sub>2</sub> sensitive gel
Kabomo, Nelson	MS	2002	Effects of long term, low moisture, high temperature storage on corn quality
Al-Mahasneh, Majdi (w/S. Birrell)	Ph.D.	2001	Radiofrequency spectral measurements for determination of corn mechanical damage.

Rosentrater, Kurt (w/ T. Richard)	Ph.D.	2001	Utilizing corn masa byproduct stream for livestock feed
Katopo, Herman	MS	1998	Effects of ultra-high hydrostatic pressure on properties and structure of starch
Zagrabenyevev, Dimitro	MS	1998	Effects of variety of deterioration of soybeans during storage
Rukunudin, Ibni	Ph.D.	1997	Deterioration of soybeans during storage
Dugba, Prince	MS	1994	Preservative effects on Iprodione on shelled corn
Olson, Jeff	M of Ag	1993	Multicropping corn, black walnut and red oak in southeast Iowa
Porath, Larry	M of Ag	1993	The relationship between a soybean's size and its protein and oil content
Aljinovic, Slaven	MS	1993	Effects of Rovral fungicide on high-moisture corn
Al-Yahya, Sulaiman	Ph.D.	1991	Fungicide treatment of high moisture corn
Raeker, Maide Ozbay (co with Larry Johnson)	MS	1990	Preservation of high-moisture corn by propionate treatment
Easton, Dean	M of Ag	1989	Soil density and corn yield with controlled traffic
Al-Yahya, Sulaiman	MS	1989	Aspirator separation of corn-fines mixtures
Wemer, Robert	M of Ag	1988	Grain bin airflow estimator
Yang, Xinzhan	MS	1987	Airflow resistance of fine material removed from corn
Dutta, Pradip (co with Charles Hurburgh)	Ph.D.	1986	Effects of grain moisture, drying methods and variety on breakage susceptibility of shelled corn as measured by the Wisconsin breakage tester
Wilcke, William	Ph.D.	1985	Natural-air corn drying with stirring
Hemeda, Medhat	Ph.D.	1983	Effect of corn variety, mechanical damage and drying temperature on electronic moisture meters
Fon, Din-Sue	Ph.D.	1983	Management strategies for corn production and drying systems

Grama, Srinivas	MS	1982	Airflow resistance of mixtures of shelled corn and fines
Nguyen, Vu	Ph.D.	1982	Breakage susceptibility of blended corn
Sukup, Charles	MS	1982	Development of a biomass furnace for grain drying
Flores, Rolando	MS	1981	Preservation of high-moisture corn by microbiological activity
Hurburgh, Charles	MS	1980	Sampling command soybeans for foreign material
Wilcke, William	MS	1980	Corn drying with an automatically controlled solar-electric low-temperature system
Anderson, Michael	MS	1979	Solar-assisted heat pump for corn drying and space heating

## 7. GRANTS AND CONTRACTS

Title: Reducing Postharvest Grain Losses in developing Countries  
Investigators: Manjit Misra(PI) ~ 10 others, Carl Bern  
Agency: NSF  
Award: ~ \$3 million  
Status: **Proposed 7/1/12-6/30/ 17 Not Funded**

Title: Defining oxygen demand of bruchids in edible beans  
Investigators: Carl Bern, Tom Brumm  
Agency: Center for Sustainable Rural Livelihoods  
Award: \$2500  
Status: **Proposed 6/15/10-6/15/11 Funded**

Title: Commercial application of an ultra energy efficient industrial drying technology  
Investigators: Steve Shivers, Carl Bern (PI at ISU),  
Agency: Iowa Power Fund  
Award: \$900,000 (ISU: \$20,000)  
Status: **Proposed 2/1/10-2/1/12 Funded, but company went broke.**

Title: Mixing Wet Distillers Grain Feed Rations  
Investigators: Carl Bern(PI), Tom Brumm, Dan Loy, Darryl Strobehn  
Agency: On-Farm Research and Demonstration Grant Program.  
Award: \$7,000  
Status: **Proposed 7/1/09-6/30/11 Funded**

Title: Drying corn cobs and corn stover in an *Advanced Trailers* peanut drying trailer  
Investigators: Carl Bern(PI), Tom Brumm, Brian Steward

Agency       Advanced Trailers  
Award:        \$24,263  
Status:       **Proposed 10/1/09-3/31/11   Funded**

Title:         Grassroots model to increase diversity among engineers and technicians in the  
                  bioenergy workforce  
Investigators: Carl Bern(PI), Sunday Tim, Ramesh Kanwar, LeQuetia Ancar  
Agency       USDA-CSREES  
Award:        \$72,000  
Status:       **Proposed 1/30/09-2/1/2014   Funded**

Title:         Hermetic storage of maize in Sub-Saharan Africa  
Investigators: Carl Bern (PI)  
Agency       Buffet Foundation  
Award:        Not finalized  
Status:       **3/1/10   In discussion**

Title:         Hermetic control if insects in maize stored on farms in Northeast Tanzania  
Investigators: Carl Bern (PI), Tom Brumm, Gerald Klonglan  
Agency       USAID  
Award:        \$252,003  
Status:       **Proposed 10/1/09-3/31/11 Not reviewed (arrived 14 minutes late)**

Title:         Biological drying and/or torrifaction of corn stover bales  
Investigators: Stuart Birrell (PI), Carl Bern, Robert Brown  
Agency       Archer-Daniels-Midland  
Award:        \$89,635  
Status:       **Proposed 2/1/09-12/31/09   Funded**

Title:         System Integration of Biofuel Production from Sweet Sorghum  
Investigators: Ken Moore(PI), Carl Bern, Pat Murphy, Rob Anex, Buddhi Lamsal, Maria Salas-  
Fernandez  
Agency       DOE  
Award:        \$1,500,000  
Status:       **Not funded**

Title:         Sweet sorghum as a year-round biorefinery feedstock  
Investigators: Carl Bern(PI), Lloyd Lerew, Pat Murphy  
Agency       DOE  
Award:        \$1,750,000  
Status:       **Pending (preproposal)**

Title: Design and implementation of an autonomous on-line safety engineering curriculum module for engineering seniors  
Investigators: Nir Keren(PI) Carl Bern, Alok Bhandari, Jay Harmon  
Agency: Miller Foundation  
Award: \$34,030  
Status: **Funded** : 7/1/08-1/10/2010

Title: Feasibility of high-efficiency, low-cost drying of slurries and sludge producing a combustible by-product  
Investigators: Carl Bern (PI) Pat Murphy  
Agency: Tri-Phase Drying Technologies  
Award: \$27,700  
Status: **Proposed 5/1/09-12/31/09 Not funded**

Title: BRR Group Iowa Power Fund Proposal ( Deterioration of cobs)  
Investigators: Stuart Birrell PI, Carl Bern investigators  
Agency: Iowa Power Fund  
Award: ~\$2,000,000  
Status: **Proposed 7/1/08-6/30/09 Not Funded**

Title: CCUR Iowa Power Fund Proposal  
Investigators: Larry Johnson PI ,Carl Bern, Tom Brumm investigators  
Agency: Iowa Power Fund  
Award: \$2,000,000 (\$105,000 for Bern & Brumm)  
Status: **Proposed 7/1/08-6/30/09 Not funded**

Title: Reducing energy required for ethanol production by increased use of wet distillers grain  
Investigators: Carl Bern, Tom Brumm Co-PIs  
Agency: 2009 Federal Initiatives Request to DOE  
Award: \$1,000,000  
Status: **Pending Not funded**

Title: Demonstrating drying of grain, distillers grain, and industrial products with a simple, innovative, and extremely efficient heat recovery system  
Investigators: Steve Shivvers, Lloyd Lerew, Carl Bern (ISU PI) ,(ISU Co-PI) Michael Pate  
Agency: USDA-SBIR  
Award: \$500,000 (ISU: \$62,429)  
Status: **Funded 9/1/07-8/31/09**

Title: Investigators: Carl Bern, Tom Brumm (Co- PIs)  
Agency: Hawkeye Renewables  
Award: \$202,000  
Status: **Proposed 7/1/08-6/30/10 Not funded**

Title: Preserving high-moisture corn with ozone  
Investigators: Carl J. Bern (PI), Hans Van Leeuwen (co-PI)  
Agency: Iowa Energy Center  
Award: \$59,535  
Status: **Proposed 7/1/05-9/30/07 Funded**

Title: Measuring CO2 evolved from deteriorating cereal grains with a CO2-sensitive gel  
Investigators: Carl Bern  
Agency: Woods End Inc  
Award: \$5,000  
Status: **Proposed 2/1/06-6/30/07 Funded**

Title: Preventing spontaneous combustion in stored corn gluten feed pellets  
Investigators: Carl Bern  
Agency: Northwest Silos Ltd., Belfast, Northern Ireland  
Award: \$5,000  
Status: **Proposed 3/15/05 – 3/15/07 Funded**

Title: Innovative energy-conserving dryer for grain and chemicals  
Investigators: Steve Shivvers, Lloyd Lerew, Carl Bern  
Agency: DOE  
Award: \$300,000 (ISU subcontract)  
Status: **Proposed 7/1/06- 6/30/08 Not Funded**

Title: Storing wet distillers grain  
Investigators: Carl Bern, Tom Brumm (Co- PIs)  
Agency: UNI Recycling and Reuse technology Transfer Center  
Award: \$30,000  
Status: **Proposed 7/1/07-6/31/09 Not Funded**

Title: Storage deterioration of corn cobs and CCM  
Investigators: Carl Bern, Rob Anex (Co-PIs)  
Agency: Broin Industries  
Award: \$239,661  
Status: **Propose 7/1/07-6/30/09 Not Funded**

Title: Storage life of distillers grain  
Investigators: Carl Bern, Tom Brumm  
Agency : Iowa Energy Center  
Award: \$55,500  
Status: **Proposed 7/1/07-6/30/09 Not Funded**

Title: Effects of oil application on corn and soybeans  
Investigators: Carl Bern, Earl Hammond  
Agency: PENRECO



Award: \$65,000  
Status: **Not funded**

Title: Feasibility of heat exchanger designs to preheat grain using dryer exhaust air  
Investigators: Lloyd Lerew, Steve Shivvers, Carl Bern  
Agency: USDA-SBIR  
Award: \$80,000 (ISU subcontract \$7,500)  
Status: **Funded 5/1/05-12/31/05**

Title: Grassroots Model to Increase Diversity in Agriculture  
Investigators: C. J. Bern (PI, succeeding Jenni Briggs), R. S. Kanwar  
Agency: USDA  
Award: \$59,461  
Status: **Funded 02/01/2001 to 01/31/2006**

Title: Undergraduate research experiences in agricultural and biosystems engineering.  
Investigators: Carl Bern (PI), Stuart Birrell (co-PI), 11 other ABE faculty  
Agency: NSF  
Award: \$472,460  
Status: Not funded

Title: Development of an energy-saving grain drying invention  
Investigators: Lloyd Lerew, Steve, Shivvers, Carl Bern  
Agency: DOE  
Award: \$140,000 (\$50,000 ISU)  
Status: Funded 1/31/2002 – 3/01/2004

Title: Quality changes of specialty corn varieties during long-term, low moisture storage.  
Investigators: Carl Bern (PI), Jenni Briggs  
Agency: The Andersons Foundation  
Award: \$30,000  
Status: **Funded Oct 1, 1999-Sept 30, 2001**

Title: Feasibility of hot-air preheating conveyor and heat recovery systems to improve grain dryer performance.  
Investigators: Lloyd Lerew, Steve Shivvers, Carl Bern  
Agency: USDA-SBIR  
Award: \$70,000  
Status: **Funded 9/1/00-3/30/01**

Title: Predicting the energy effects of tempering on corn drying  
Investigators: Lloyd Lerew (PI), Carl Bern, Steve Shivvers  
Agency: USDA-SBIR  
Award: \$64,962 (USDA) + \$38,000 CATD  
Status: **Funded 6/99 - 8/00**

Title: Impact of endosperm lipids on dry milling and extrusion of dried and stored corn.  
Investigators: Pam White (PI), Koushik Seetharaman, Carl Bern  
Agency: USDA-CSREES  
Award: \$241,790  
Status: **Funded 12/2000 – 12/2003**

Title: Development of livestock feed products from corn masa by product slurries  
Investigators: T. L. Richard (project leader), Carl J. Bern, A. H. Trenkle  
Agency: Biotechnology Byproducts Consortium  
Award: \$44,150  
Status: **Funded 6/98 – 6/2000**

Title: Carbon dioxide production of corn exposed to changing environmental conditions  
Investigator: Carl J. Bern, W. F. Wilcke (co-PIs)  
Agency: USDA-ARS (Subcontract with University of Minnesota)  
Award: \$35,000  
Status: Funded October 1, 1996 through September 30, 1998.

Title: Biomaterials lab development  
Investigator: Carl J. Bern  
Agency: Archer-Daniels-Midland Foundation  
Award: \$50,000  
Status: Funded November 14, 1995 through November 14, 1999.

Title: Maintaining quality of stored soybeans  
Investigators: C. J. Bern (Project Leader), Lawrence Johnson, Pamela White  
Agency: Iowa Soybean Promotion Board  
Award: \$37,980  
Status: Funded April 1, 1995 through March 31, 1997

Title: Research apprenticeship for minority H.S. students  
Investigator: Carl J. Bern  
Agency: USDA-CSRS  
Award: \$5,000  
Status: Funded June 13 thru July 31, 1994

Title: Instrumentation for biomaterials lab  
Investigators: C.J. Bern (Project leader), S.J. Hoff (co-PI), S.J. Marley, M.K. Misra, R. Kanwar, S. Tim, C. Anderson, D. Mangold, D. Bundy  
Agency: National Science Foundation  
Award: \$67,702 (plus match by ISU)  
Status: Funded 8/20/93-2/20/97

Title: Preservation of high-moisture corn with Rovral fungicide  
Investigators: C.J. Bern (Project Leader), M.K. Misra, L.D. VanFossen  
Agency: Rhone-Poulenc Ag Co.  
Award: \$38,000  
Status: Funded 10/31/91-10/31/93

Title: Undergraduate research experiences in agricultural and food engineering  
Investigators: C.J. Bern (Project Leader), J. Gilley (co-PI), R.S. Kanwar, M.K. Misra, S.J. Marley, D.C. Erbach, V.A. Bekkum, M.M. Boyd  
Agency: National Science Foundation  
Award: \$171,856  
Status: Funded 4/15/90-10/1/94

Title: Carbon dioxide evolution of fungicide-treated corn  
Investigators: C.J. Bern (Project Leader), M.K. Misra, D.C. McGee

Agency: Rhone-Poulenc Ag Co.  
Award: \$25,000  
Status: Funded 6/19/90-6/30/92

Title: Application of soybean oil and fungicide to improve storability of corn  
Investigators: M.K. Misra (Project Leader), D.C. McGee, C.J. Bern  
Agency: Rhone-Poulenc Ag Co.  
Award: \$150,000  
Status: Funded 7/1/86-6/30/93

Title: Production and utilization of propionic acid from fermentation of corn  
Investigators: L. Johnson (Project Leader), C.J. Bern, C.E. Glatz  
Agency: Iowa Corn Promotion Board  
Award: \$35,600  
Status: Funded 7/1/87-6/30/89

Title: Biosynthesis of propionic acid  
Investigators: B. Glatz(Project Leader), P.A. Pattee, C.J. Bern, L. Johnson, and C.E. Glatz  
Agency: Iowa State University Biotechnology Council  
Amount: \$60,000  
Status: Funded 12/1/86 - 6/30/89

Title: Properties of fine material removed from corn  
Investigators: C.J. Bern (Project Leader) and C.R. Hurburgh  
Agency: Anderson Research Fund  
Amount: \$5000  
Status: Funded 10/1/86 - 9/30/88

DATE	PROJECT
1981-85	Drying corn using biomass fuel. \$72,000. USDA. Principal investigator.
1980-82	Natural-air corn drying with stirring. \$10,900. Iowa Corn Promotion Board. Co-principal investigator.
1975-82	Solar energy for grain drying. \$110,000. USDA. Principal Investigator.
1979-81	Airflow resistance of mixture of shelled corn and fines. \$9,578. Iowa Corn Promotion Board. Principal investigator.
1979-80	Development of a solar rice dryer for tropical conditions. \$2,800. World Food Institute. Principal investigator.

## 9. TECHNICAL PUBLICATIONS

### Refereed Journal Articles(59 )

**Bern, C. J.,** Pate, M. B., Shivvers, S. 2011. Operating characteristics of a high-efficiency pilot scale corn distillers grain dryer. *Applied Engineering in Agriculture* 27(6):993-996.

- Keren, Nir, S. A. Freeman, J. D. Harmon, **C. J. Bern**. 2011. Testing the effectiveness of an on-line safety module for engineering students. *International Journal of Engineering Education*. 27(2);284-291.
- Yakubu, A. S., **C. J. Bern**, J.R. Coats, T. B. Bailey. 2011. Hermetic on-farm storage for maize weevil control in East Africa. *African Journal of Agricultural Research* 6(14):3311-3319.
- White, S. D., P. T. Murphy, **C. J. Bern**, J. (Hans) van Leeuwen. 2010. Controlling deterioration of high-moisture maize with ozone treatment. *Journal of Stored Product Research*. 46(1):7-12.
- Bern, Carl**, Tom Brumm. 2009. Test weight deception. ISU Extension PMR 1005 (Peer reviewed)
- Murphy, P. T., K. J. Moore, T. L. Richard, **C. J. Bern**, T. J. Brumm. 2007. Use of swine manure to improve solid-state fermentation in an integrated storage and conversion system for corn stover. *Trans of the ASABE* 50(5): 1901-1906.
- Bennet, A. S., **C. J. Bern**, T. L. Richard, R. P. Anex. 2007. Corn grain drying using corn stover combustion and CHP systems. *Trans of the ASABE* 50(6): 1-10.
- Krueger, N. A., **C. J. Bern**, M. K. Misra, K. M. Adam. 2007. Gravity table sorting of commodity corn. *Appl. Engr.in Ag.* 23(3): 319-325.
- Murphy, P. T., K. J. Moore, T. L. Richard, and **C. J. Bern**. 2007. Enzyme enhanced solid-state fermentation of kenaf core fiber for storage and pretreatment. *Bioresource Technology* 98:3106-3111.
- Chitrakar, S., **C. J. Bern**, D. S. Shrestha. 2006. Quantifying corn deterioration due to fungal growth by use of CO<sub>2</sub>-sensitive gel. *Appl. Engr. in Ag.* 22(1): 81-86.
- Rosentrater, K. A., T. L. Richard, C. J. Bern, R. A. Flores. 2005. Small-scale extrusion of corn masa byproducts. *Cereal Chemistry* 82(4):436-446.
- Rukunudin, I.H., C. J. Bern, M. K. Misra, T. B. Bailey. 2004. Carbon dioxide evolution from fresh and preserved soybeans. *Trans of the ASAE* 47(3): 827-833.
- Rosentrater, K. A., T. L. Richard, C. J. Bern, R. A. Flores. 2003. Economic simulation modeling of reprocessing alternatives for corn masa byproducts. *Resources Conservation and Recycling*. 39(4):341-367.
- Bern, C. J., L. J. Steele, R. V. Morey. 2002. Shelled corn CO<sub>2</sub> evolution and storage time for 0.5% dry matter loss. *Applied Engr. in Ag.* 18(6):703-706.
- Steenhoek, L. W., M. K. Misra, C. R. Hurburgh, C. J. Bern. Implementing a computer vision system for corn kernel damage evaluation. *Appl. Engr. in Ag.* 17(2): 235-240. 2001.
- Van Utrecht, D., C. J. Bern, I. H. Rukunudin. Soybean mechanical damage detection. *Appl. Engr. In Ag.* 16(2):137-141. 2000.
- Rosentrater, K.A., R.A. Flores, T.L. Richard, C.J. Bern. Physical and nutritional properties of corn masa by-product streams. *Appl. Engr. in Ag.* 15(5) 515-523. 1999.

- Bern, C.J. Preserving the Iowa corn crop: Energy use and CO<sub>2</sub> release. *Applied Engr in Agriculture* 14(3): 293-299, 1998.
- Rukunudin, I.H., P.J. White, C.J. Bern, T.B. Bailey. A modified method for determining free fatty acids from small soybean oil sample sizes. *Journal of the Am Oil Chemists Soc.* 75(5): 563-568, 1998.
- Dugba, P.N., C.J. Bern, I.H. Rukunudin, M.K. Misra, T.B. Bailey. Preservative effects of iprodione on shelled corn. *Transactions of the ASAE* 39(5):1751-1756, 1996.
- Aljinovic, Slaven, C.J. Bern, P.N. Dugba, M.K. Misra. Carbon dioxide evolution from high-moisture shelled corn treated with Iprodione. *Journal of Food Protection* 58(6):673-677, 1995.
- Panigrahi, S., M. K. Misra, C. J. Bern, S. J. Marley. Background segmentation and dimensional measurement of corn germplasm. *Transactions of the ASAE* 38(1):291-297, 1995.
- Al-Yahya, S. A., C. J. Bern, M. K. Misra. Simulation of ambient air drying of fungicide-treated high-moisture corn in Iowa. *Transactions of the ASAE* 37(5): 1555-1560, 1994.
- Ryken, Jim D., S. J. Marley, C. J. Bern. Farmer satisfaction with hay and forage equipment in Allamakee and Mahaska Counties in Iowa. *Applied Engr. in Agr.* 10(5): 653-658, 1994.
- Meyer, R.E., C.V. Schwab, C.J. Bern. Tractor noise exposure levels for bean bar riders. *Transactions of the ASAE:* 36(4): 1049-1056, 1993.
- Al-Yahya, S.A., C.J. Bern, M.K. Misra, T.B. Bailey. Carbon dioxide evolution of fungicide-treated high-moisture corn. *Transactions of the ASAE:* 3(5): 1014-1017, 1993.
- Bern, C.J., C.R. Hurburgh. Fine material in corn: A review and analysis. *Transactions of the ASAE:* 35(6): 1859-1867, 1992.
- Meester, D., C.J. Bern, D.W. Mangold. Injector feeder for plot combine pneumatic conveyor. *Applied Engr. in Agr.* 8(4): 483-487, 1992.
- Kinney, G.R., D.C. Erbach, C.J. Bern, Soil strain under three tractor configurations. *Transactions of the ASAE* 35(4): 1135-1139, 1992.
- Raeker, Maide, C.J. Bern, L.A. Johnson, B.A. Glatz. Preservation of high moisture corn by various propionate treatments. *Cereal Chemistry.* 69(1) 66-69, 1992.
- Al-Yahya, Sulaiman, C.J. Bern, C.R. Hurburgh, Jr.. Aspirator separation of corn-fines mixtures. *Transactions of the ASAE* 34(3): 944-949, 1991.
- Risse, J., M.K. Misra, A.D. Knapp, C.J. Bern. Conditioning shrivelled seed: Part 1. Variation in physical properties. *Transactions of the ASAE* 34(2): 481-486, 1991.
- Risse, J., M.K. Misra, A.D. Knapp, C.J. Bern. Conditioning shrivelled seed: Part 2. Correlation of physiological properties with physical properties. *Transactions of the ASAE* 34(2): 487-491, 1991.
- Yang, X., C.J. Bern, C.R. Hurburgh, Jr. Airflow resistance of cleanings removed from corn. *Trans. of ASAE* 33(4):1299-1302. 1990.

- Yang, X., C.J. Bern, D.L. Williams. Bin-drying shelled corn with natural air in Beijing, China. *Agricultural Mechanization in Asia, Africa, and Latin America*. 21(3):45-49. 1990.
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- Hurburgh, Jr., C.R., C.J. Bern, T.J. Brumm. Efficiency of rotary grain cleaners in dry corn. *Trans. of ASAE* 32(6):2073-2077. 1989.
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Hurburgh, C. R., Jr., and C. J. Bern. Sampling corn and soybeans: I. Probing methods. *Trans. of the ASAE* 26(3): 930-934. 1983.

Bern, C. J., M. E. Anderson, W. F. Wilcke, and C. R. Hurburgh, Jr. Auger stirring wet and dry corn - airflow resistance and bulk density effects. *Trans. of ASAE* 25(1):217-220. 1982.

Bern, C.J., M.E. Anderson, M.J. Monson, W.F. Wilcke. Corn drying with solar-dried desiccant. *Proceedings of ASAE National Energy Symposium, Kansas City, MO, Sept. 29 - Oct. 1, 1980.* 1981.

Kranzler, G.A., C.J. Bern, G.L. Kline, M.E. Anderson. Grain drying with supplemental solar heat. *Trans. of ASAE* 23(1):214-217. 1980.

Bern, C.J., L.F. Charity. Disturbance effects of auger-stirring corn. *Trans. of ASAE* 21(2):371-374. 1978.

Soderholm, L.H. and C.J. Bern. Solid-state relays for control. *Trans. of ASAE* 19(3):596-600. 1976.

#### Refereed Extension Publications

Bern, C. J. , T. J. Brumm. 2009. Test weight deception. *Iowa State University Extension Bulletin PMR* 1005. October.

#### Non-Refereed Articles

##### Conference papers

Bern, C.J., A Yakubu, T. Brumm. 2011. Hermetic maize storage systems for subsistence farmers. *Proceedings of XXXIV CIOSTA CIGR V Conference 2011, University of Natural Resources and Applied Life Sciences, Vienna, Austria, June 29-July 1.*

Bujang, A. S., C. J. Bern, T. Brumm, J. C. Askey. 2011. Drying biomass in an *Advanced Trailer* peanut dryer. *ASABE MidCentral conference paper no. MC 11-11. St Joseph, Missouri March 4-5.*

Yakubu, A. S., C. J. Bern, T. J. Brumm. 2011. Verification of the Iowa State hermetic storage weevil mortality prediction procedure. *ASABE MidCentral conference paper no. MC 11-24. St Joseph, Missouri March 4-5.*

Yakubu, A., C. Bern, J. Coats, T. Bailey. 2010. Non-chemical on-farm hermetic maize storage in East Africa. *Proceedings of the 10<sup>th</sup> international working conference on stored product protection. Estoril, Portugal 27 June to 2 July.*

Yakubu, A. S., C. J. Bern, T. J. Brumm. 2010. Non-chemical control of weevils in maize stored on farms in East Africa. *ASABE MidCentral conference paper no. MC 10-306. St Joseph, Missouri April 9-10.*

Bujang, A. S., C. J. Bern. 2010. Drying biomass in an *Advanced Trailer* peanut drying trailer. ASABE MidCentral conference paper no. MC 10-301. St Joseph, Missouri April 9-10.

Nyendu, Guevara, T. J. Brumm, C. J. Bern. 2010. Storability of modified wet distillers grain with soluble. ASABE MidCentral conference paper no. MC 10-302. St Joseph, Missouri April 9-10.

Yakubu, Ali, C. J. Bern. 2008. On farm maize storage in East Africa. ASABE MidCentral Conference, Lincoln, Nebraska, April 4-5.

Bern, C. J., M. B. Pate, S. Shivvers. 2008. Operating characteristics of a high-efficiency pilot-scale corn distillers grain dryer. ASABE MidCentral Conference, Lincoln, Nebraska, April 4-5.

Bern, C. J., M. B. Pate, S. Shivvers. 2008. Operating characteristics of a high-efficiency pilot-scale corn distillers grain dryer. ASABE paper No. 084884

Bern, C. J., M. B. Pate, S. Shivvers. 2008. Operating characteristics of a high-efficiency pilot-scale corn distillers grain dryer. Euro AGENG/2008, Hersonissos, Crete, Greece, June 23-25.

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Bern, C. J., N. A. Krueger, M. K. Misra, K. M. Adam. 2005. Removal of harvest and dryer-damaged maize kernels by use of a gravity table. For presentation at the IV International Scientific and Practical Conference on Ecology and Agricultural Machinery. St Petersburg, Russia. May 25-26.

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Bern, C.J., M.E. Anderson and W.F. Wilcke. Solar corn drying with a combination desiccant-low temperature system. Proceedings of 1978 Solar Grain Drying Conference, West Lafayette, IN, May 2-3, 1978. 1978.

Williams, D.L. and C.J. Bern. Estimating throughput of enclosed-tube screw conveyors for shelled corn. ASAE Paper No. MC-78-807. American Society of Agricultural Engineers, St. Joseph, MI. 1978.

Bern, C.J., and F. Roth. Reinsulation of sidewalls with cellulosic fiber. ASAE Paper No. 78-4542. American Society of Agricultural Engineers, St. Joseph, MI. 1978.

Kalbasi, A., V. Gayanilo, C.J. Bern. Effects of high and low temperature drying on mold contamination and viability of corn. ASAE Paper No. MC-78-803. American Society of Agricultural Engineers, St. Joseph, MI. 1978.

Hurburgh, C.R., C.J. Bern and G.R. Van Ee. Stirring applied to low-temperature corn drying. ASAE Paper No. 3519. American Society of Agricultural Engineers, St. Joseph, MI. 1978.

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Bern, C.J. and F. Roth. Blowing cellulose fiber into sidewalls containing batts of insulation. Proceeding of Building Energy Management Conference, Ames, Iowa, Oct. 30-31, 1978. 1978.

Bern, C.J. and M.E. Anderson. Low-temperature corn drying with a solar-assisted heat pump. ASAE Paper No. 77-3010. American Society of Agricultural Engineers, St. Joseph, MI. 1977.

Bern, C.J. and M.E. Anderson. Solar assisted heat pump for low-temperature corn drying. Proceedings of Solar-Drying Conference, University of Illinois, January 11-12, 1977. 1977.

Bern, C.J., G. Olsen. Grain moisture content determination. Proceedings of Fourth International Conference on Mechanization of Field Experiments, Iowa State University, July 5-10. 1976.

Bern, C.J. Guidelines for agricultural mechanization curricula--minimum general education requirements. ASAE Paper 76-5506. American Society of Agricultural Engineers, St. Joseph, MI. 1976.

Bern, C.J. Prediction of size reduction energy--a teaching-lab experiment. ASAE Paper MC-75-406. American Society of Agricultural Engineers, St. Joseph, MI. 1975.

Bern, C.J., L.F. Charity. Airflow resistance characteristics corn as influenced by bulk density. ASAE Paper 75-3510. American Society of Agricultural Engineers, St. Joseph, MI. 1975.

Kranzler, G.A., C.J. Bern, and G.L. Kline. Grain drying with supplemental solar heat. Paper No. 75-3001, Annual Meeting, ASAE, Davis, California. 1975.

Bern, Carl J. and Charity, L.F. Development of teaching laboratory for studies of air flow through grain. ASAE Paper MC-71-405. American Society of Agricultural Engineers, St. Joseph, MI. 1971.

## 10. BOOKS

Bern, C.J., D. I. Olsen. 2002. Electricity for agricultural applications. 305 p. Iowa State University Press, Ames, IA.

Bern, C.J., C.R. Hurburgh, T. J. Brumm. 2011. Managing grain after harvest. Photoduplicated text, 502 pages. Agricultural and Biosystems Engineering Department, Iowa State University, Ames, IA. This textbook is revised each year for use in engineering and technology courses.

### Book Chapters

Bern, C. J., H. M. Hanna, W. F. Wilcke. 2008. Harvesting, storing, and post-harvest management of soybeans. In: Soybeans: chemistry, production, processing, and utilization. Eds: L. A. Johnson and P. J. White. AOCS Press, Urbana IL.

Bern, C. J., G. R. Quick, F. L. Herum. 2003. Harvesting and postharvest management. p. 107- 158 in Corn: Chemistry and technology eds: P. J. White and L. A. Johnson. AACC press, Minneapolis.

Bern, C. J., T. J. Brumm. 2003. Moisture content measurement. p. 671 – 675 in Encyclopedia of Agricultural, Food, and Biological Engineering. Marcel Dekker, Inc., NY.

## 11. EXTENSION/OUTREACH ACTIVITIES

Bern, Carl, Tom Brumm. 2009. Test weight deception. ISU Extension PMR 1005 (Peer reviewed)

Wilcke, W.F., C.J. Bern. 1984 Comparing corn drying energy costs. ISU Cooperative Extension Service Publication AE-3025.

73-01 Coordinator of annual Electric Meters and Metering Short Course, Scheman Building, ISU.

## 12. PROFESSIONAL ACTIVITIES

START DATE	END DATE	SOCIETY	MEMBERSHIP TYPE
02 82	01 05	American Society for Engineering Education	MEMBER
06 64		American Soc of Ag and Bio Engineers	FELLOW
		M 153 NFEC Electric Technology Award Chair	2005-2008 2007-2008
		M 112 Massey-Ferguson Gold Medal Chair	2006-2009 2007-2008
		FPE 702 Crop and Feed Processing and Storage, Member	1980-present
		P-412 Professional Ethics Chair	2005-2009
		Vice chair	2003-2005
		Iowa Section Nominating Committee, Chair	2001-02
		Section Chair	2000-01
		Vice Chair, programs	1999-00
01 93	01 02	Council for Agricultural Science and Technology	MEMBER
01-88	01 02	National Association of Colleges and Teachers of Agriculture	MEMBER

## 13. COMMITTEE WORK

10-11	College of Engineering University Professor Committee (chair)
10-11	College of Agriculture and Life Sciences University Professor Committee
09-11	College of Engineering Academic standards Committee
95-11	ABE Promotion and Tenure Committee (chair, 96-97, 98-99, 01-02)

- 73-present     ABE Engineering Curriculum Committee (chair 1995-2009)
- 10-present    College of Engineering Diversity Committee
- 10-present    ABE Diversity Committee (chair 10-present)
- 08-present    ABE Facilities and Safety Committee (chair 08-11)
- 06-present    ABE Awards Committee
- 04-08         College of Agriculture and Life Sciences representative, University Library  
                  Committee
- 94-01         College of Agriculture Honors Committee (chair 1995-96)
- 00-03         College of Agriculture Promotion and Tenure Committee
- 93-96         College of Agriculture Technology Advancement Committee
- 93-96         University Honors Committee (Engineering representative 93-95, Agriculture  
                  representative 95-96)
- 91-94         College of Engineering Curriculum Committee
- 90-96         College of Engineering Honors Committee (chair 1993-95)

#### 14. INTERNATIONAL ACTIVITIES

June 22-July 5, 2011

Toured parts of Poland, Austria, and Czech Republic with Nancy and daughter Susie. Presented this paper:

Bern, C., A Yakubu, T. Brumm. 2011. **Hermetic maize storage systems for subsistence farmers.** Proceedings of XXXIV CIOSTA CIGR V Conference 2011, University of Natural Resources and Applied Life Sciences, Vienna, Austria, June 29-July 1.

May 17-27, 2010

Travelled to Copan State in northwest Honduras with three students from St Thomas Parish in Ames. I worked on corn storage issues and inspected many steel silos used for corn storage on farms. I consulted with Ruben Rodrigues-Corea from the Honduras Department of Agriculture.

June 2-8, 2010

Travelled to Dalian, China to discuss ABE 2 + 2 program with administrators at Dalian Polytechnic University. Ramesh was there also.

June 24-July 10, 2010.

Attended and presented a paper in Estoril, Portugal:



Yakubu, A., C. Bern, J. Coats, T. Bailey. 2010. Non-chemical on-farm hermetic maize storage in East Africa. Proceedings of the 10<sup>th</sup> international working conference on stored product protection. Estoril, Portugal 27 June to 2 July.

Toured Spain by bus from July 3 to July 10, 2010.

October 31-November 7, 2009

Attended conferences and presented papers at conferences on food security and safety at Haryana Agricultural University (Hisar) and at the Central Institute of Agricultural Engineering (Bhopal).

August 8-20, 2009.

Attended and presented paper at World Soybean Research Conference VIII. Beijing, China.

June 23-25, 2008

Attended and presented a paper at AGENG/2008 June 23 – 25 in Hersonissos, Crete, Greece. Toured Greece, the Aegean Islands, and Crete before and after the meeting.

May 21-June 6, 2007

Worked on corn storage issues of subsistence farmers in the village of Shighatini, Tanzania, as part of a team from Bethesda Lutheran Church in Ames.

May 25-26, 2005

Paper presentation:

Bern, C. J., N. A. Krueger, M. K. Misra, K. M. Adam. 2005. Removal of harvest and dryer-damaged maize kernels by use of a gravity table. For presentation at the IV International Scientific and Practical Conference on Ecology and Agricultural Machinery. St Petersburg, Russia. May 25-26.

April 20-26, 2003

Member of USAID-USDA Young Scientist Program Selection Panel, Bucharest, Romania.

November 22-30, 2002

Set up student exchange with Agricultural and Food Engineering Department, University College, Dublin Ireland.

July 2-6, 2000

Paper presentation at European AgEng 2000 meeting, Univ. of Warwick, UK.

October 11-24, 1998

Presentation at 5th International Working Congress on Stored Product Protection, Beijing, China

May 26 - June 10, 1998

BARD research proposal preparation, Volcani Institute, Israel

June 2-8, 1996

Presentation at International Conference on Rational Use of Renewable Energy Sources in Agriculture, Budapest, Hungary

May 20-27, July 24-29, 1995

Member of ISU Agricultural Development Needs Assessment Team in Belize.

Aug 29 - Sept 1, 1994

Presentation at European Ag Eng 94 meeting, Milan, Italy

June 1-4, 1992

Presentation at European Ag Eng 92 meeting, Uppsala, Sweden

July 1964-July 1967

Instructor, Lynam Agricultural College, Stann Creek, Belize