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## William Gibbons Papers

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# William Gibbons Papers

Finding Aid

South Dakota State University Archives and Special Collections

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Brookings, SD 57007

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## Collection Summary

### *Identifier*

UA 53.46

### *Title*

William Gibbons Papers

### *Creator*

Gibbons, William Ray

### *Dates*

1970-2012

### *Extent*

2.0 linear feet [2 Paige boxes], includes photographs, negatives, slides, and transparencies

### *Language*

English

### *Repository*

South Dakota State University Archives and Special Collections, Hilton M. Briggs Library, Brookings, South Dakota

### *Access Note*

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### *Preferred Citation*

*Name of item.* William Gibbons Papers, UA 53.46. South Dakota State University Archives and Special Collections, Hilton M. Briggs Library, Brookings, South Dakota

### *Abstract*

Dr. William Gibbons is an industrial microbiologist and his research interests are in exploiting microbes to develop value added products from biomass and agricultural materials. This has included developing fuels and chemicals from biomass as replacements for petroleum-based products. The collection is composed of materials related to Gibbon's research on developing fuels and chemicals from biomass as replacements for petroleum-based products. Included is article reprints, manuscripts, correspondence, clippings and photographs.

### **Biographical Note**

William Ray (Bill) Gibbons was born on January 5, 1958 in Winner, South Dakota. He graduated from Brookings High School in 1976. He attended South Dakota State University from 1980 to 1987. He obtained a B.S in Microbiology and Chemistry in 1980, a M.S. in Microbiology in 1982, and a Ph.D. in Microbiology and Agronomy in 1987.

In 1987, he began his career as an Assistant Professor in the Biology and Microbiology Department at South Dakota State University. He was promoted to Associate Professor in 1991 and Professor in 1997. He has served as Associate Director of the Center for Bioprocessing Research and Development, Director of the South Dakota Oilseed Initiative, and Interim Director of the South Dakota Agricultural Experiment Station

His research focuses on applied microbiology and biotechnology, specifically in exploiting microbes to develop value added products from biomass and agricultural materials. This included developing fuels and chemicals from biomass as replacements for petroleum-based products. His research activities and leadership roles have included collaborations with regional universities and federal labs, including: South Dakota School of Mines and Technology, North Dakota State University, University of Minnesota, many other universities and the USDA National Center for Agricultural Utilization Research. Gibbons has conducted all of his research within the university environment, always integrating research with teaching.

His honors include: SDSU Microbiology Club Teacher of the Year (1990); Golden Key Honorary Member (2003); College of Agriculture and Biological Sciences Dean's Team award for developing a Center for Excellence in Bioprocessing (2006); College of Agriculture and Biological Sciences Distinguished Researcher of the Year (2007); Gamma Sigma Delta Researcher of the Year, and Pat and Jo Cannon Intellectual Property Commercialization Award (2011 and 2012); and the F.O. Butler Award for Excellence in Research (2014).

## Arrangement

This collection is arranged alphabetically.

## Contents Note

This collection is composed of materials related to Dr. Gibbon's research on developing fuels and chemicals from biomass as replacements for petroleum-based products. The bulk of the collection is article reprints, manuscripts, correspondence, and other material related to articles Gibbons submitted to scholarly journals. The clippings files consist of newspaper and magazine articles about ethanol and ethanol production. The photographs are mainly made up of ethanol and fermentation plants and equipment. Also included are manuscripts of Gibbon's M.S. thesis and Ph.D. dissertation.

## Key Words

- Gibbons, William Ray
- Alcohol as fuel
- Biomass energy
- Ethanol as fuel

## Administration Information

### *Conditions Governing Access*

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### Container List

<b>Box</b>	<b>Folder</b>	<b>Description</b>	<b>Date(s)</b>
1	1	Alcohol Fuel From Fodder Beets: Economic Feasibility of a Small-Scale Plant, South Dakota Agricultural Experiment Station Bulletin B699	1986
1	2	Alcohol Fuels From Farm Crops [30 color slides]	1979-1982, undated
1	3	Alcohol Production Energy Analysis by Scott Stampe	1980
1	4	Alternative Crops for Ethanol Production: Agronomic, Processing, and Economic Considerations	1984
1	5	America Through Renewable Fuels [Power Point Presentations]	2008
1	6	Batch and Continuous Solid-Phase Fermentation of Jerusalem Artichoke Tubers	1988-1989
1	7	Button Mushroom Production in Synthetic Compost Derived From Agricultural Waster	1991
1	22	Cellulosic Ethanol Roundtable: American Coalition for Ethanol, Sioux Falls, South Dakota, May 29, 2008	2008
1	12	Clippings	2003
1	13	Clippings	2004
1	14	Clippings	2005

<b>Box</b>	<b>Folder</b>	<b>Description</b>	<b>Date(s)</b>
1	15	Clippings	2006
1	16	Clippings	2007
1	17	Clippings	2008
1	18	Clippings	2009
1	19	Clippings	2010
1	20	Clippings	2011
1	21	Clippings	2012
1	9	Clippings	1970-1979
1	10	Clippings	1980-1989
1	11	Clippings	1990-1999
1	8	Clippings	undated
1	23	Cofermentation of Sweet Sorghum Juice and Grain for Production of Fuel Ethanol and Distillers' Wet Grain	1988-1989
1	25	Community-Scale Fuel Alcohol: Costs in Production Part 5	1983
1	24	Community-Scale Fuel Alcohol: Costs-in Production Part 2	1983
1	27	Continuous, Farm-Scale, Solid-Phase Fermentation Process for Fuel Ethanol and Protein Feed Production from Fodder Beets	1984
1	26	Contribution of the Ethanol Industry to the Economy of the United States by John M. Urbanchuk	2006
1	28	Corn Utilization and Technology Conference	2004
1	29	Correspondence	1989-2011, undated
1	30	Costs Associated with Producing Alcohol in a Community-Scale Fuel Alcohol Plant	1983
1	31	Data and Calculations for Dobbs, Gibbons, Habash, Westby Fodder Beets Paper	1986-1987, undated
2	30	Decade of Ethanol Production Research at South Dakota State University [Poster Presentation]	1991
1	33	Draft Testimony on Fuel Alcohol Tax Incentives for the Subcommittee on Oversight on Ways and Means U.S. House of Representatives, Sioux Falls, South Dakota, July 9, 1984, by Dr. Thomas L. Dobbs	1984

<b>Box</b>	<b>Folder</b>	<b>Description</b>	<b>Date(s)</b>
1	32	Draft Testimony on Fuel Alcohol Tax Incentives in the State of South Dakota for the South Dakota Legislature Study Committee on Agriculture	1985
1	34	Economic and Technical Conditions for Producing Fuel Alcohol from Fodder Beets: Feasibility Prospects	1987-1988
1	35	Economic Feasibility of Producing Fuel Alcohol from Fodder Beets in a Small-Scale Plant by Mohamed K. Habash	1985
1	36	Economic Feasibility of Small-Scale Fuel Alcohol Production with Corn as the Feedstock by Thomas Dobbs and Randy Hoffman	undated
1	37	Economic Impact of Ethanol Plants in South Dakota by Randall M. Stuefen	2005
1	38	Economic Impact of the Demand for Ethanol by Michael K. Evans	1997
1	39	Economic Prospects for Small-Scale Fuel Alcohol Production by Thomas Dobbs, Randy Hoffman, and Ardelle Lundeen	1984
1	40	Effect of Fodder Beet Cube Size on Ethanol Production via Diffusion Fermentation	1987
1	41	Effect of Pulp pH on Solid Phase Fermentation of Fodder Beets for Fuel Ethanol Production	1986
1	43	Effect of Sodium Meta Bisulfite on Diffusion Fermentation of Fodder Beets for Fuel Ethanol Production	1986-1987
1	42	Effects of Inoculum Size on Solid-Phase Fermentation of Fodder Beets for Fuel Ethanol Production	1986
1	44	Energy Analysis of Small Scale Ethanol Distillation by Scott Stampe	1982
1	45	Energy Balances and Costs of Plant Operation Under Various Conditions	1981-1988, undated
1	46	Energy Consumption of a Farm-Scale Ethanol Distillation System by S. Stampe, R. Alcock, C. Westby, and T. Chisholm	1983
1	47	Energy Crisis Information Compiled by Ag Communications [Bibliography]	1990

<b>Box</b>	<b>Folder</b>	<b>Description</b>	<b>Date(s)</b>
1	48	Equipment Photographs	1982
1	49	Estimating the Net Energy Balance of Corn Ethanol	1989-2002, undated
1	50	Ethanol Production and Fermentation Photographs	undated
1	52	Ethanol Production Energy Analysis by Scott Stampe and Tom Chisholm	1981
1	53	Ethanol, the Alternative Fuel for the Future, Jason Van't Hul Theme No. 4	undated
1	51	Ethanol: Fundamentals of Production From Renewable Feedstocks and Use as a Transportation Fuel by Charles E. Wyman and Norman D. Hinman	1990
1	54	Farm and Forest Produced Alcohol: The Key to Liquid Fuel Independence; A Compendium of Papers Submitted to the Subcommittee on Energy of the Joint Economic Committee, Congress of the United States	1980
1	55	Farm-Scale Production of Fuel Ethanol and Distiller's Wet Grains from Corn and Corn-Whey Mixtures [Gibbons Thesis for Master of Science]	1982
1	56	Farm-Scale Production of Fuel Ethanol and Wet Grain from Corn in Batch Processing	1982
2	31	Fermentation of Corn-Whey Mixtures [Transparent Charts]	undated
2	32	Fermentation Procedures and Flowcharts [Transparencies]	undated
1	57	Fermentation Time, Centrifugation Before Fermentation, Flow Charts Photographs	undated
1	58	Fodder Beet Fermentation Photographs and Graphs	undated
1	59	Fuel Alcohol Plant, Grain Bin and Mill, Plant Laboratory, Fermentation Tanks, Distillation Apparatus, and Geer Centrifuge Photographs	undated
1	60	Fuel Ethanol and Feed Byproduct Production from Fodder Beets Via Solis Phase and Diffusion Fermentation; Plant Science Graduate Seminar, October 18, 1985	1985



<b>Box</b>	<b>Folder</b>	<b>Description</b>	<b>Date(s)</b>
1	61	Fuel Ethanol and High Protein Feed from Corn and Corn-Whey Mixtures in a Farm-Scale Plant	1983
2	33	Fuel Ethanol Production from Conventional Crops [Poster Presentation]	undated
1	62	Fuel Ethanol Research at South Dakota State University	1978-1989
1	63	Fuel Ethanol Update, National Corn Growers Association	1990
1	64	Fuel From Farms: A Guide to Small Scale Ethanol Production	19803
1	65	Graphs of Fodder Beet Size, Potassium Meta Bisulfite, and Sodium Meta Bisulfite Varying with Yeast/Bacterial Population Yield, Time to Maximum bacterial/Yeast Population and Ethanol Concentration Photographs	undated
1	66	Growing Mushroom Poster Display Photographs and Text	undated
1	67	In Search of the Ultimate Energy Source: Back to Square One [Essay 5]	undated
1	68	Intermediate-Scale, Semicontinuous Solid-Phase Fermentation Process for Production of Fuel Ethanol from Sweet Sorghum	1986
1	69	Jerusalem Artichokes (Sunchokes)	1982
1	70	New Horizons for South Dakota Corn by South Dakota Corn Utilization Council	undated
2	1	Phase 1 Tests: 8 and 12 Week Exposure Photographs [NaCL and water; Pekin Stillage; Fermented Pekin Stillage; Winnegabo Stillage]	1996
2	5	Potential Macroeconomic Impacts of an Ethanol Industry in Missouri by Donald L. Van Dyne	1993
2	2	Preventing Contamination During Diffusion Fermentation of Fodder Beet Cubes by pH Control	1986-1988
2	3	Processing Cereal Grains and Whey-Stillage to Fuel Ethanol in a Farm-Scale Plant	1984
2	4	Processing Cereal Grains, Thin Stillage, and Cheese Whey to Fuel Ethanol in a Farm-Scale Plant	1987-1988

<b>Box</b>	<b>Folder</b>	<b>Description</b>	<b>Date(s)</b>
2	6	Semicontinuous Diffusion Fermentation of Fodder Beets for Fuel Ethanol and Cubed Protein Feed Production	1987
2	7	Small-Scale Fuel Alcohol Production from Corn: Economic Feasibility Prospects	1983
2	8	Small-Scale Plant: Costs of Making Fuel Alcohol	1982
2	9	Sodium Meta Bisulfite and pH Tolerance of <i>Pleurotus sajor caju</i> Under Submerged Cultivation	1992
2	10	Solid Phase Fermentation of Fodder Beets for Ethanol Production: Effect of Grind Size	1986
2	14	South Dakota Farm and Home Research, Volume 34, Number 3	1983
2	11	Status of the United States Ethanol Industry	undated
2	12	Summary of Remarks of Eric Vaughn, President, Renewable Fuels Association Before the Senate Committee on Finance, July 17, 1985	1985
2	13	Summary of Second America's Sugar Trade and Ethanol Conference, Miami, Florida, November 12-13, 2007	2007
2	15	Technology and Economics of Commercial Scale Ethanol Production from Fodder Beets [Outline]	1986
2	16	Technology and Economics of Commercial Scale Ethanol Production from Fodder Beets Part 1 [Dissertation for Doctor of Philosophy]	1986
2	17	Technology and Economics of Commercial Scale Ethanol Production from Fodder Beets Part 2 [Dissertation for Doctor of Philosophy]	1986
2	18	Technology and Economics of Commercial Scale Ethanol Production from Fodder Beets Part 3 [Dissertation for Doctor of Philosophy]	1986

<b>Box</b>	<b>Folder</b>	<b>Description</b>	<b>Date(s)</b>
2	19	Technology and Economics of Commercial Scale Ethanol Production from Fodder Beets Part 4 [Dissertation for Doctor of Philosophy]	1986
2	20	Technology and Economics of Ethanol Production from Fodder Beets Via Solid-Phase Fermentation	1988
2	21	Thesis: Additional Information [Outline, Tables, Approvals, Captions for Figures, etc.]	1987, undated
2	22	Thesis: Negatives	undated
2	23	Thesis: Proposal	1984
2	24	Tour of South Dakota State University Fuel Alcohol Research Project Photographs	undated
2	25	Use of Corn and Corn Byproducts in Mushroom Cultivation	undated
2	26	Use of Potassium Meta Bisulfite to Control Bacterial Contaminants During Fermentation of Fodder Beet Cubes for Fuel Ethanol	1986
2	27	Walley Ceroson, Daschle's Office [handwritten notes, flowchart, tables, etc.]	undated
2	28	Wet Corn Distillers Grains in Lactating Dairy Cow Rations by D.J. Schingoethe, A.K. Clark, and H.H. Voelker	1983
2	29	Wet Milling Products	undated