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**Research Papers Published by Title Only
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- Investigating the Use of Copper Photoredox Catalysts in an Enantioselective Reaction.
Sarah A. Souder and Katrina H. Jensen. *Chemistry Department, Black Hills State
University, Spearfish, SD 57799*
- Radio-Telemetry Measurements of Stopover Behavior of Fall Migrant Yellow-Rumped
Warblers (*Setophaga coronata*) in Missouri River Riparian Forests and
Anthropogenic Woodlots. Ming Liu and David L. Swanson. *Department of
Biology, University of South Dakota, Vermillion SD 57069*

- Temperature, Clipping, and Drought Effects on Belowground Bud Outgrowth of Invasive *Bromus inermis* and Native *Pascopyrum smithii*. Jacqueline P. Ott^{1,2}, Jack L. Butler², Yuping Rong³, and Lan Xu¹. ¹*Department of Natural Resource Management, South Dakota State University, Brookings, SD 57007*. ²*Forest and Grassland Research Laboratory, Rocky Mountain Research Station, U.S. Forest Service, Rapid City, SD 57002*. ³*Department of Grassland Science, Animal Science & Technology College, China Agricultural University, Beijing, China 100193*
- The Preparation of Oxygen Permeable Siloxane Membranes Containing Perfluoroalkylsulfones. M. Hockert, T. Moodie, A. Schwader, and G. A. Hartgraves. *Dakota Wesleyan University, Mitchell, SD 57301*
- Forest Structure, Logging, and Introduced Plants in the Black Hills National Forest. J. L. Butler¹ and S. D. Wacker². ¹*USFS Rocky Mountain Research Station Forest and Grassland Research Laboratory, Rapid City, SD 57702*. ²*Yellowstone National Park, WY. 82190*
- Transforming Undergraduate Biology Education at Augustana College. Steven Matzner, Jennifer Gubbels, and Carrie Hall. *Biology Department, Augustana College, Sioux Falls, SD 57197*
- South Dakota and Chemistry: A Rich History. Miles Koppang¹ and Matthew Miller². ¹*Chemistry, University of South Dakota, Vermillion, SD 57069*; ²*Chemistry and Biochemistry, South Dakota State University, Brookings, SD. 57007*
- How Well Does the USDA's Cropland Data Layer Capture Undisturbed Lands? M. Bouchard and C. A. Johnston. *Department of Natural Resource Management, South Dakota State University, Brookings, SD 57007*.
- Prey Availability and Diet Composition of Woodland Migrants at Natural Riparian Woodlands and Anthropogenic Woodlots of the Northern Prairie Region. Ming Liu and David L. Swanson. *Biology Department, University of South Dakota, Vermillion, SD 57069*.

Reviewers of Manuscripts

Michael Barnes—SDGF&P
 Kevin Buhl—USGS
 Michael Catalano—DWU
 Michael Farney—DWU
 Mark Gabel—BHSU
 Nels Granholm—SDSU
 Tim Mullican—DWU
 William Roggenthen—SDSU
 Craig Spencer—AC
 Hoaran Sun—USD
 Mark Gabel—BHSU

**COMBINED MINUTES
EXECUTIVE COUNCIL MEETING
AND BUSINESS MEETINGS
100TH ANNUAL MEETING OF THE
SOUTH DAKOTA ACADEMY OF SCIENCE
FRIDAY AND SATURDAY, 10 AND 11 APRIL 2015
HOSTED BY SDAS EXECUTIVE COUNCIL
CEDAR SHORE RESORT
OACOMA, SD**

EXECUTIVE COUNCIL MEETING

President Chun Wu opened the meeting at 12:45 pm, welcomed members of the Executive Council to the 100th Annual Meeting of the South Dakota Academy of Science at Cedar Shores Resort and noted that a quorum was present.

Reports:

The Secretary's Report, Treasurer's Report and Proceedings Editor's Report were given by Donna Hazelwood, Jeff Palmer, and Bob Tatina, respectively. Members moved and seconded acceptance of the respective reports

Old Business:

Fellows:

No Fellows were elected 2014.

SDAS web page:

The SDAS website <http://www.sdaos.org> is hosted by Miner Solutions owned by Shane Miner who is currently working for WGBH in Boston. Payment is made from the Proceedings Account. Tim Mullican will continue as the SDAS web master.

New Business

Committee reports

Proceedings of the South Dakota Academy of Science by Bob Tatina

Bob reported that the Proceedings Account is solvent. In addition to peer-reviewed papers, abstracts are also included in the Proceedings. The Proceedings are available on the SDAS webpage. Complimentary paper copies are provided to libraries.

A special centennial edition of the Proceedings of the SD Academy of Science by historian Michael J. Mullin's Science in the Service of the State: A Centennial History of the South Dakota Academy of Science 1915-2015, will be available at the Centennial Meeting.

Bob noted the following due dates and deadlines for the 100th Proceedings: Manuscripts for publication are due 15 July. Submission of manuscripts for publication in the 100th Proceedings signifies that the manuscript has undergone the peer-review process two times, been edited accordingly and is accompanied by a written letter documenting how the reviewer's comments were addressed. Finally, reviewers cannot be authors of the manuscript.

Auditing Committee, Mark Gabel and Donna Hazelwood

The materials provided by treasurer Jeff Palmer were reported to be very well organized, easy to follow, and in good order.

Poster Judging Committee by Dave Bergmann Lan, Xu, and Matt Miller

The name of the awardee is underlined.

AAAS undergraduate female awardee:

THE EFFECTS OF AIRBORNE PARTICULATE MATTER ON RAT NEURONAL CELLS. Megan E. Johnson^{*UG} and Paula A. Mazzer. Department of Chemistry and Physical Sciences, Dakota Wesleyan University

AAAS undergraduate male awardee:

THE PREPARATION OF OXYMEN PERMEABLE SILOXANE MEMBRANES CONTAINING PERFLUOROALKYLSULFONES. M. Hockert^{*UG}, T. Moodie^{*UG}, A. Schwader^{*UG}, and G. A. Hartgraves. Dakota Wesleyan University

Paper Judging Committee by Vicki Geiser, Gary Larson, and Brian Patrick

The name of the awardee is underlined.

1ST Place: SYNTHESIS AND CHARACTERIZATION OF TI₂MNAL: A POTENTIAL SPIN GAPLESS SEMICONDUCTOR. Simeon Gilbert^{*UG}, Ryan Fuglsby^{UG}, Yung Huh and Parashu Kharel. Department of Physics, South Dakota State University

2ND Place: A HISTORICAL COMPARISON OF NATIVE UNIONIDAE MUSSEL DECLINE IN EASTERN SOUTH DAKOTA. Kaylee Faltys^{*} and Nels H. Troelstrup Jr., Chelsey Pasbrig, and Mike Smith. Department of Natural Resource Management, South Dakota State University.

3RD Place: ONE OR TWO *STENODIPLOSIS* (DIPTERA: CECIDOMYIIDAE) ON *ALOPECURUS ARUNDINACEUS* AND *BROMUS INERMIS* IN EASTERN SOUTH DAKOTA? Juan Manuel Perilla López^{*}, Paul J. Johnson, and Arvid Boe. Insect Biodiversity Lab., Department of Plant Science, South Dakota State University

Resolutions Committee by Vicki Geiser

The Members of the Academy thank the following:

1) The Local Planning Committee The SDAS Executive Council; 2) we thank the local registration committee and Nancy Presuhn; 3) we thank the Graphic Artist and photographer Thomas Jones for the banners and taking photographs; 4) we thank Dr. Michael J. Mullin, Professor of History at Augustana College for supporting the SDAS; for writing the monograph, “Science in the Service of the State: A Centennial History of the South Dakota Academy of Science 1915-2015”, and for the plenary address: “The South Dakota Academy of Science: A Century of Challenges and Triumphs”; 5) special thanks to Bob Tatina for his continued excellence and dedication as editor of the Proceedings of the SDAS; 6) special recognition to Chun Wu for serving as SDAS President (2014-2015); 7) special thanks to the dedicated Donna Hazelwood, Secretary; 8) special thanks to the meticulous Jeff Palmer, Treasurer; 9) thanks to Tim Mullican for serving as WebMaster; 10) thanks to our Members-at-Large who have served for the last three years: Jack Butler, Mark Gabel, Paula Mazzer, and Brian Patrick; 11) we thank the Audit Committee: Mark Gabel and Donna Hazelwood; 12) we thank the Resolution Committee: Vicki Geiser; 13) we thank the Nominations Committee: Chun Wu, Donna Hazelwood, Dave Bergman, and Vicki Geiser; 14) we thank our Fellow Nominations Committee: Brian Patrick; 15) we thank our honored SDAS Fellows: Kenneth F. Higgins 1998, The late Chuck Estee 1999, Carroll Hanten 2001, Emil F. Knapp 2001, Clyde Brashier 2003, Milton Hanson 2003, S. Laetitia Kiltzer 2003, The late Robert Looyenga 2003, Arlen Viste 2003, The late Everett White 2003, Perry H. Rahn 2004, Robert Stoner 2004, Maureen Diggins 2011, Gary Earle 2011, H.L. Hutcheson 2011, Waldimar “Wally” Klawiter Jr. 2011, Nels Granholm 2012, The late Audrey Gabel 2012, Mark Gabel 2012, Robert (Bob) Tatina 2012, Arvid Boe 2015, Gary Larson 2015, David Parris 2015, the late Norm Miller 2015, and Robert Roy Kintner 2015; 16) we thank Brian Patrick, Vicki Geiser, and Gary Larson for judging the second Student Oral Presentations contest; and Dave Bergmann, Xu Lan, and Matt Miller for judging the undergraduate student poster contest; 17) we thank Dale Droge for being in charge of computers and LCD projectors; 18) we thank the chairs of this year’s symposia: Frontier Physics and Applied Physics: Dongming Mei and Barbara Szczerbinska; and History of Science: Robert Tatina and Nels Granholm; and lastly 19) we thank Cedar Shore Resort for providing an excellent venue for the 2015 meeting.

Nomination committee Chun Wu, Donna Hazelwood, Dave Bergman, and Vicki Geiser by Dave Bergmann

The Executive Council provided for election the following slate of nominees:

Second Vice-President:	Tim Mullican, DWU
Member-at-Large 2015-2017	Jack Butler, USDA Forest Service Mark Gabel, BHSU biology Paula Mazzer, DWU Brian Patrick, DWU

Passing of the Academy Hammer

Outgoing President Chun Wu passed the SDAS Hammer to Incoming President Steven Matzner

The Presidential Address by Steven Matzner “Bridging the Divide: Can religion and science be complimentary, not confrontational?” was well received by the members of the Academy.

Upcoming SDAS Meetings:

2016 Meeting—101st Annual Meeting hosted by University of Sioux Falls 8 and 9 April. Contact: George Mwangi

102nd Annual Meeting hosted by Dakota Wesleyan University 2017.

103rd Annual Meeting hosted by SDSU 2018.

104th Annual Meeting hosted by MMC 2019.

105th Annual Meeting hosted by NSU 2020.

106th Annual Meeting hosted by BHSU 2021.

Executive Council Fall Meeting 2015: Al’s Oasis, Oacoma, SD, Sat 12 Sept. 20115

Adjournment

Brian Patrick moved and Mark Gabel seconded adjournment of the 99th Annual SDAS Meeting.

Recap of the 2015 SDAS Centennial Meeting:

Two Symposia were presented Friday, A two-part Physics Symposium, Frontier Physics and Applied Physics, and a History of Science Symposium: A Century of South Dakota Scientists and Their Science. Saturday, a total of 36 papers and 30 posters were presented. One hundred eighty-three individuals attended the meeting.

TREASURER'S REPORT—2015

01-Apr-14	Checking Acct Balance	\$13,435.14
	Certificate of Deposit	\$8,628.96
	Petty Cash	\$0.00
	Total Assets	\$22,064.10

	<i>Income</i>	<i>Expense</i>	<i>Date</i>	<i>Check #</i>	<i>Payee</i>
Cash from Spring Meeting	1015.00		07-Apr-14		
Checks from Spring Meeting	2045.00		13-Apr-14		
Spring Meeting Expenses		4,574.58	17-Apr-14	1226	Best Western Ramkota
Spring Meeting Expenses		47.61	17-Apr-14	1227	Thomas Montoya
Spring Meeting Award		100.00	10-Jun-14	1228	Alex Wulff
Spring Meeting Award		75.00	10-Jun-14	1229	Jacob Alsdurf
Spring Meeting Award		50.00	10-Jun-14	1230	Diane Narem
Dues Payment	25.00		22-Jul-14		
Domestic Nonprofit Filing Fee		10.00	22-Jul-14	1339	SD Secretary of State
Lost Check # 1647 Refund	60.00		21-Aug-14		
Repayment of Lost Check		60.00	21-Aug-14	1231	Donna Hazelwood
Fall Business Meeting		245.58	06-Sep-14	1340	Al's Oasis
Dues Payment	25.00		19-Sep-14		
Eastern SD Science Fair		240.00	06-Jan-15	1232	Science Fair Awards
Spring Meeting Expenses		200.00	02-Feb-15	1233	Amy Montoya
High Plains Science Fair		200.00	03-Mar-15	1234-1241	Science Fair Awards
South Central Science Fair		200.00	03-Mar-15	1242-1249	Science Fair Awards
Northern Science Fair		200.00	03-Mar-15	1250-1257	Science Fair Awards
Supplies for Annual Meeting		179.50	25-Mar-15	1258	Central Business Supply
Supplies for Annual Meeting		39.00	31-Mar-15	1259	DSU Print Shop
TOTALS	\$3,170.00	\$6,421.27			

31-Mar-15	Checking Acct Balance	\$10,183.87
	Certificate of Deposit	\$8,680.74
	Petty Cash	\$0.00
	Total Assets	\$18,864.61

*Respectfully Submitted,
Jeffrey S. Palmer*

SOUTH DAKOTA ACADEMY OF SCIENCE PROCEEDINGS EDITOR'S REPORT 2015

Report for the year from April 1, 2014 to March 31, 2015.

1. The following libraries were mailed a complimentary paper copy: AC, BHSU, DSU, DWU, MMC, NSU, OLC, SDSMT, SDSU (2 copies), UND, USD (2 copies), Am. Mus. Nat. Hist., U of WA and the Booth Fish Hatchery.
2. The following indexing/ abstracting services and institutions were mailed complimentary paper copies: Chemical Abstract Services, AcadSci., Inc. , Cambridge Scientific Abstracts, GeoRef Library, Baywood Publishing (Anthropology), Thompson Scientific (Biosis).
3. The following non-member institution were sent paper copies: Linda Hall Library (Kansas City, MO) 1 copy; Curran and Associates (Red Hook, MA) 2 copies.
4. Electronic files of the 2014 Proceedings have been sent to Miner Solutions for publishing to the SDAOS website.
5. For the 2014 Proceedings:
 - No. of paper copies printed = 40
 - No. of pages = 220
 - No. of full papers published = 14
 - No. of abstracts published = 29
 - No. of titles only published = 15
 - No. paper copies distributed to libraries, abstracting services, individuals, etc.= 29
 - Electronic files of were provided to Shane Miner of Miner Solutions for uploading to the SDAS website.
 - 192 pages invoiced @ \$20.00 per page = \$3840.00 (\$3840.00 paid)
 - 5 set of reprints = \$450.00 (\$450.00 paid)
 - 3 copies sold @ \$15.00 = \$45.00 (\$30.00 paid)
 - One over payment of \$10.00 was credited to author's account
 - Total invoiced = \$4335.00 (Total paid = \$4330.00)
 - Costs for 2014 Proceedings and Annual Meeting Program = \$4097.22
 - Net profit = \$4330.00 - \$4097.22 = \$232.78
6. First call for papers sent out early February; second call sent out 1 March.
7. 2015 Schedule of Events was printed and distributed.
8. Proceedings Ledger

Beginning Balance (4/1/2014)	8596.00
INCOME	
Page Charges & Reprints	\$8220.00 (Invoiced \$8220.00)
Subscriptions	\$60.00 (Invoiced \$75.00)
Total Income	\$8280.00
EXPENSES	
Postage	344.57
Supplies	31.13
Formatting & Printing	5323.28
Webhosting	1200.00
Meeting Expenses	707.67
Total Expenses	\$7606.65
Ending Balance (3/31/2015)	\$9269.35

*Submitted by
Robert Tatina, Editor*

FELLOWS OF THE SOUTH DAKOTA ACADEMY OF SCIENCE (1998-2015)

Kenneth F. Higgins 1998
Chuck Estee 1999
No nominations 2000
Carroll Hanten 2001
Emil F. Knapp 2001
No nominations 2002
Clyde Brashier 2003
Milton Hanson 2003
S. Laetitia Kiltzer 2003
Robert Looyenga 2003
Arlen Viste 2003
Everett White 2003
Perry H. Rahn 2004
Robert Stoner 2004
No nominations 2005
No nominations 2006
No Nominations 2007
No Nominations 2008
No Nominations 2009
Maureen Diggins 2011
Gary Earle 2011
H.L. Hutcheson 2011
Waldimar “Wally” Klawiter Jr. 2011
Nels Grandholm 2012
the late Audrey Gabel 2012
Mark Gabel 2012
Robert (Bob) Tatina 2012
No Nominations 2013
No Nominations 2014
No Nominations 2015

ANNUAL MEETING ROTATION SCHEDULE

Year	Location (may vary)	Sponsoring Institution
2016	Sioux Falls, SD	University of Sioux Falls
2017	Mitchell, SD	Dakota Wesleyan University
2018	Brookings, SD	South Dakota State University
2019	Yankton, SD	Mount Marty College
2020	Aberdeen, SD	Northern State University
2021	Spearfish, SD	Black Hills State University
2022	Madison, SD	Dakota State University
2023	Vermillion, SD	University of South Dakota
2024	Sioux Falls, SD	Augustana College
2025	Rapid City, SD	South Dakota School of Mines and Technology
2026	Sioux Falls, SD	University of Sioux Falls
2027	Mitchell, SD	Dakota Wesleyan University
2028	Brookings, SD	South Dakota State University
2029	Yankton, SD	Mount Marty College
2030	Aberdeen, SD	Northern State University
2031	Spearfish, SD	Black Hills State University
2032	Madison, SD	Dakota State University
2033	Vermillion, SD	University of South Dakota
2034	Sioux Falls, SD	Augustana College
2035	Rapid City, SD	South Dakota School of Mines and Technology
2036	Sioux Falls, SD	University of Sioux Falls
2037	Mitchell, SD	Dakota Wesleyan University
2038	Brookings, SD	South Dakota State University
2039	Yankton, SD	Mount Marty College
2040	Aberdeen, SD	Northern State University
2041	Spearfish, SD	Black Hills State University

2015 MEMBERSHIP LIST

*Alton, Andrew	AC	*Christofferson, Cabot-Ann	SDSMT
**Andersen, Ethan	SDSU	**Cooper, Sam	SDSU
***Archamboult, Gary	USD	*Corwin, Luke A.	SDSMT
*Bahr, Samantha	NSU	*Detwiler, Andy	SDSMT
*Baird, Nancy		**Deutscher, Tyrel	SDSU
*Barnes, Michael E.	SDGFP	*Droge, Dale	DSU
*Bergmann, David J.	BHSU	**Elmore, Gina	SDSMT
***Bhatta, Eden	SDSMT	**Estridge, Grace	DSU
*Boe, Arvid	SDSU	*Ezrailson, Cathy M.	USD
*Braselton, Nathanael	SDSU	***Faltys, Kaylee	SDSU
***Bruggeman, Shannon		*Gabel, Mark	BHSU
*Buhl, Kevin J.	USGS	**Garetle, Shawn	OLC
*Butler, Jack L.	USFS	**Gayer, Sherif	DSU
*Chinthala, Paramageetham	SDSU	*Gaylor, Michael	DSU

*Gebreil, Ahmed	SDSU	*Mitchell, Jon	NSU
*Geiser, Vicki M.	MMC	**Moodie, Travis	DWU
*Gigliotti, Larry M	USGS	*Mulligan, Tim	DWU
**Gilbert, Simeon	SDSU	*Nepal, Madhav	SDSU
**Gilbert, Sabra	SDSU	**Neuberry, Gretchen	USD
*Grau, Nathan	AC	**Olson, Denise	SDSU
**Gustafson, Kevin J.	SDSU	*Ott, Jacqueline P.	USFS-RMRS
*Hall, Carrie L.	AC	*Palmer, Jeffrey	DSU
**Hansen, Stephanie	SDSU	*Patrick, L. Brian	DWU
**Hanson, Austin	SDSU	**Peterson, Erin	SDSU
*Hartgraves, Gregory D.	DWU	*Rauber, Joel	SDSU
*Hawkins, Luke	NRAO	*Reese, Neil	SDSU
*Hazelwood, Donna	DSU	**Rogers, Michele	DSU
*Heise, Jaret	SURF	**Ruckey, Anadia	NSU
*Higgins, Kenneth F.	SDSU	*Sander, Joel	USD
*Hildreth, Mike	SDSU	**Sarah, Adam	SDSU
**Hiller, Leah M.	AC	**Schwader, Andrew	DWU
**Hockert, Matt	DWU	**Shaw, Samantha	SDSU
*Huh, Yung	SDSU	*Shelton, Sally	SDSMT
*Johnson, Paul J.	SDSU	*Shmagin, Boris A.	SDSU
**Johnson, Megan	DWU	**Shrestha, Namita	SDSMT
***Johnson, Dalmacia		***Similien, R. Martine	
*Johnston, Carol A.	SDSU	*Simpson, Gregory D.	SDGFP
*Kazkaz, Kareem	LLNL	***Sobolev, Vladimir	SDSMT
*Keeter, Kara	BHSU	**Souder, Sarah	BHSU
*Keller, Christina	USD	*Spencer, Craig N.	AC
**Kempf, Larissa	NSU	*Stetler, Larry D.	SDSMT
*Kharel, Parashu R.	SDSU	*Stoner, M. Robert	USD
*Kiesow, Alyssa M.	NSU	**Suriano, Anne-Marie	SDSMT
**King, Thomas E.	SDSMT	*Swanson, David	USD
***Kontz, Brian J.	SDSU	*Szczerbinska, Barbera M.	DSU
*Koppang, Miles	USD	*Tatina, Robert	DWU
**Kramer, Alexander	DSU	**Telkamp, Tyler	DSU
**Kuehl, Lyntausha C.	SDSU	*Terpstra, Erin J.	USD
**Kuharsh, Erica	USD	**Tiedt, Douglas	SDSMT
*Larson, Gary	SDSU	**Traufer, Alex	NSU
**Leimen, Lucas	DSU	*Troelstrup Jr., Nels H.	SDSU
*Liu, Jing	USD	*Uresk, Daniel W.	USDA
**Liu, Ming	USD	**Van Essen, Mason	AC
**Lopez, Juan	SDSU	**Vargas, Tada	OLC
*MacLellan, Ryan	USD	**Vincent, Geoffrey	SDSU
*Matzner, Steven L.	AC	*Viste, Arlen E	AC
*Mazzer, Paula	DWU	***Wang, Guojian	USD
*McClanahan, Shae	NSU	**Wei, Wenzhao	USD
**McGraw, Michael	SDSMT	*Welsh, Ed Badlands	NP
*Mei, Dongming	USD	*Wu, Chun	MMC
*Mei, Hao	USD	*Xu, Lan	SDSU
*Mergen, Daryl E.	Mergen Ecological Delineation., Inc.	*Yang, Ke	SDSU
Mergen, Alex	SDSU	*Yang, Gang	USD
**Mergen, Zach	BHSU		
*Miller, Matthew L.	SDSU		

*Senior Member

**Student Member

***Non-member Attende