*For papers with more than one author, an asterisk follows the name of the author(s) who plans to present the paper at the meeting.

AERONAUTICS AND SPACE SCIENCE

Chairperson: Scott E. Tarry
NASA Nebraska Space Grant & EPSCoR, University of Nebraska at Omaha

SESSION A
Olin 249

8:00 a.m. 1. EFFECTIVENESS OF ULTRAVIOLET SANITIZING. Ashley Belmudez-Frakes*, P. Higley and B. Mauck, Department of Biology, College of Saint Mary, Omaha.

8:10 2. THE EFFECT OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE ON GAIT. Jennifer M. Yentes* and Nick Stergiou, Nebraska Biomechanics Core Facility, University of Nebraska at Omaha.

8:20 3. DESIGN OF EXTERNALLY POWERED ANKLE-FOOT-ORTHOSIS FOR POST FLIGHT RECOVERY. Shane Wurdeman*, Department of Environmental, Agricultural and Occupational Health, University of Nebraska Medical Center, Omaha, and Nick Stergiou, Nebraska Biomechanics Core Facility, University of Nebraska at Omaha.

8:30 4. LANTHANUM HEXABORIDE NANOSTRUCTURES AS COLD FIELD EMISSION CATHODES. Robert Jacobberger*, Joseph Brewer, and Chin Li Cheung, Department of Chemistry, University of Nebraska–Lincoln; and Fereydoon Namavar, Department of Orthopaedic Surgery, University of Nebraska Medical Center, Omaha.

8:40 5. USE OF NATURAL ANTIOXIDANTS TO PREVENT THE DEGRADATION OF OILS AND FORMATION OF TOXIC REACTIVE ALDEHYDE PRODUCTS. Jami L. Mitchell* and Ganesh Naik, Department of Arts and Sciences, College of Saint Mary, Omaha.

8:50 6. MANNOSE 6-PHOSPHATE/INSULIN-LIKE GROWTH FACTOR II RECEPTOR DIMERIZATION INTERACTIONS. Jenna Allison*, Joseph Wheeler, and Jodi Kreiling, Department of Chemistry, University of Nebraska at Omaha.

9:00 7. SURGICAL ROBOTS FOR MINIMALLY INVASIVE SURGERY. Tom Frederick, Department of Mechanical Engineering, University of Nebraska–Lincoln.

9:10 BREAK/POSTER PRESENTATIONS

9:30 8. A FOUR-DOF MODULAR SELF-RECONFIGURABLE ROBOT. Khoa D. Chu* and Carl A. Nelson, Department of Mechanical Engineering, University of Nebraska–Lincoln.

9:40 9. RFID IN SPACE: EXPLORING THE FEASIBILITY AND PERFORMANCE OF GEN 2 TAGS AS A MEANS OF TRACKING EQUIPMENT, SUPPLIES, AND CONSUMABLE PRODUCTS IN CARGO TRANSPORT BAGS ONBOARD A SPACE VEHICLE OR HABITAT. Maurice D. Cavitt* and Eric Jones, Department of Industrial and Management Systems Engineering, University of Nebraska–Lincoln.

9:50 10. DISCONTINUOUS GALERKIN METHOD. Bryan Johnson, Department of Mathematics, University of Nebraska at Omaha.

10:00 11. DEVELOPING COATED TOOLS FOR MICRO ELECTROCHEMICAL MACHINING PROCESS. Ajay K. Swain* and Kamlakar P. Rajurkar, Department of Industrial and Management Systems Engineering, University of Nebraska–Lincoln; and Murali M. Sundaram, Department of Dynamic Systems, University of Cincinnati, OH.

10:10 12. QUADRATIC SOLUTIONS TO $x^4+y^4=m^2z^4$. Melissa Emory, Department of Mathematics, University of Nebraska at Omaha.

10:20 13. MATERIAL PROPERTIES OF COMPOSITE PATCH. Joan Yule*, Shijia Zhao, Ananth Ram Mahanth Kasavajhala, and Linxia Gu, Department of Mechanical Engineering, University of Nebraska–Lincoln.

10:30 BREAK/POSTER PRESENTATIONS

10:50 14. GREEN TECHNOLOGIES FOR PAVEMENT SURFACE ICING CONTROL IN COLD CLIMATES. Paul Downey, Department of Electrical Engineering, University of Nebraska–Lincoln.

11:00 15. POLICY'S ROLE IN THE EVOLUTION OF ERROR-TOLERANCE IN NATIONAL AEROSPACE AND SCIENCE ADMINISTRATION (NASA). Patrick O'Neil* and Neil Gabrielson, Department of Aviation, University of Nebraska at Omaha.

11:10 16. THE EFFECT OF ISCHEMIA ON MUSCULAR STRENGTH. Sara Myers* and Nick Stergiou, Nebraska Biomechanics Core Facility, University of Nebraska at Omaha.

11:20 17. BALANCE TRAINING FOR MULTIPLE SCLEROSIS PATIENTS. Jessie Huisinga* and Nick Stergiou, Nebraska Biomechanics Core Facility, University of Nebraska at Omaha; and Shane Wurdeman, Department of Environmental, Agricultural and Occupational Health, University of Nebraska Medical Center, Omaha, and Jun Wang, Department of Geosciences, University of Nebraska–Lincoln.

11:30 18. DIFFERENTIAL GENE REGULATION OF THE *icaADBC* OPERON IN *STAPHYLOCOCCUS EPIDERMIDIS* UNDER MICROAEROBIC AND AEROBIC GROWTH

CONDITIONS. Erica Colbert* and W.P. Jamison, Department of Physical and Life Sciences, Chadron State College, Chadron.

11:40 19. DOES EXPOSURE TO HEAVY METALS CORRELATE WITH ANTIBIOTIC RESISTANCE IN BACTERIA? Samantha Marquez* and B. Mauck, Department of Biology, College of Saint Mary, Omaha.

11:50 ADJOURN

AERONAUTICS AND SPACE SCIENCE

Chairperson: Michaela Lucas
NASA Nebraska Space Grant & EPSCoR, University of Nebraska at Omaha

SESSION B
Olin 224

8:00 a.m. 1. ENHANCING INTRODUCTORY COURSES WITH HANDS-ON PROJECTS. William E. Spurgeon, Division of Business and Information Technology, Western Nebraska Community College, Scottsbluff.

8:10 2. COMMUNITY ACTION PARTNERSHIP OF WESTERN NEBRASKA INFORMATION TECHNOLOGY INTERNSHIP. Jason Hamilton, Division of Business and Information Technology, Western Nebraska Community College, Scottsbluff.

8:20 3. COMPUTERIZED RANKING TASKS FOR INTRODUCTORY ASTRONOMY. Renee Augustyn* and Kevin M. Lee, Center for Science, Mathematics, and Computer Education, University of Nebraska–Lincoln.

8:30 4. INTRODUCTORY ASTRONOMY ASTROPHOTOGRAPHY PROJECT. Tom Robinson, Division of Business and Information Technology, Western Nebraska Community College, Scottsbluff.
SPACE IMAGING RESEARCH. Jonathan Spurgeon*, Division of Math and Science, Western Nebraska Community College, Scottsbluff.

8:40 5. DETECTING EXTENDED COSMIC RAY AIR SHOWERS WITH THE CROP NETWORK. Thomas S. McShane*, Bjorn Nilsen, Alejandro Echeverri, and Yury Gorbunov, Department of Physics, Creighton University, Omaha; and Lyle A. Sass, Consultant, Mount Michael Academy, Elkhorn.

8:50 6. ELECTRON OPTICAL EXCITATION FUNCTIONS IN METHANE. Riley Howsden*, Eric Rybacki, and Kenneth Trantham, Department of Physics and Physical Science, University of Nebraska at Kearney.

9:00 7. INVESTIGATING MASS OUTFLOWS OF BAL QUASARS WITH CIII* ABSORPTION. David C. Austerberry, Department of Physics, Creighton University, Omaha.

9:10 BREAK/POSTER PRESENTATIONS

9:30 8. SIMULATION OF TRANSIENT ETHANOL EROPLET COMBUSTION IN CONVECTIVE ENVIRONMENT. Inkant Awasthi* and George Gogos, Department of Mechanical Engineering, University of Nebraska–Lincoln.

9:40 9. CRYOCOOLER VALIDATION FOR THE VASIMIR ISS DEMONSTRATOR MISSION. Eldon Summerson* and Kyrik Weidman*, Department of Mechanical Engineering, University of Nebraska–Lincoln.

9:50 10. ANALYSIS OF CRACKS IN AGING AIRCRAFT STRUCTURES WITH BONDED COMPOSITE-PATCH REPAIR. Ananth Ram Mahanth Kasavajhala* and Linxia Gu, Department of Mechanical Engineering, University of Nebraska–Lincoln.

10:00 11. A CULTURAL APPROACH TO CONSERVATION UTILIZING MODERN SCIENCE. Hank Miller, Department of Natural Resources, Nebraska Indian Community College, Niobrara, and Troy Munhofen and Carly DeBilzan*, Department of Natural Resources, Nebraska Indian Community College, So. Sioux City.

10:10 12. REGIONAL EVAPOTRANSPIRATION ESTIMATION USING LAND SURFACE MODELING, DATA ASSILILATION, AND SATELLITE REMOTE SENSING. Ayse Irmak*, School of Natural Resources and Department of Engineering, and Baburao Kamble, Department of Engineering, and Ian Ratcliffe, Center for Advanced Land Management Information Technologies, University of Nebraska–Lincoln.

10:20 13. POLARIZING EFFICIENCY OF LYOTROPIC CHROMONIC LIQUID CRYSTALS. Jeremy Stromer*, Bobbi Arnold, Josh Beck, Liubov Kreminska, and Michael Larsen, Department of Physics and Physical Science, University of Nebraska at Kearney.

10:30 BREAK/POSTER PRESENTATIONS

10:50 14. NEBRASKA 7-9 DECEMBER 2009 SNOW STORM: NASA'S SATELLITE VIEW AND NCEP'S WEATHER REANALYSIS. Amy Gehring* and Jun Wang, Department of Geosciences, University of Nebraska–Lincoln.

11:00 15. USING PHOTOGRAMMETRY AND GIS METHODS TO STUDY AND DIGITALLY PRESERVE FLUVIAL ICHNOFOSSIL ASSEMBLAGES AT TOADSTOOL PARK, NORTHWEST NEBRASKA. Jesse Zwiebel* and Michael Leite, Department of Physical and Life Sciences, Chadron State College, Chadron;

and Hannan LaGarry, Department of Sciences, Oglala Lakota College, Kyle, SD; and Neffra Matthew, Bureau of Land Management, Denver, CO; and Brent Breithaupt, Department of Geology and Geophysics, University of Wyoming, Laramie, WY.

11:10 16. WIND ENERGY IN THE MIDWEST: PAST, PRESENT AND FUTURE. Eric Holt* and Jun Wang, Department of Geosciences, University of Nebraska–Lincoln.

11:20 17. SATELLITE REMOTE SENSING OF AEROSOLS: FACTORS THAT AFFECT SMOKE PLUME INJECTION HEIGHTS. Catherine May*, Department of Meteorology, and Jun Wang, Department of Geosciences, University of Nebraska–Lincoln; and Charles Ichoku, Department of Physics, University of Maryland and Baltimore County, Baltimore, MD.

11:30 18. CORRELATING MODIS OBSERVATIONS AND CORRESPONDING AERONET STATIONS. Nicole Pothier* and Jun Wang, Department of Geosciences, University of Nebraska–Lincoln.

11:40 19. REMOTE SENSING AS A MEANS OF ENHANCING NEBRASKA'S EMERGING WINE INDUSTRY. Trisha Larson*, Donald Rundquist, and Brenton Willoughby, School of Natural Resources, University of Nebraska–Lincoln.

AERONAUTICS AND SPACE SCIENCE

Chairperson: Scott E. Tarry
NASA Nebraska Space Grant & EPSCoR, University of Nebraska at Omaha

POSTER SESSION
9:10 - 9:30 a.m. & 10:30 – 10:50 a.m.
Olin 249

MULTI-FUNCTIONAL *IN VIVO* ROBOTIC PLATFORM FOR LONG-TERM SPACEFLIGHT. Tyler D. Wortman, Department of Mechanical Engineering, University of Nebraska–Lincoln.

THE USE OF MULTIVARIATE FACTOR ANALYSIS IN THE DEVELOPMENT OF HAND SIZES. T. McLean and R.R. Bishu, Department of Industrial Engineering, University of Nebraska–Lincoln.

BEARING DRAG TORQUE AND STIFFNESS ESTIMATIONS. Justin Green, Department of Mechanical Engineering, University of Nebraska–Lincoln.

TWO ONLINE ENVIRONMENTS TO SUPPORT STEM EDUCATION. Neal Grandgenett, Department of Teacher Education, and Robert Shuster, Department of Geography/Geology, University of Nebraska at Omaha.

DESIGN OF A GPS-BASED COSMIC RAY DETECTOR USING THE BERKELEY DAQ. David C. Austerberry, Department of Physics, Creighton University, Omaha.

GEOMORPHOLOGICAL ANALYSIS OF STREAM IN THE PINE RIDGE, NORTHWESTERN NEBRASKA . Kodi Young and Michael Leite, Department of Physical and Life Sciences, Chadron State College.

USE OF SPECTRAL REFLECTANCE AND SATELLITE IMAGERY TO IDENTIFY AMERICAN BURYING BEETLE *NICROPHORUS AMERICANUS* HABITAT IN NEBRASKA. Michelle McPherron, Vijendra Boken, and W.Wyatt Hoback, Department of Sociology, Geography and Earth Sciences, University of Nebraska at Kearney.

USING REMOTE SENSING DATA FOR PALEONTOLOGICAL EXPLORATION IN MADAGASCAR . Timothy J. Stoebner and Christina Etzrodt, Department of Geography; and Todd Widhelm and Lisa D. Boucher, Department of Biology, University of Nebraska at Omaha.

CENTRAL AMERICAN SMOKE TRANSPORT TO TEXAS: METEOROLOGICAL CAUSES AND SOCIETAL EFFECTS. Melissa Huffman and Jun Wang, Department of Geosciences, University of Nebraska–Lincoln.

THE EFFECT OF AUDITORY STIMULATION ON HUMAN MOVEMENT VARIABILITY. Jeffery P. Kaipust and Nick Stergiou, Nebraska Biomechanics Core Facility, University of Nebraska at Omaha.

LINEAR AND NONLINEAR ASSESSMENT OF POSTURAL CONTROL IN MULTIPLE SCLEROSIS PATIENTS. Jessie Huisinga and Nick Stergiou, Nebraska Biomechanics Core Facility, University of Nebraska at Omaha; and Mary Filipi, Department of Adult Health and Illness, University of Nebraska Medical Center, Omaha.

UNDERSTANDING AND DEVELOPING HPLC METHODS. Chelsea Dean, Ganesh Naik, and Jeremy Karr, Department of Arts and Sciences, College of Saint Mary, Omaha.

WORK TOWARD THE DEVELOPMENT OF A MICROFLUIDIC BIOSENSOR. Erin M. Gross, Sarah E. Roszhart, Nicholas R. Stukel, and Laura R. Anderson, Department of Chemistry, Creighton University, Omaha; and Charles S. Henry, Department of Chemistry, Colorado State University, Fort Collins, CO.

THE ASSOCIATIONS BETWEEN COGNITIVE AND PHYSICAL FUNCTION DURING DUAL TASK PARADIGMS. Sara Myers, Leslie Decker, and Nick Stergiou, Nebraska Biomechanics Core Facility, University of Nebraska at Omaha.

SURFACE HABITAT 1/6g SUITLOCK EVALUATON. Jack Mondry and Andrew Kelley, Department of Mechanical Engineering, University of Nebraska–Lincoln.

THE REAL WORLD EXPERIENCE. Greg Schwanke, Department of Instructional Technology, University of Nebraska at Kearney.

ANTHROPOLOGY AND GEOGRAPHY

Co-Chairpersons: Peter Bleed and Steven Damm
Department of Anthropology
University of Nebraska–Lincoln
Olin Hall 111

1:00 p.m. WELCOME

1:10 1. EVALUATING THE EFFECTS OF MICROWAVABLE MEALS ON HEALTH AND CULTURE IN THE U.S. Bailey Armstrong, Department of Anthropology, University of Nebraska–Lincoln.

1:30 2. EDUCATION AND PUBLIC OUTREACH IN ARCHAEOLOGY. Christine Nycz, Department of Anthropology, University of Nebraska–Lincoln.

1:50 3. WILD POTTERY OF THE LINCOLN POTTERY WORKS: CAN ANTIQUE COLLECTIONS HELP ARCHEOLOGISTS? Linda Dammann, Department of Anthropology, University of Nebraska–Lincoln.

2:10 4. TIMBER, TRADE, AND THE HANSEATIC LEAGUE: AN EVOLUTIONARY PERSPECTIVE ON THE DEVELOPMENT AND ADAPTATION OF SHIP CONSTRUCTION TECHNIQUES. Jillian Smith, Department of Anthropology, University of Nebraska–Lincoln.

2:30 5. THE DECIDUOUS DENTITION OF CATARRHINE PRIMATES: IMPLICATIONS FROM MACACA NEMESTRINA (PIGTAILED MACAQUES). Emily Hammerl, Department of Anthropology, University of Nebraska–Lincoln.

2:50 6. HOW WOMEN ACHIEVE STATUS IN TRADITIONAL SOCIETIES. Melissa Garfield, Department of Anthropology, University of Nebraska–Lincoln.

3:10 7. THE PROSOCIAL DIMENSION OF STATUS IN EGALITARIAN SOCIETIES. Zach Garfield, Department of Anthropology, University of Nebraska–Lincoln.

3:30 8. RITUALIZED AND NONRITUALIZED RELATIONS BETWEEN CAPTORS AND CAPTIVES AMONG THE COMANCHES, KIOWAS AND CHEYENNES. Martha McCollough, Department of Anthropology, University of Nebraska–Lincoln.

3:50 9. READING IMAGES OF GENDER AND EMPIRE: PHOTOGRAPHS OF THE OJIBWE OF NORTHERN MINNESOTA. Ashley J. Barnett, Department of Geography, University of Nebraska–Lincoln.

BIOLOGICAL AND MEDICAL SCIENCES

Chairperson: Annemarie Shibata
Department of Biology, Creighton University

SESSION A

Session Chairperson: Kimberly Carlson, University of Nebraska at Kearney
Olin 112

8:30 a.m. 1. EVOLUTIONARY CONSERVATION OF A POTENTIAL ANIMAL/MAMMALIAN RIBOSWITCH. Andrew Kavan*, Molly McDevitt, and Julie Soukup, Department of Chemistry, Creighton University, Omaha.

8:42 2. ANTIBIOTIC DEVELOPMENT BY INVESTIGATION OF THE *GLMS* RIBOSWITCH. Danielle Renner*, Erin Johnson and Juliane Soukup, Department of Chemistry, Creighton University, Omaha.

8:54 3. CONFIRMATION OF BINDING SPECIFICITY AND GENETIC CONTROL BY POTENTIAL MAMMALIAN RIBOSWITCH. Kelley Wanzeck*, Natalie Erbs, Katie Del Vecchio, and Julie Soukup, Department of Chemistry, Creighton University, Omaha.

9:06 4. WHOLE GENOME RIBOSWITCH SEARCHES. Karen L. Holly*, M.A. Pauley, College of Information Science and Technology, University of Nebraska at Omaha.

9:18 5. MIMICKING THE TARGETING OF RNA: REACTION OF DNA STEM-LOOP MOTIFS WITH PARTIAL COMPLEMENTARY STRANDS. Hollie Siebler*, Department of Biology, Dana College, Blair; and Carolyn Carr, University of Nevada, Reno, NV; and Hui-Ting Lee, Irine Khutsishvili, and Luis A. Marky, Department of Pharmaceutical Sciences, University of Nebraska Medical Center, Omaha.

9:30 BREAK

9:45 6. CHANGES IN *OTK18* mRNA LEVELS USING RNAi AND qRT-PCR. Joshua Bauer*, Becky A. Fusby, and Kimberly A. Carlson, Department of Biology, University of Nebraska at Kearney.

9:57 7. STABILITY AND MICROMECHANICAL PROPERTIES OF MODEL ALZHEIMER'S Aβ-AMYLOID FIBRILS. Tana Friesth*, Creighton University, Department of Sociology, Omaha; and Benjamin Soukup, Montana State University, Department of Physics, Bozeman, MT; and Patricia Soto, Creighton University, Department of Physics, Omaha.

10:09 8. EVALUATING POTENTIAL MODIFIERS OF PARKINSON'S DISEASE USING A *DROSOPHILA* MODEL OF PD. Lokeshchandra Kalekar*, Kevin Barton, and Bruce Chase, Department of Biology, University of Nebraska at Omaha; and Katerina Markopoulou, Department of Neurology, University of Thessaly, Larissa Greece.

10:21 9. A NEW COMPUTATIONAL APPROACH FOR ASSEMBLING SHORT READS. Julia Warnke* and Hesham Ali, College of Information Science and Technology, University of Nebraska at Omaha.

10:33 10. CCR4-NOT COMPLEX IN THE POST-TRANSCRIPTIONAL CONTROL OF Gcn4p TARGETED GENES' mRNAs. Dhananjay M. Nawandar*, Wendy Vienneau, Kelly Westfall, Naomi Barcomb and Mark J. Swanson, Department of Biology, University of Nebraska at Omaha.

11:00 MAIBEN MEMORIAL LECTURE - OLIN LH - B

BIOLOGICAL AND MEDICAL SCIENCES

SESSION B

Session Chairperson: Brad Ericson, University of Nebraska at Kearney
Smith Callen Conference Center

8:30 a.m. 1. POPULATION GENETICS OF SICKLEFIN AND STURGEON CHUBS IN THE MISSOURI RIVER BASIN. Cal Borden*, School of Biological Sciences, University of Nebraska–Lincoln; and Jerrod Hall and Gerald Mestl, Nebraska Game and Parks Commission, Lincoln.

8:42 2. IDENTIFICATION OF ALKALIPHILIC BACTERIA FROM WESTERN NEBRASKA. Katherine Score*, Katherine Brown, Luke Wright, and Ann Buchmann, Chadron State College, Chadron.

8:54 3. INVESTIGATION INTO THE EFFECTS OF ECDYSTEROIDS ON *SCHIZOCOSA* WOLF SPIDERS. Reed M. Stubbendieck*, A.J. Zera, and E.A. Hebets, School of Biological Sciences. University of Nebraska–Lincoln.

9:06 4. THE EFFECTS OF FLY CLEANING BEHAVIOR ON BACTERIAL TRANSMISSION. Sebastian Edwards*, B.J. Jacques, and J.J. Shaffer, Department of Biology, University of Nebraska at Kearney.

9:18 5. THE EFFECTS OF pH FLUCTUATION ON BACTERIOPHAGE ISOLATED FROM EPHEMERAL, ALKALINE LAKES. Andrew A. Block*, Cory Shield, and Julie J. Shaffer, Department of Biology, University of Nebraska at Kearney.

9:30 BREAK

9:45 6. ATRAZINE: WATER AND SOIL SAMPLES IN WESTERN NEBRASKA. Callan Driscoll*, Environmental Sciences Program; and J. E. Platz and Megan Konz, Department of Biological Sciences; and E. J. Haas and Charles Cohlmia, Department of Chemistry, Creighton University, Omaha.

9:57 7. IDENTIFICATION OF SIDEROPHORE PRODUCTION BY BACTERIA FROM HYPER ALKALINE-SALINE LAKES. Marcelle Strydom* and J.J. Shaffer, Department of Biology, University of Nebraska at Kearney.

10:09 8. FUNCTIONAL DIVERSITY OF MITOCHONDRIAL β-HYDROXYACYL-COA HYDROLASES IN *A.THALINA*. Kerry A. Lucas* and K. Ronhovde, Department of Chemistry, Doane College, Crete; and Z. Ke and J.W. Hawes, Department of Chemistry and Biochemistry, Miami University, Oxford, OH.

10:21 9. D-LOOP MITOCHONDRIAL AMPLIFICATION: THREE SPECIES OF ARIZONA RANID FROGS. Kristina Nowatzke*, J. E. Platz, C. Brockhouse, S. Cho and C. F. Austerbery. Department of Biology, Creighton University, Omaha.

10:33 10. EVOLUTIONARY DEVELOPMENT OF PH TOLERANCE IN EXPERIMENTAL *ESCHERICHIA COLI* LINEAGES. Paul J. Akre*, Mandy H. Wong, and Alistair J. Cullum, Department of Biology, Creighton University, Omaha.

11:00 MAIBEN MEMORIAL LECTURE - OLIN LH - B

BIOLOGICAL AND MEDICAL SCIENCE

SESSION C

Session Chairperson: Emerson Crabill, University of Nebraska–Lincoln
Olin 112

1:00 p.m. 1. ANTIBIOTICS USAGE AND ITS EFFECT ON THE DEVELOPMENT OF ANTIBIOTIC RESISTANCE IN MEDICALLY IMPORTANT BACTERA; A CORRELATION STUDY. Gillian M Cromwell* and Dhundy R. Bastola, College of Information Science and Technology, University of Nebraska at Omaha.

1:12 2. *DROSOPHILA MELANOGASTER* NORA VIRUS ORF-1 PROTEIN: ANTIBODY CHARACTERIZATION OF VIRUS REPLICATION *IN VIVO*. Brandon Mizner*, Ethan Cordes, Darby J. Carlson, Brad L. Ericson, and Kimberly A. Carlson, Department of Biology, University of Nebraska at Kearney.

1:24 3. INVESTIGATION OF THE EFFICACY OF NANOPARTICLE ANTIRETROVIRAL DRUG DELIVERY SYSTEMS. Shelby Takeshita*, Department of Chemistry; and Chris Destache, School of Pharmacy & Health Professions; and Annemarie Shibata, Department of Biology, Creighton University, Omaha.

1:36 4. IDENTIFICATION OF HUMAN HERPESVIRUS TRANSMISSION SOURCE IN ZAMBIAN HOUSEHOLDS. Maxine White*, Danielle Shea, Veenu Minhas, and Charles Wood, Nebraska Center for Virology and the School of Biological Sciences, Lincoln Morrison Center, University of Nebraska–Lincoln.

1:48 5. RESPONSES OF SALICYLIC ACID METABOLISM RELATED TRANSCRIPTS IN THE SOYBEAN-SOYBEAN APHID INTERACTION. Jacqueline Blunck*, A.K. Barber, and P. Twigg, Department of Biology, University of Nebraska at Kearney; and T. Heng-Moss, Department of Entomology, University of Nebraska–Lincoln.

2:00 6. SOYBEAN GENETIC RESPONSE TO SOYBEAN APHIDS AT ADVANCED DAMAGE TIME POINTS. Anna K. Barber* and P. Twigg, Department of Biology, University of Nebraska at Kearney; and T.M. Heng-Moss, Department of Entomology, University of Nebraska–Lincoln.

2:12 7. SEX-SPECIFIC SPLICING OF THE PEA APHID DOUBLESEX GENE. Angela Brichacek* and Soochin Cho, Department of Biology, Creighton University, Omaha; and Alex Wilson, Department of Biology, University of Miami, Coral Gables, FL.

2:24 8. EXON-INTRON STRUCTURE OF THE IMMULECTIN-1 GENE OF *MANDUCA SEXTA*. Brittany Brown* and Brad Ericson, Department of Biology, University of Nebraska at Kearney.

2:36 BREAK

2:50 9. EFFECT OF FOOD AVAILABILITY ON IMMUNE FUNCTION. Robert L. Stanton* and Claudia M. Rauter, Department of Biology, University of Nebraska at Omaha.

3:02 10. *PSEUDOMONAS SYRINGAE* INDUCES CHANGES IN HOST PLANT CHROMATIN IN A TYPE III SECRETION DEPENDENT MANNER. McKenzie Jarecki*, Andrew Karpisek, and Karin van Dijk, Department of Biology, Creighton University, Omaha; and Byeong-ryool Jeong and James Alfano, Center for Plant Science Innovation, University of Nebraska–Lincoln.

3:14 11. IDENTIFICATION OF THE RESIDUES IN THE TYPE III SECRETED TOXIN EXOU REQUIRED FOR CHAPERONE BINDING. Aditya Kulkarni*, Sai Kancharla, Suresh B. Kampalli, and D. W. Rowen, Department of Biology, University of Nebraska at Omaha.

3:26 12. HOST CELL RESPONSES TO N^{PRO} MUTANT BVDV2 INFECTION. Abdulrahman Alkheraif*, C. Topliff, and C. L. Kelling, School of Veterinary Medicine and Biomedical Sciences, University of Nebraska–Lincoln.

3:38 13. ASSESSING PEROXIDASE GENE EXPRESSION IN BUFFALOGRASS CULTIVARS INFESTED WITH CHINCH BUGS. Quinn N. Willet*, A.K. Barber, S.D. Vitosh, and P. Twigg, Department of Biology, University of Nebraska at Kearney.

3:50 14. A NEW APPROACH FOR FINDING PROTEIN SORTING MOTIFS. Caleb V. Schmid*, Daniel H. Haft, and Hesham H. Ali, College of Information Science and Technology, University of Nebraska at Omaha; Department of Bioinformatics, J. Craig Venter Institute, Rockville, MD.

4:02 15. SYSTEMATIC EVALUATION OF SEQUENCE COMPARISON METHODS. Ximeng Zheng* and Zhengxin Chen, College of Information Science and Technology; and Guoqing Lu, Department of Biology, University of Nebraska at Omaha.

BIOLOGICAL AND MEDICAL SCIENCES

SESSION D

Session Chairperson: Annemarie Shibata, Creighton University
Smith Callen Conference Center

1:00 p.m. 1. ANALYSIS OF NEUROGENESIS AND NEURODEGENERATION IN ATOH1-CRE DICER NULL MUTANT MICE. Carrie Cusack*, A. Hake, C. Campbell, S. Hake, and A. Shibata, Department of Biology; and M. Pierce and G. Soukup, Department of Biomedical Sciences, Creighton University, Omaha.

1:12 2. NEUROTROPIC FUNCTION OF MICROGLIAL AND UNDERLYING EPIGENETIC MECHANISMS. Alex Eischeid* and A. Shibata, Department of Biology, Creighton University, Omaha.

1:24 3. CELL PROLIFERATION OF PERITONEAL TISSUE BY PEROXIDE CONTAINING WHITENING PRODUCTS. Sara E. Kluver, Hastings College, Hastings.

1:36 4. THE EFFECT OF THREE ESSENTIAL OILS ON CELL PROLIFERATION IN CELL CULTURE. Eddie J. Krajicek, Department of Biology, Hastings College, Hastings.

1:48 5. *IN VITRO* ELONGATION OF PORCINE EMBRYOS USING ALGINATE HYDROGELS AS A THREE-DIMENSIONAL EXTRACELLULAR MATRIX. Catherine N. Sargus*, Sarah A. Plautz, and Angela K. Pannier, Department of Biological Systems Engineering, University of Nebraska–Lincoln; and Jeremy Miles and Jeff Vallet, USDA-ARS U.S. Meat Animal Research Center (USMARC), Clay Center.

2:00 6. TERATOGENIC EFFECTS OF LOW DOSES OF NICOTINE ON EARLY AVIAN DEVELOPMENT. John T. Olley*, Evelyn Pham, and Mark. V. Reedy, Department of Biology, Creighton University, Omaha; and Philip R. Brauer, Department of Biomedical Sciences, Creighton University Medical Center, Omaha.

2:12 7. THE CORRELATION BETWEEN MATERNAL ANDROSTENEDIONE LEVELS AND NEONATAL MORPHOLOGY OF GEOFFROY'S MARMOSETS, *CALLITHRIX GEOFFROYI*. Ross A. Milam*, Department of Biology, Dana College, Blair; and Adam S. Smith, Andrew K. Birnie, Jeffrey A. French, and Shelton Hendricks, Department of Psychology, University of Nebraska at Omaha.

2:24 8. OLFACTORY SOCIAL BUFFERING IN MARMOSETS (*CALLITHRIX GEOFFROYI*). Emily B. Harrison* and J. A. French, College of Psychobiology, University of Nebraska at Omaha.

2:36 BREAK

2:50 9. CENTRAL ANGIOTENSIN-(1-7) ENHANCES BAROREFLEX GAIN IN RABBITS WITH CHRONIC HEART FAILURE. Sumit Kar*, Department of Biology, Creighton University, Omaha; and Pam Curry and Irving H. Zucker, Department of Cellular and Integrative Physiology, University of Nebraska Medical Center, Omaha.

3:02 10. EFFECT OF ANTIOXIDANTS ON DEPLETED URANIUM INDUCED LIPID PEROXIDATION. Kelli Oelsligle*, A. Benz, and W. Briner, Psychobiology Program, Department of Psychology, University of Nebraska at Kearney.

3:14 11. THE EFFECTS OF 5-HOUR ENERGY DRINK ON HUMAN MOOD, CONCENTRATION, AND ENDURANCE. Adam J. Schapmann* and Janet E. Steele, Department of Biology, University of Nebraska at Kearney.

3:26 12. DISCARDED BOTTLES ENTRAP AND KILL SMALL MAMMALS ALONG ROADSIDES IN NEBRASKA. Owen J. Johnson* and K. Geluso, Department of Biology, University of Nebraska at Kearney.

3:38 13. LEAD CONTAMINATION IN VENISON: ENVIRONMENTAL AND RIFLE HUNTING CONTRIBUTIONS. MacKenzie Hemje, Department of Physics, Hastings College, Hastings.

3:50 14. BUTTERFLIES AND THEIR NECTAR PLANTS AT SPRING CREEK PRAIRIE AUDUBON CENTER. Nicholas C. Bracciano* and Theodore Burk, Department of Biology, Creighton University, Omaha..

4:02 15. A FLORISTIC ANALYSIS AND COMPARISON OF PLANT COMMUNITIES IN HARLAN COUNTY, NEBRASKA. Naomi D. Hastings and Steven J. Rothenberger, Department of Biology, University of Nebraska at Kearney.

4:14 16. THE EFFECTS OF STANOZOLOL ON MURINE THYROID FUNCTION AND ITS ABILITY TO PRODUCE THYROID HORMONE. Jeffrey R. Klug, Department of Biology, Hastings College, Hastings.

4:26 17. THE EFFECTIVENESS OF ESSENTIAL OILS WITH ANTI-MICROBIAL CLAIMS ON INHIBITING GROWTH OF BACTERIA COLLECTED FROM THE SURFACE OF HANDS AND ARMS. Jessica Herse, Department of Biology, Hastings College, Hastings.

CHEMISTRY AND PHYSICS

Chairpersons:
Andy Zhong, Department of Chemistry and Renat Sabirianov, Department of Physics
University of Nebraska at Omaha

SECTION A, CHEMISTRY

Section Chairperson**:** Andy Zhong, Department of Chemistry, University of Nebraska at Omaha
Olin LH - A

8:00 a.m. WELCOME

8:05 1. APPLICATION OF VIRTUAL SCREENING TOWARDS THE FUNCTIONAL ANNOTATION OF YNDB, AN AHSA1 PROTEIN. Jaime L. Stark*, Kelly A. Mercier, and Robert Powers, Department of Chemistry, University of Nebraska–Lincoln; and Geoffrey A. Mueller, Laboratory of Structural Biology, National Institute of Environmental Health Sciences, Durham, NC; and Thomas B. Acton, Rong Xiao, and Gaetano T. Montelione, Center for Advanced Biotechnology and Medicine, Department of Molecular Biology and Biochemistry Northeast Structural Genomics Consortium, Rutgers University, Piscataway, NJ.

8:25 2. DIRECTING THE SELF-ASSEMBLY OF PORPHYRIN-PADDLEWHEEL FRAMEWORKS. Paul M. Barron, H. Chung, and W. Choe*, Department of Chemistry, University of Nebraska–Lincoln.

8:45 3. USE OF ENZYME ACTIVE-SITE COMPARISONS TO STUDY EVOLUTIONARY RELATIONSHIPS. Jennifer C. Copeland* and Robert Powers, Department of Chemistry, University of Nebraska–Lincoln.

9:05 4. COMPARISON OF THE COMPUTED UV/VIS SPECTRUM OF A RUTHENIUM COMPLEX UTILIZING VARIOUS MODEL CHEMISTRIES. Paul A. Karr, Department of Physical Science and Mathematics, Wayne State College, Wayne.

9:25 5. HIGH-EFFICIENCY MICROPHOTOOXIDATION USING MILLIWATT LED SOURCES. John M. Carney*, Chad M. Lomas, Dayna Miyashiro, and Martin Hulce, Department of Chemistry, Creighton University, Omaha.

9:45 BREAK

9:50 6. TOPOLOGY CONTROL OF METAL-ORGANIC FRAMEWORKS THROUGH MULTISTEP SYNTHESIS. Brandon J. Burnett*, P. M. Barron, H. M. Chung, and W. Choe, Department of Chemistry, University of Nebraska–Lincoln.

10:05 7. ONE POT SYNTHESIS OF AMINES FROM HYDROPEROXY ACETALS. Shiva Kumar Kyasa, Thomas Fisher, and Patrick H Dussault*, Department of Chemistry, University of Nebraska–Lincoln.

10:20 8. OPTIMIZATION OF POLYMERIZATION CONDITIONS FOR AFFINITY MONOLITH COLUMNS CONTAINING IMMOBILIZED PROTEINS. Erika Pfaunmiller*, Rangan Mallik, and David S. Hage, Department of Chemistry, University of Nebraska–Lincoln.

10:35 9. DEVELOPMENT AND APPLICATIONS OF MULTI-STEP ONE-POT TANDEM CLICK TRANSFORMATIONS. James T. Fletcher*, Megan J. Lewandowski, David J. Jung, and Matthew E. Keeney, Department of Chemistry, Creighton University, Omaha.

11:00 MAIBEN MEMORIAL LECTURE - OLIN LH - B

12:00 LUNCH

1:00 WELCOME

1:05 10. ENERGY DECOMPOSITION ANALYSIS FOR OPEN- SHELL AND EXCITED MOLECULES. Nandun M. Thellamurege* and Hui Li, Department of Chemistry, University of Nebraska–Lincoln.

1:25 11. CLONING AND EXPRESSION OF THE PATRIDGE PEA ENOLASE GENE. Bobbi Arnold* and Frank Kovacs, Department of Chemistry, University of Nebraska at Kearney.

1:45 12. DOCKING STUDIES AND PHARMACOPHORE MODELING OF MATRIX METALLOPROTEINASE (MMP) INHIBITORS. Theresa D. Faure*, Melissa A. Wees, and Haizhen (Andy) Zhong, Department of Chemistry, University of Nebraska at Omaha.

2:00 13. DETECHIP AND WILDPLUM. Andrea Holmes, Department of Chemistry, Doane College, Crete.

2:15 14. SCREENING OF CHEMICAL LIBRARIES USING ELECTROSPRAY IONIZATION MASS SPECTROMETRY. Levi J. Zehr, Department of Chemistry, University of Nebraska–Lincoln.

2:30 15. SECOND-ORDER MØLLER-PLESSET GRADIENT FOR THE POLARIZABLE CONTINUUM MODEL. Dejun Si* and Hui Li, Department of Chemistry, University of Nebraska–Lincoln.

2:45 BUSINESS MEETING / SELECTION OF 2011 CHAIRS

2:55 16. BIOSYNTHETIC MECHANISM FOR A TETRAMIC ACID-CONTAINING ANTIFUNGAL MACROLACTAM ISOLATED FROM THE BIOCONTROL AGENT LYSOBACTER ENZYMOGENES C3. Lili Lou, Yunxuan Xie, Liangcheng Du*, Department of Chemistry, University of Nebraska–Lincoln.

3:10 17. MOLECULAR DYNAMICS SIMULATIONS OF THE ZIF268/DNA COMPLEX. Sarah B. Norris*, and Haizhen (Andy) Zhong, Department of Chemistry, University of Nebraska at Omaha.

3:25 18. CONFORMATIONAL CHANGES OBSERVED FOR MINERAL-BINDING PEPTIDES UPON ADSORPTION TO HYDROXYAPATITE MINERAL SURFACE, Crystal Vander Zanden*, Mark V. Wilson, and Erin Wilson, Department of Chemistry, Doane College, Crete.

3:40 19. COMPETITIVE TRANSITION STATES AND ACTIVATION ENERGIES EXPLAIN C-1 VS C-4 PHOTODISPLACEMENTS BY HYDROXIDE ION ON 4-NITROANISOLE. Danielle Policarpio*, Hannan Daniel, and Gene Wubbels, Department of Chemistry, University of Nebraska at Kearney.

3:55 20. HIGH-PERFORMANCE AFFINITY CHROMATOGRAPHY STUDIES OF SULFONYLUREA BINDING TO HUMAN SERUM ALBUMIN IN DIABETES. Jeanethe A. Anguizola* and David S. Hage, Department of Chemistry, University of Nebraska–Lincoln.

4:10 21. INVESTIGATIONS OF THE ROLE OF PYRIDINE ON ALKENE OZONOLYSES. Brad M. Johnson* and Patrick H. Dussault, Department of Chemistry, University of Nebraska–Lincoln.

4:25 22. Zr-DOPED CeO_2 NANOTUBES AND NANOWIRES AS CATALYSTS FOR CO OXIDATION. Gonghua Wang*, Neil Lawrence, Joseph R. Brewer, Barry Chin, and Li Cheung, Department of Chemistry, University of Nebraska–Lincoln.

4:40 CLOSING COMMENTS

CHEMISTRY AND PHYSICS

SECTION B, PHYSICS

Chairperson: Renat Sabirianov, Department of Physics, University of Nebraska at Omaha

Planetarium

8:30 a.m. WELCOME

8:30 1. KEYNOTE ADDRESS: FIRST RESULTS FROM THE ALICE DETECTOR. Bjorn S. Nilsen*, on behalf of the ALICE Collaboration, Department of Physics Creighton University, Omaha.

9.00 2. FIRST RESULTS FROM THE LARGE HADRON COLLIDER. Maxwell D. Gregoire, Department of Physics and Astronomy, University of Nebraska–Lincoln.

9:12 3. COLOR MATCHING FUNCTIONS AND CONE FUNDAMENTALS. Nakul Padalkar and Chuck Blatchley*, Department of Physics, Pittsburg State University, Pittsburg, KS.

9.24 4. OBSERVATION OF ϕ MESON PHOTOPRODUCTION AT RHIC THROUGH $\phi \rightarrow K^+K^-$. Jonathan Bruckman, Department of Physics, Creighton University, Omaha.

9.36 5. DARK MATTER AND DETECTION METHODS. T. J. Torpin*, Aruna P. Wanninayake, and G. Duda, Department of Physics, Creighton University, Omaha.

9:48 6. A METHOD FOR IDENTIFYING BOTTOM AND CHARM QUARK JETS USING THE ALICE ELECTROMAGNETIC CALORIMERTER. Andrew J. Turvey* and M. G. Cherney, Department of Physics, Creighton University, Omaha.

10.00 7. THEORETICAL DETERMINATION OF FORM FACTORS USED IN DARK MATTER STUDIES. Aruna P. Wanninayake*, T. J. Torpin, and G. Duda, Department of Physics, Creighton University, Omaha.

10.12 8. ULTRA PERIPHERAL COLLISIONS AND THE TIME OF FLIGHT DETECTOR AT RHIC. Mark Ridder*, Jarrod K. Bang and J. Seger, Department of Physics, Creighton University, Omaha.

10:24 9. TURN THE HEAT DOWN OR DON'T. Jacob Mathieson, Wayne State College, Wayne.

10:36 10. OLBERS' PARADOX IN AN EXPANDING UNIVERSE. Adam N. Davis, Wayne State College, Wayne.

11:00 MAIBEN MEMORIAL LECTURE - OLIN LH - B

12:00 LUNCH

1:00 p.m. 11. PHOTOPRODUCTION OF PHI-MESONS IN 200-GEV AU-AU COLLISIONS AT RHIC. Olamide I. Osinkolu* and Janet Seger, Department of Physics, Creighton University, Omaha.

1:12 12. STATIC AND DYNAMIC LIGHT SCATTERING STUDY OF AQUEOUS SUCROSE SOLUTIONS. Victor Ogunjimi, Department of Physics, Creighton University, Omaha.

1:24 13. DEVELOPMENT OF A DIGITAL HOLOGRAPHIC MICROSCOPE. Robert Thomen, Department of Physics, Creighton University, Omaha.

1.36 14. CORRELATION BETWEEN BIAS FIELDS AND MAGNETORESISTANCE IN CoPt BIASED NiFe/TA/NiFe HETEROSYSTEMS. Yi Wang*, Xi He, S. Sahoo*, and Ch. Binek, Department of Physics and Astronomy, University of Nebraska–Lincoln
*Seagate Technology

1:48 15. ROBUST ISOTHERMAL ELECTRIC SWITCHING OF INTERFACE MAGNETIZATION: A ROUTE TO VOLTAGE-CONTROLLED SPIN ELECTRONICS. Xi He[1]*, Yi Wang[1], N. Wu[1], Siqi Shi[1,4], A. Caruso[2], E. Vescovo[3], K. D. Belashchenko[1], P. Dowben[1], Ch. Binek[1]
[1]Department of Physics and Astronomy, NCMN, University of Nebraska–Lincoln
[2] Department of Physics, University of Missouri, Kansas City KS
[3] Brookhaven National Lab, Nat. Synchrotron Light Source, Upton, NY
[4]Department of Physics, Zhejiang Sci-Tech University, Hangzhou, China

2:00 16. NON-COVALENT FUNCTIONALIZATION OF BORON NITRIDE NANOTUBES WITH SIMPLE AROMATIC RINGS. Yu Zhao, Department of Chemistry, University of Nebraska–Lincoln.

2:12 17. LASER-DRIVEN ELECTRON AND X-RAY BEAMS FOR IMAGING OF DENSE STRUCTURES RELEVANT TO BIOMEDICAL APPLICATIONS. Laila Gharzai*, S. Banerjee, and D. Umstadter, Department of Physics, University of Nebraska–Lincoln.

2:24 18 STRAIN- AND DEFECT-ENHANCED CAVITY FORMATION AND GOLD PRECIPITATION AT THE INTERFACES OF AN Au IRRADIATED ZrO2/SiO2/Si HETEROSTRUCTURE. Philip D. Edmondson, Chongmin Wang, Zihua Zhu, William J. Weber, and Yanwen Zhang, Pacific Northwest National Laboratory, Richland, WA; and Fereydoon Namavar*, Department of Orthopaedic Surgery and Rehabilitation, University of Nebraska Medical Center, Omaha.

2:36 19. RADIATION RESPONSE OF NANOCRYSTALLINE RUTILE (TIO_2). Jiaming Zhang* and Rodney C Ewing, Departments of Geological Sciences and Materials Science & Engineering, University of Michigan, Ann Arbor, MI; and Jie Lian, Department of Mechanical, Aerospace & Nuclear Engineering, Rensselaer Polytechnic Institute, Troy, NY; and Fereydoon Namavar*, University of Nebraska Medical Center, Omaha.

2:48 20. EXPERIMENTAL STUDIES OF THE GIANT DIELECTRIC CONSTANT MATERIALS $CaCu_3Ti_4O_{12}$. Jianjun Liu* and W. N. Mei, Department of Physics; and R. W. Smith, Department of Chemistry, University of Nebraska at Omaha.

3:00 21. NEGATIVE MAGNETORESISTANCE IN CHROMIUM CONTAINING DIAMOND LIKE CARBON BASED HETEROSTRUCTURES. J.A. Colón Santana*, A. Sokolov, I. Ketsman, and P.A. Dowben, Department of Physics and Astronomy and the Nebraska Center for Materials and Nanoscience, University of Nebraska–Lincoln; and V. Singh, V. Palshin, and Y.B. Losovyj, Center for Advanced Microstructures and Devices, Louisiana State University, LA ; and E.M.

Handberg and A.G. Petukhov, Department of Physics, South Dakota School of Mines and Technology, Rapid City, SD.

3:12 22. PIEZOELECTRIC TUNING OF EXCHANGE BIAS FROM NEGATIVE TO POSITIVE BIAS FIELDS. Srinivas Polisetty* and Christian Binek, Department of Physics and Astronomy and Nebraska Center for Materials and Nanoscience, University of Nebraska–Lincoln; and Sarbeswar Sahoo, Seagate Technology, Minneapolis, MN.

3:24 23. AGING IN MAGNETIC SUPERLATTICES. T. Mukherjee* and Ch. Binek*, Department of Physics & Astronomy and the Nebraska Center for Materials and Nanoscience, University of Nebraska–Lincoln; and M. Pleimling, Department of Physics,Virginia Polytechnic Institute and State University Blacksburg, VA.

3:36 24. MAGNETOCALORIC PROPERTIES OF CO/CR SUPERLATTICES. T. Mukherjee*, R. Skomski, D.J. Sellmyer, and Ch. Binek*, Department of Physics & Astronomy and the Nebraska Center for Materials and Nanoscience, University of Nebraska–Lincoln.

3:48 25. MAGNETO-ELASTIC PROPERTIES OF FRUSTRATED TRIANGULAR MAGNETIC STRUCTURE: FLEXOMAGNETIC EFFECT. P.Lukashev* and R. Sabirianov, Department of Physics, University of Nebraska at Omaha.

4:00 26. ORDERED-DISORDERED TRANSITION FOR CORRUGATED AU LAYERS. Keisuke Fukutani* and P.A. Dowben, Department of Physics and Astronomy, Nebraska Center for Materials and Nanoscience, University of Nebraska–Lincoln; and N. Lozova and Yaroslav B. Losovyj, Center for Advanced Microstructure and Devices, Louisiana State University, Baton Rouge, LA; and S.M. Zuber, Institute of Experimental Physics, University of Wroclaw, pl. M. Borna 9, Wroclaw, Poland; and P. Galiy, Electronics Department, Ivan Franko National University of Lviv, 50 Dragomanov Str., 79005 Lviv, Ukraine.

4:12 27. BIOCOMPATIBILITY OF ENGINEERED NANOSTRUCTURES. Alexander Rubinstein* and Ali Khoynezhad, Department of Surgery, Creighton University Medical Center, Omaha; and John D. Jackson, Department of Pathology and Microbiology, and J. Graham Sharp, Department of Genetics, Cell Biology and Anatomy, University of Nebraska Medical Center, Omaha; and Renat F. Sabirianov, Department of Physics, University of Nebraska at Omaha; and Fereydoon Namavar, Roxanna M. Namavar, Hani Haider, Edward V. Fehringer, and Kevin L.Garvin, Department of Orthopaedic Surgery and Rehabilitation, University of Nebraska Medical Center, Omaha.

4:24 28. DOMAIN SWITCHING DYNAMICS IN THE FERROELECTRIC POLYMERS FILMS STUDIED AT THE NANOSCALE. P. Sharma*, T. Reece, A. Rasmussen, S. Roberts, S. Ducharme, and A. Gruverman, Department of Physics and Astronomy, University of Nebraska–Lincoln.

4:36 29. SPIN DENSITY DISTRIBUTION IN SYSTEMS WITH FRUSTRATED TRIANGULAR MAGNETIC STRUCTURE. P. Lukashev* and R. Sabirianov, University of Nebraska at Omaha.

4:48 CLOSING REMARKS

EARTH SCIENCES

Chairperson: Jennifer L. Balmat and Michael B. Leite
Department of Physical and Life Sciences
Chadron State College, Chadron
Olin 224

1:30 p.m. OPENING REMARKS

1:35 1. CONCRETIONS IN NEBRASKA SANDSTONES PROVIDE CLUES TO THE HISTORY OF UTAH'S NAVAJO AQUIFER. David B. Loope*, Richard M. Kettler, and Karrie A. Weber, Department of Geosciences, University of Nebraska–Lincoln.

1:50 2. EVIDENCE OF A LATE PALEOZOIC FAUNAL KILL IN THE HUGHES CREEK SHALE MEMBER, FORAKER FORMATION (LATE PENNSYLVANIAN?/ EARLY PERMIAN?) IN SOUTH-EASTERN NEBRASKA. Roger K. Pabian* and Robert F. Diffendal, Jr., Conservation and Survey Division, School of Natural Resources, University of Nebraska–Lincoln.

2:05 3. IDENTIFICATION OF SUBTLE STRUCTURAL FEATURES IN THE BLACK HILLS-PINE RIDGE REGION, NEBRASKA-SOUTH DAKOTA,USA. Jennifer L. Balmat*, Michael B. Leite, and Joseph Reedy, Department of Physical and Life Sciences, Chadron State College, Chadron.

2:20 4. AN ANALYSIS OF DROUGHT IMPACTS IN KENTUCKY. Crystal J. Bergman, School of Natural Resources, University of Nebraska–Lincoln.

2:35 5. CONTROLS ON GEOMORPHOLOGY OF STREAMS FLOWING OFF THE PINE RIDGE, NORTHWESTERN NEBRASKA. Kodi Young* and Michael B. Leite, Department of Physical and Life Sciences, Chadron State College, Chadron.

2:50 6. ASSESSING THE FEASIBILITY OF MONITORING NITRATES AND PHOSPHATES IN CHADRON CREEK, NORTHWESTERN NEBRASKA. Alula Mazengia, Department of Physical and Life Sciences, Chadron State College, Chadron.

3:05 7. DETERMINING THE PATHWAYS OF CALCIUM IONS BY EXAMINING NATURALLY OCCURRING HOT SPRINGS OF THE FALL RIVER, HOT SPRINGS, SD. Cole Vejraska* and Benjamin Puffer, Chemistry Department, Chadron State College, Chadron.

3:20 8. WAVELET INSPIRED ANALYSIS OF DISCRETE ATMOSPHERIC DATA. Grant Saltzgaber*, Michael L. Larsen, and Aaron Clark, Department of Physics, University of Nebraska at Kearney.

3:35 9. DIRECT IMAGING OF RAINDROP IMPACTS. Josh Beck*, Michael L. Larsen, and Aaron Clark, Department of Physics, University of Nebraska at Kearney.

3:50 10. FILTER PAPER BASED DISDROMETER. Ben Fullerton* and Michael L. Larsen, Department of Physics, University of Nebraska at Kearney.

4:05 11. AFFORDABLE WAYS OF MEASURING RAIN ONE DROP AT A TIME. Michael L. Larsen, Department of Physics, University of Nebraska at Kearney.

4:20 CLOSING REMARKS and SECTION MEETING

HISTORY/PHILOSOPHY OF SCIENCE

Chairperson: Claire M. Oswald
College of Saint Mary, Omaha
Olin 325

8:30 a.m. 1. THE HISTORY OF THE DEVELOPMENT OF THE THEORY OF EVOLUTION: THE THEOLOGICAL AND SCIENTIFIC UNDERPINNINGS, Claire M. Oswald, Department of Biology, College of Saint Mary, Omaha.

8:50 2. DID INDUCTION AND EMPIRICISM PLAY A ROLE IN DARWIN'S DEVELOPMENT OF HIS THEORY OF NATURAL SELELCTION? Claire M. Oswald, Department of Biology, College of Saint Mary, Omaha.

9:10 SECTION BUSINESS MEETING

TEACHING OF SCIENCE AND MATH

Chairperson: Julia Polak
Exeter-Milligan Public Schools, Exeter
Olin 325

9:30 1. DETERMINING THE NITRATE, ARSENIC AND ATRAZINE LEVELS ALONG THE PLATTE AND REPUBLICAN RIVERS. Randall Lienemann*, Franklin Public School, Franklin; and Mike Zarate, Lexington Public School, Lexington.

9:50 2. PUSHING ARROWS: THE STEPWISE DEVELOPMENT OF ARROW PUSHING SKILLS. Josh Yost* and David Peitz, Department of Physical Science and Mathematics,Wayne State College, Wayne.

10:10 3. USING MOLECULAR ORBITALS TO ILLUSTRATE AND UNDERSTAND ORGANIC REACTIONS. David Peitz, Department of Physical Science and Mathematics, Wayne State College, Wayne.

10:30 4. ENHANCING LABORATORY SAFETY INSTRUCTION: INTRODUCING MSDS SHEETS INTO THE FRESHMAN LABORATORY. Kendra Timm* and M. L. Ettel, Department of Physical Sciences and Mathematics, Wayne State College, Wayne.

MAIBEN MEMORIAL LECTURE - OLIN LH - B

COLLEGIATE ACADEMY

BIOLOGY

Chairperson: Jeff Isaacson, Department of Biology
Nebraska Wesleyan University, Lincoln

SESSION A

Olin LH-B

8:00 a.m. 1. INDIRECT TREE RECRUITMENT BY SMALL MAMMALS AS SIGNIFICANT DISPERSERS OF *SWARTZIA CUBENSIS* AND *DIALIUM GUIANENSE* SEEDS IN A NEOTROPIC FOREST. Eric A. Noel*, Department of Biology, Nebraska Wesleyan University, Lincoln; and B.R. McMillan, Department of Plant and Wildlife Sciences, Brigham Young University, Provo, UT; and J.A. Yunger, Department of Biological and Environmental Sciences, Governors State University, University Park, IL.

8:12 2. A YEAR LONG VIEW OF THE SEASONAL AND DIEL PRESENCE OF HUMPBACK WHALES IN THE ANTARCTIC. Taryn L. Overton*, Department of Biology, Nebraska Wesleyan University, Lincoln; and S.V. Parijs, Protected Species Branch, Northeast Fisheries Science Center, Woods Hole, MA; and I.V. Opzeeland, Ocean Acoustic, Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany.

8:24 3. THE ISOLATION AND ANALYSIS OF QUORUM SENSING MOLECULES IN *MYCOBACTERIUM SMEGMATIS* (TREVISAN) LEHMANN & NEUMANN. Bailey A. Maresh*, J. Harden, F. Iseka, and A. McKinney-Williams, Department of Biology, Nebraska Wesleyan University, Lincoln; and J.D. Cirillo, Texas A&M University, College Station, TX.

8:36 4. IDENTIFYING GENES THAT FUNCTION IN QUORUM SENSING, A TYPE OF CELL-TO-CELL COMMUNICATION, IN *MYCOBACTERIUM SMEGMATIS* (TREVISAN) LEHMANN & NEUMANN. Kirsten L. Foster*, P.J. Aylward, and A. McKinney-Williams, Department of Biology, Nebraska Wesleyan University, Lincoln; and J. Cirillo, College of Medicine, Texas A & M University, College Station, TX.

8:48 5. *IN VITRO* MECHANISM FOR THE INTERNALIZATION OF SUPERPARAMAGNETIC IRON-OXIDE NANOPARTICLES BY MONOCYTE-MACROPHAGES. Christopher L. Anderson*, Department of Biology, Nebraska Wesleyan University, Lincoln, NE; and A. Beduneau, C. B. Grotepas, H. Dou, and H. E. Gendelman, Department of Pharmacology and Experimental Neuroscience, University of Nebraska Medical Center, Omaha.

9:00 6. THE DEVELOPMENT OF SILAC TO ELUCIDATE PHENOTYPIC CHANGES OCCURRING DURING MACROPHAGE DIFFERENTIATION. Andrew R. Stothert* and D. Benham, Department of Biology, Nebraska Wesleyan University, Lincoln; and S. Kraft-Terry, Department of Pharmacology and Experimental Neuroscience, University of Nebraska Medical Center, Omaha.

9:12 7. ETHANOL-ELICITED PROTEASOME INHIBITION AFTER CYTOCHROME P450 2E1 INDUCTION IN HEPATOMA CELLS. Alyssa A. Sickel*, Department of Biology, Nebraska Wesleyan University, Lincoln; and T.M. Donohue, Jr., Liver Study Unit, Omaha VA Medical Center, Omaha.

9:24 BREAK

9:36 8. MODULATION OF BACTERIAL BIOFILM FORMATION BY SPECIFIC AND NONSPECIFIC ANTIBODIES. Dane Bowder* and Barbara J. Clement, Department of Biology, Doane College, Crete.

9:48 9. THE CHARACTERIZATION OF METHYLMALONATE SEMIALDEHYDE DEHYDROGENASE IN *ARABIDOPSIS THALIANA*. Kyla J. Ronhovde* and K.A. Lucas, Doane College, Crete.

10:00 10. A COMPARISON OF RANGE-OF-MOTION RECOVERY FOLLOWING ANTERIOR CRUCIATE LIGAMENT REPAIR WITH TWO GRAFT TYPES. Brett Cribelli* and Kate Marley, Department of Biology, Doane College, Crete.

10:12 11. DEVELOPMENT OF AN IN VITRO MODEL TO INVESTIGATE COMMUNICATION BETWEEN RESPIRATORY EPITHELIAL CELLS AND ANTGEN PRESENTING CELLS. Brian M. Robinson* and T.M. McGinn, Department of Biology, Nebraska Wesleyan University, Lincoln.

10:24 12. EXPLORATION OF INNATE IMMUNE RESPONSES OF RESPIRATORY EPITHELIAL CELLS *IN VITRO*. Nathan Persell* and T.M. McGinn, Department of Biology, Nebraska Wesleyan University, Lincoln.

10:36 13. INHIBITION OF BOVINE LEUKEMIA VIRUS mRNA EXPRESSION BY A COMBINATION OF RIBAVIRIN AND INTERFERON. Meghen L. Friesen*, and J. Isaacson, Nebraska Wesleyan University, Lincoln; and J. Reddy and C. Wood, Nebraska Center for Virology, University of Nebraska–Lincoln.

11:00 MAIBEN MEMORIAL LECTURE, OLIN LH-B

12:00 LUNCH

1:00 p.m.14. KINETIC ASSESSMENT OF *STAPHYLOCOCCUS AUREUS* BIOFILM MATRIX GROWTH. Ian Engebretsen*, Department of Life Sciences, Wayne State College, Wayne; and Tammy Kielian, Department of Pathology and Microbiology, University of Nebraska Medical Center, Omaha.

1:12 15. USE OF *LISTERIA MONOCYTOGENES* INLB AS A POSSIBLE DRUG DELIVERY SYSTEM. Derek Moormeier*, Shawn Pearcy and Doug Christensen, Department of Life Sciences, Wayne State College, Wayne.

1:24 16. USE OF *LISTERIA MONOCYTOGENES* INLC AS A POSSIBLE COMPONENT IN A DRUG DELIVERY SYSTEM. David Seger* and Doug Christensen. Department of Life Sciences, Wayne State College, Wayne.

1:36 17. MINIMALLY TRANSFORMED HUMAN EMBRYONIC PALATAL MESENCHYME (HEPM) CELLS EXPRESS N-CADHERIN. Anthony Bieck*, Sarah Merithew*, and K. Marley, Department of Biology, Doane College, Crete.

1:48 18. STEPWISE CLONING AND EVALUATION OF FRAGMENTS OF THE HUMAN N-CADHERIN PROMOTER. Kelsey Bryant*, Nicole Williams*, and K. Marley, Department of Biology, Doane College, Crete.

2:00 19. THE N-CADHERIN PROMOTER IS METHYLATED IN HUMAN BT-20 BREAST CANCER CELLS. Conner Christensen*, Sarah Pracht*, and K. Marley, Department of Biology, Doane College, Crete.

2:12 20. PROTEASES IN ENVIRONMENTAL DUST INDUCE AIRWAY EPITHELIAL INFLAMMATORY MEDIATORS. Chelsea P. Dean*, College of Saint Mary, Omaha; and A.J. Heires[2,3], P. Dodmane[4], M. Toews[4], and D.J. Romberger[2,3], Pulmonary, Critical Care, Sleep and Allergy Section[2] and Pharmacology and Experimental Neuroscience Department [4], University of Nebraska Medical Center, and Veteran's Affairs Medical Center[3], Omaha.

2:24 BREAK

2:36 21. STRESS-INDUCED DIET CHANGES CAUSES WEIGHT GAIN IN MICE. Leanna J. Kalvelage, Department of Biology, Dana College, Blair.

2:48 22. AMERICAN PIKA (*OCHOTONA PRINCEPS*) SURVEY IN GLACIER NATIONAL PARK AND ITS RELATIONSHIP TO GLOBAL WARMING. Mason Lantz*, Department of Biology, Dana College, Blair; and Lucas Moyer-Horner, Gavin Jones, and John Stuhler, Department of Zoology, University of Wisconsin-Madison, Madison, WI.

3:00 23. THE EFFECT OF THE PRESUMPTIVE BLOOD-TEST REAGENT, FLUORESCIN, ON THE RECOVERY OF DNA. Abby S. Krueger, Department of Biology, Nebraska Wesleyan University, Lincoln.

3:12 24. THE EFFECTS OF DIFFERENT SHIPPING TEMPERATURES AND STORAGE TIMES ON THE DETECTION OF *TRITRICHOMONAS FOETUS* BY PCR. Laura J. Welch*, Department of Biology, Nebraska Wesleyan University, Lincoln; and D.R. Smith, Department of Veterinary and Biomedical Sciences, University of Nebraska–Lincoln.

3:24 25. Δ-9 TETRAHYDROCANNABINOL CONCENTRATION OF HEMP (*CANNABIS SATIVA* L.) IN LANCASTER COUNTY, NEBRASKA. Douglas A. Bauer, Department of Biology, Nebraska Wesleyan University, Lincoln.

COLLEGIATE ACADEMY

BIOLOGY

Chairperson: Jeff Isaacson, Department of Biology
Nebraska Wesleyan University, Lincoln

SESSION B

Olin 249

1:00 p.m 1. PREDATOR RISK ASSESSMENT FOR THREE LEVELS OF THREATENING APPROACHES IN THE BLACK TAILED PRAIRIE DOG (*CYNOMYS LUDOVICIANUS* (ORD, 1815)). Chase B. Edwards, Department of Biology, Nebraska Wesleyan University, Lincoln.

1:12 2. EFFECTS OF VARYING LEVELS OF NITROGEN APPLICATION ON CORN YIELDS. Evan D. Janzen, Department of Biology, Nebraska Wesleyan University, Lincoln.

1:24 3. THE EFFECT OF HUMAN DISTURBANCE ON THE FORAGING BEHAVIOR OF PIPING PLOVERS (*CHARADRIUS MELODUS* (ORD, 1824)) AND SANDERLINGS (*CALIDRIS ALBA* (PALLAS, 1764)). Logan McGuffey, Department of Biology, Nebraska Wesleyan University, Lincoln.

1:36 4. THE EFFECTS OF BLACK AND CLEAR PLASTIC MULCH ON SOIL TEMPERATURE, PREVENTION OF WEEDS, AND YIELD OF NORTH AMERICAN CANTALOUPE (*CUCUMIS MELO* L. VAR. *RETICULATUS* (NAUDIN)). Samuel L. Thomsen, Department of Biology, Nebraska Wesleyan University, Lincoln.

1:48 5. A COMPARISON OF EXTRACTION TECHNIQUES FOR ISOLATING BIOLOGICALLY ACTIVE QUORUM SENSING MOLECULES FROM *MYCOBACTERIUM SMEGMATIS*. Jessica J. Harden*, B.A. Maresh, F. Iseka, and A. McKinney-Williams, Department of Biology, Nebraska Wesleyan University, Lincoln; and J.D. Cirillo, College of Medicine, Texas A&M University, College Station, TX.

2:00 6. SCREENING AN OVER-EXPRESSION *MYCOBACTERIUM SMEGMATIS* LIBRARY TO DETERMINE THE GENE(S) INVOLVED IN QUORUM SENSING. Erica L. Thiel* and A. McKinney-Williams, Department of Biology, Nebraska Wesleyan University, Lincoln; and J.D. Cirillo, College of Medicine, Texas A&M University, College Station, TX.

2:12 7. A TRANSPOSON MUTAGENESIS EXPERIMENT OF *MYCOBACTERIUM SMEGMATIS* (TREVISAN) LEHMANN & NEUMANN USING HIMAR1 MYCOBACTERIOPHAGE TO IDENTIFY INTEGRAL QUORUM SENSING GENES. Paul J. Aylward*, K.L. Foster, and A. McKinney-Williams, Department of Biology, Nebraska Wesleyan University, Lincoln.

2:24 BREAK

2:36 8. GENETIC VARIATION IN FLUORESCENT *PSEUDOMONAD PhlID* IN RHIZOPHERIC POPULATIONS OBTAINED FROM WHEAT AND SORGHUM SOIL AT THE HAVELOCK AREA OF LINCOLN, NEBRASKA. Alexander D. Bednar*, Department of Biology, Nebraska Wesleyan University, Lincoln; and D. Funnell-Harris, USDA-ARS, Grain, Forage, and Bioenergy Research, University of Nebraska, Department of Plant Pathology, Lincoln.

2:48 9. CHARACTERIZATION OF SET DOMAIN PROTEINS FROM AN ALGAE AND A BACTERIUM. John R. Eisenhart*, Department of Biology, Nebraska Wesleyan University, Lincoln; and K. van Dijk and H. Cerutti, School of Biological Sciences, University of Nebraska–Lincoln.

3:00 10. CHEMICAL EFFECTS ON REPRODUCTIVE STRATEGIES OF SOYBEAN CYST NEMATODE (*HETERODERA GLYCINES*) IN FIELD CONDITIONS. Matthew A. Hagge*, Department of Biology, Nebraska Wesleyan University, Lincoln; and J.L. Behn and T.A. Jackson, College of Agricultural Sciences and Natural Resources, University of Nebraska–Lincoln.

3:12 11. SURVIVAL OF *CANDIDA ALBICANS* ON COPPER ALLOY METALLIC SURFACES. Travis M. Krans, Department of Biology, Nebraska Wesleyan University, Lincoln.

3:24 12. THE ROLE OF FEOB IN LOW AFFINITY MANGANESE TRANSPORT IN SYNECHOCYSTIS SP. PCC 6803. Erin Kubicek, Department of Biology, Nebraska Wesleyan University, Lincoln.

3:36 13. SOIL MICROBIAL COUNTS AS AFFECTED BY DECOMPOSITION OF PIGLETS. Angelia J. Francis and Phyllis Higley, Department of Biology, College of Saint Mary, Omaha.

COLLEGIATE ACADEMY

CHEMISTRY AND PHYSICS

Chairpersons: David Treichel and Nathaniel Fackler
Nebraska Wesleyan University, Lincoln

SESSION A

Session Chairperson, David Treichel
Olin 324

8:00 a.m. 1. DETECHIP® 2.0: AN ENHANCED MOLECULAR SENSOR ARRAY FOR DRUGS AND THEIR CUTTING AGENTS. Jordan Beaber*, J. Francis, J. Groathouse, M.V. Wilson, K.A. Lucas, and A.E. Holmes, Department of Chemistry, Doane College, Crete.

8:12 2. DEVELOPMENT OF AN ASSAY TO DETECT AND QUANTITATE ATRAZINE IN SOIL. Charles Cohlmia* and Eric J. Haas, Department of Chemistry, Creighton University, Omaha.

8:24 3. SYNTHESIS AND ENZYME INHIBITION STUDIES OF MULTIDENTATE RU(II) ORGANOMETALLIC COMPLEXES. David J. Jung* and James T. Fletcher, Department of Chemistry, Creighton University, Omaha.

8:36 4. GENERAL SYNTHESIS AND ATOM-PROBE MAPPING OF RARE EARTH HEXABORIDE NANOWIRES. Joseph R. Brewer*, Robert Jacobberger, and Chin Li Cheung, Department of Chemistry, University of Nebraska–Lincoln.

8:48 5. PROBING BIOMINIERALIZATION USING A NOVEL DOUBLE DIFFUSION GEL SYSTEM. Garrett Paulman*, E. Doane, K. Troxel, M.W. Plano Clark, M. Wilson, and E. Wilson, Department of Chemistry, Doane College, Crete.

9:00 6. DETERMINATION OF CAFFEINE AND TAURINE IN ENERGY DRINKS USING REVERSED PHASE CHROMATOGRAPHY. Jared Loschen* and Annette C. Moser, University of Nebraska at Kearney.

9:12 7. EXTRACTION OF DENTIN PHOSPHOPHORYN FROM BOVINE FEMUR. Elizabeth T. Doane*, Mark V. Wilson, and Erin Wilson, Department of Chemistry, Doane College, Crete.

9:24 BREAK

9:36 8. LOCALIZATION AND GENETIC ENGINEERING OF A NOVEL COILED COIL-HELIX COILED COIL-HELIX DOMAIN CONTAINING PROTEIN, CHCHD6. Kilie Stover*, Karisa Stover, Josh Sypal and Sharmin M. Sikich, Department of Physical Sciences and Mathematics, Wayne State College, Wayne.

9.48 9. MULTI-STEP ONE-POT CLICK REACTIONS OF 'FAST' DYE DIAZONIUM SALTS. Jacqueline E. Reilly* and James T. Fletcher, Department of Chemistry, Creighton University, Omaha.

10:00 10. DEVELOPMENT OF A CHROMATOGRAPHIC IMMUNOASSAY TO DETERMINE THE CONCENTRATION OF VIRGINIAMYCIN IN WATER SAMPLES. Taylor Carlson* and Annette C. Moser, Department of Chemistry, University of Nebraska at Kearney.

10:08 11. SECONDARY STRUCTURE OF OSTEOPONTIN-BASED PEPTIDES CHANGE UPON ADSORPTION TO HYDROXYAPATITE. Crystal Vander Zanden*, M.V. Wilson, E. Wilson, Department of Chemistry, Doane College, Crete.

10:16 12. COMPARISON OF THE COMPUTED UV/VIS SPECTRA OF PYRAZINACENES AT VARIOUS MODEL CHEMISTRIES. Sarah Salisbury* and Paul A. Karr, Department of Physical Science and Mathematics, Wayne State College, Wayne.

10:24 13. WILD PLUM: PARTICLES OF IMPROVED OPTICAL BRIGHTNESS AND FLUORESCENCE. Jordan Groathouse*, M.Wilson, K. Lucas, and A. Holmes, Department of Chemistry, Doane College, Crete.

11:00 MAIBEN MEMORIAL LECTURE - OLIN LH - B

COLLEGIATE ACADEMY

CHEMISTRY AND PHYSICS

SESSION A

Session Chairperson: Nathaniel Fackler and David Treichel

Olin 324

1:00 p.m. 14. ULTRA PERIPHERAL COLLISIONS AND THE TIME OF FLIGHT DETECTOR AT RHIC. Mark Ridder*, Jarrod K. Bang* and J. Seger, Department of Physics, Creighton University, Omaha.

1:12 15. OBSERVATIONS OF THE FRESNEL AND ARAGO LAWS USING A MACH-ZEHNDER INTERFEROMETER. Kayla Peltz, Physics Department, Hastings College, Hastings.

1:24 16. USING TWO-PHOTON EXCITED FLUROESCENCE INTENSITY AND LIFETIME-BASED NADH IMAGING TO INVESTIGATE THE EMT6 CELL LINE. Clifford S. Hecht* and Michael G. Nichols, Department of Physics, Creighton University, Omaha.

1:36 17. MEASURING ION FLIGHT TIMES USING AN EMBEDDED REAL TIME CONTROLLER. Nathan B. Clayburn* and D. R. Sieglaff, Department of Physics and Astronomy, Nebraska Wesleyan University, Lincoln.

1:48 18. IN SEARCH OF THE PHI-MESON. Steven D. Pillen* and J. Duckworth*, Department of Physics, Creighton University, Omaha.

2:00 19. THE DOPPLER EFFECT USING THE METHOD OF IMAGES. Tyler Bartsch, Physics Department, Hastings College, Hastings.

2:12 20. CELL ELASTICITY DETERMINATION BY STATIC AND DYNAMIC OPTICAL STRETCHING. Anya Burkart* and Michael G. Nichols, Physics Department, Creighton University, Omaha.

2:30 BREAK

2:36 21. CHARACTERIZATION OF THE DOMAINS OF THE NOVEL MITOCHONDRIAL PROTEINS, CHCHD3 AND CHCHD6. Joshua Sypal*, Karisa Stover, Kilie Stover and Sharmin M. Sikich, Department of Physical Sciences and Mathematics, Wayne State College, Wayne.

2:48 22. SYNTHESIS OF DIARYLALKYNE-CONJUGATED PEPTIDES FOR CHEMOSENSING APPLICATIONS. Douglas E. Deever* and James T. Fletcher, Department of Chemistry, Creighton University, Omaha.

3:00 23. LEFT-HANDED Z-DNA: A STRUCTURAL MOTIF THAT IS RECOGNIZED BY A CYANINE DYE. Jacob Francis*, M.V. Wilson, A. Draney, M. Guericke, H. Chu, D. Nott, J. Groathouse, J. Beaber, H. Barcena, K. Lucas, and A.E. Holmes, Department of Chemistry, Doane College, Crete; and A. D'Urso, M. Balaz, Department of Chemistry, University of Wyoming, Laramie, WY; and M.F. Rouhier, Department of Chemistry and Biochemistry, Miami University, Oxford, OH; and R. Purello, Dipartimento di Scienze Chimiche, University of Catania, Catania, Italy.

3:12 24. UNDERSTANDING ANTIBIOTIC RESISTANCE. Kassandra Connell*, April Wylie and David Peitz, Department of Physical Science and Mathematics; and Doug Christensen, Department of Life Sciences, Wayne State College, Wayne.

3:24 25. OPTIMIZATION OF EXTRACTION OF BONE NONCOLLAGENOUS MATRIX PROTEINS FROM PORCINE FEMUR. Alicia Exstrom*, Morgan Martin*, Elizabeth Doane, Mark V. Wilson, and Erin Wilson, Department of Chemistry, Doane College, Crete.

3:36 26. SYNTHESIS OF PYRENE-BASED METAL CATION CHEMOSENSORS USING CLICK REACTIONS. Thomas W. Whetstone* and James T. Fletcher, Department of Chemistry, Creighton University, Omaha.

3:48 27. GENETIC ENGINEERING OF A NOVEL MITOCHONDRIAL PROTEIN, CHCHD3. Karisa Stover*, Josh Sypal, Kilie Stover, and Sharmin M. Sikich, Department of Physical Sciences and Mathematics, Wayne State College, Wayne.