2009 Symposium schedule and sponsors

University of Nevada Las Vegas

Aug 11th, 7:30 AM - Jul 12th, 4:45 PM

Repository Citation

2009 Renewable Energy Symposium

August 11 & 12
Stan Fulton Building

http://osep.unlv.edu/Esy2009
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<td>7:30 AM</td>
<td>Morning Coffee &amp; Tea / Check-in</td>
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<tr>
<td>8:15 AM</td>
<td>Opening Session</td>
<td>Emcee: Nate Tannenbaum</td>
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<tr>
<td>8:15 AM</td>
<td>Welcome from UNLV</td>
<td>Neal Smatresk – UNLV, President</td>
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<td>8:25 AM</td>
<td>Welcome from UNLV</td>
<td>Ronald Smith – UNLV, VP Research</td>
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<td>8:35 AM</td>
<td>Welcome from the Organizer</td>
<td>Oliver Hemmers – UNLV, Exec. Dir. HRC</td>
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<td>8:45 AM</td>
<td>Renewable Energy Production</td>
<td>Thomas Fair – NV Energy</td>
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<td>9:30 AM</td>
<td>Nevada's Changing Renewable Energy Landscape</td>
<td>Kathleen Drakulich – McDonald Carano Wilson</td>
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<tr>
<td>10:15 AM</td>
<td>BREAK – Beverages Served</td>
<td>Sponsored by: NV Energy</td>
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<tr>
<td>10:30 AM</td>
<td>The Nevada Legislature Perspective on Renewable Energy</td>
<td>Michael A. Schneider – Nevada State Senate</td>
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<td>11:15 AM</td>
<td>Over a barrel: America faces a worldwide energy crisis</td>
<td>Fred A. Schlachter – Lawrence Berkeley National Laboratory</td>
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<td>12:15 PM</td>
<td>LUNCH – Talk on Education and Energy Innovation: NSHE’s Central Role in</td>
<td>Sponsored by: McDonald Carano Wilson, LLC</td>
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<td></td>
<td>Transforming Nevada’s Economy by James Croce – Nevada Institute for Renewable</td>
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<td>Energy Commercialization</td>
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<tr>
<td>1:15 PM</td>
<td>Afternoon Session</td>
<td>Chair: Rik Hurt - UNLV</td>
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<tr>
<td>1:15 PM</td>
<td>Solar One – A Brief History and Status</td>
<td>Robert Cable – Acciona</td>
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<tr>
<td>1:45 PM</td>
<td>Conceptual Design for a Solid Particle Solar Receiver</td>
<td>Yitung Chen – UNLV</td>
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<tr>
<td>2:15 PM</td>
<td>Bringing Solar Energy to 7BB People; an Example of the Helios Program</td>
<td>Cyrus Wadia – Lawrence Berkeley National Laboratory</td>
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<td>2:45 PM</td>
<td>BREAK – Beverages Served</td>
<td>Sponsored by: Harry Reid Center, UNLV</td>
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<tr>
<td>3:00 PM</td>
<td>Current Projects at the UNLV Center for Energy Research</td>
<td>Robert Boehm – UNLV</td>
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<tr>
<td>3:30 PM</td>
<td>Solar thermochemical cycles based on sulfur</td>
<td>Lloyd Brown – General Atomics</td>
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<tr>
<td>4:00 PM</td>
<td>Impact of Partial Shading on Photovoltaic Power Production</td>
<td>Yahia Baghzouz – UNLV</td>
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<tr>
<td>4:30 PM</td>
<td>Solar Energy Activities in New Mexico</td>
<td>Jeffrey Nelson – Sandia National Laboratory</td>
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<td>Morning Session</td>
<td>Chair: Ravi Subramanian - UNR</td>
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<td>Oliver Hemmers – UNLV, Exec. Dir. HRC</td>
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<td>Steve Wells – DRI, President</td>
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<tr>
<td>8:30 AM</td>
<td>Renewable Energy Development in NV</td>
<td>Randolph Townsend – Nevada State Senator</td>
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<td>8:50 AM</td>
<td>Nevada Renewable Energy Consortium</td>
<td>Steve Wells – DRI, President</td>
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<td>10:10 AM</td>
<td>BREAK – Beverages Served</td>
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<tr>
<td>10:30 AM</td>
<td>Overview of UNR Renewable Energy Projects</td>
<td>Mano Misra – UNR</td>
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<td>12:30 PM</td>
<td>LUNCH – Talk on The UNLV Solar Minor by Thomas Piechota &amp; David Hassenzahl – UNLV</td>
<td>Sponsored by: Bombard Electric</td>
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<td>1:30 PM</td>
<td>Afternoon Session</td>
<td>Chair: Anthony Hechanova - UNLV</td>
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<td>1:30 PM</td>
<td>Status of Comprehensive Biofuels Program</td>
<td>Lindsey Bierer – General Atomics</td>
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<td>2:00 PM</td>
<td>Enhanced Geothermal Energy Proposal for Southern Nevada</td>
<td>Michael Voegele – UNLV</td>
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<td>2:30 PM</td>
<td>Hydrogen-Related R&amp;D at Sandia National Laboratory</td>
<td>Lennie Klebanoff – Sandia National Laboratory</td>
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<td>Hydrogen in noncrystalline materials: from solar cells to hydrogen storage</td>
<td>Anatolii Shkrebtiili – University of Ontario</td>
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<td>3:45 PM</td>
<td>Mitigating CO₂ Production From Coal-To-Liquids Processes</td>
<td>Robert Walty – C2O Corporation</td>
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<tr>
<td>4:15 PM</td>
<td>Renewable Energy Initiatives at UNLV</td>
<td>Anthony Hechanova - UNLV</td>
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PRESENTER

BIOGRAPHIES
Dr. Yahia Baghzouz – University of Nevada, Las Vegas
Dr. Baghzouz’s area of interest is in electrical power systems. His field of expertise within this branch of electrical engineering focuses on electric power quality and renewable resources. He worked on related projects sponsored by Louisiana Power and Light, Gulf-States Utilities, Western Area Power Administration, Cray Research Inc., Nevada Power Co. and Loudon Engineering Co. He served as Conference Chairman for the IEEE 7th Int. Conference on Harmonics and Quality of Power held in 1996 in Las Vegas, NV. He presently co-chairs the executive committee of IEEE- ICHQP. Dr. Baghzouz authored/co-authored over 100 articles on power quality, machine modeling and distributed generation. He teaches courses in power system engineering, power electronics, and circuits at the University of Nevada, Las Vegas.

Dr. Robert Boehm – University of Nevada, Las Vegas
Dr. Boehm is Distinguished Professor of Mechanical Engineering at UNLV the Director of the Center for Energy Research (CER). He is a technical editor of the journal Energy, Registered Professional Engineer, and a Fellow of the American Society of Mechanical Engineers. He received a Ph.D. in Mechanical Engineering from UC Berkeley.

Dr. Lloyd C. Brown – General Atomics
Dr. Lloyd C. Brown is a Senior Technical Advisor at General Atomics, which he joined in 1973. He has been with the Inertial Confinement Fusion Technology division of the Energy Group in GA since 1991. His specialty is the design and development, including the mechanical and electrical design, of novel chemical processes and process equipment. Dr. Brown was responsible for engineering development of the GA sulfur iodine thermochemical hydrogen production process and was principal investigator of a joint GA, Sandia National Laboratories (SNL) and University of Kentucky research team investigating hydrogen production by thermochemical means using advanced nuclear reactors. He currently participates in joint GA, UNLV, SNL, University of Colorado, and National Renewable Energy Laboratory investigations into alternative processes for the thermochemical production of hydrogen using solar energy. Dr. Brown received his Ph.D. in Chemical Engineering from UC Berkeley.

Mr. Lindsey Bierer – General Atomics
Mr. Bierer has over 30 years of experience in the energy development and environmental markets dating back to the Trans-Alaska Pipeline project. Since 1998 he has focused on technology development in those markets, and has been an in-house consultant to GA providing strategic analyses, business development and proposal support to multiple GA technology divisions to include biofuels, nuclear reactors, radar systems, chemical demilitarization, nuclear waste transportation and destruction, advanced sensors, and laser systems. Over the past 4 years Mr. Bierer has concentrated on biofuels technology development in conjunction with significant corporate commitments and internal investments by GA in that area.

Mr. Robert G. Cable – Acciona Solar Power
As Plant Manager, Robert G. Cable is responsible for the operation and maintenance of Nevada Solar One (NSO) for Acciona Solar Power (ASP). He has served in this role since 2007. Mr. Cable brings more than 20 years of renewable energy experience to Acciona Solar Power. Prior to becoming the Plant Manager at NSO, he served as the Construction Site Manager to Acciona Solar Power (formerly known as Solargenix Energy). In this role he represented the owners during construction of Nevada Solar One, the largest solar thermal electric power plant to be built since the last SEGS plant in 1990. Mr. Cable’s leadership in the renewable energy sector has included his contribution to 11 solar thermal power plants ranging from 1 to 80 megawatts in size. He was involved in the Construction and Operation & Maintenance phase of the SEGS I – IX plants, located in California’s Mojave Desert. Mr. Cable’s work has been instrumental in the operational successes that have resulted throughout the evolution and advancement of solar thermal energy plants in
the United States. Mr. Cable earned a Bachelor of Science degree in Mechanical Engineering from California State Polytechnic University- Pomona.

**Dr. Yitung Chen – University of Nevada, Las Vegas**

Dr. Yitung Chen is Professor of the Department of Mechanical Engineering at the University of Nevada, Las Vegas. His academic and industrial experiences in numerical and experimental fluid mechanics and thermal-fluid sciences cover multidisciplinary areas of mechanical, biomedical, environmental, chemical, and nuclear engineering. Dr. Chen is an expert in computational and experimental aspects of momentum, heat, and mass transfer.

**Dr. Anatoli Chkrebtii - University of Ontario Institute of Technology**

Prof. A. Chkrebtii (publications under A.I. SHKREBTII) is internationally renowned for his innovative research that correlate at unprecedented level dynamics, electronics, and optics of modern materials and their application in renewable photovoltaics energy systems. He is a coauthor of two monographs and more than 100 publications in distinguished research journals. Prof. A. Chkrebtii’s "properties of materials in motion" field is based on the most advanced computational techniques in solid state physics. It uniquely combines parameter-free (i) molecular dynamics to track materials’ properties and their evolution at the most detailed atomic level in a wide temperature range; (ii) electronic structure tools to follow distribution of an individual electron, its transitions and related single-electron chemistry; (iii) advanced signal processing techniques that extracts non-equilibrium temperature, pressure, and external radiation dependent properties, (iv) sophisticated computer visualization and (v) most comprehensive description of the optical response for various materials characterization and photovoltaics. His recent focus is on hydrogen-bonding, ubiquitous in physical, chemical, and biological sciences. Such comprehensive combination represents a turning point in a very accurate description and understanding of the structural, dynamical and chemical properties of hydrogen in confined systems, including nano-composite materials, including extreme conditions.

**Mr. James A. Croce - Nevada Institute for Renewable Energy Commercialization (NIREC)**

As president and CEO, Mr. Croce provides overall strategic direction and guidance to the Nevada Institute for Renewable Energy Commercialization (NIREC), a Nevada nonprofit corporation dedicated to transforming renewable energy ideas into sustainable enterprises. Mr. Croce joined the organization in June 2009 at NIREC’s Incline Village, Nevada, headquarters. Prior to his position with NIREC, Mr. Croce held positions with Lipten Company, an energy services firm focused on the development of biomass-fueled renewable energy systems; NextEnergy Center; DTE Energy Technologies; as well as engineering and management positions for 3M and ANR Pipeline Company. In 2005, Mr. Croce was appointed by Michigan Governor Jennifer M. Granholm to serve on the state’s Strategic Economic Investment and Commercialization Board, charged with overseeing Michigan’s 21st Century Jobs Fund program. He was also later appointed by Governor Granholm to the Michigan Renewable Fuels Commission, charged with developing strategies to encourage the growth of renewable fuels. Jim is the co-founder and a member of the board of directors of the Michigan Sustainable Energy Coalition, a renewable energy policy advocacy group located in Lansing, Michigan. Jim is a member of Wayne State University’s Engineering College Board of Visitors and Electrical Engineering Industrial Advisory Council. He received The Grant Thornton Leader and Innovator of the Year Award. Jim received a BS with honors in electrical and computer engineering from Wayne State University. His post graduate work was in business administration.

**Ms. Kathleen Drakulich – McDonald Carano Wilson LLP**

With more than 17 years experience in the energy and public utility industry, Ms. Drakulich is a Partner at the state wide law firm of McDonald Carano Wilson and a member of its statewide Energy, Environment and Natural Resources Practice Group. Ms. Drakulich has served as assistant general counsel for Nevada’s largest electric providers and as private
counsel for Nevada's largest energy users, representing them in rate case and integrated resource plan applications, environmental permitting, purchase power agreement and line extension proceedings, renewable energy initiatives and other regulatory matters. She served as legislative counsel for the utilities during numerous sessions of the Nevada Legislature. In private practice, Ms. Drakulich has represented local, national and international energy and public utility firms in procurement matters, supply and purchase contract negotiations, as well as permitting and construction of renewable energy and fossil fuel facilities. She has also represented entities in Nevada seeking permits from local, state and federal governmental agencies. Named as one of "The Best Lawyers in America" in 2008 and 2009, Ms. Drakulich was appointed to Senator Harry Reid's Renewable Energy Blue Ribbon Panel in 2008. She earned her Juris Doctor from the University of the Pacific, McGeorge School of Law, in 1986. She also holds a bachelor's degree from the University of California, Berkeley.

Thomas Fair – NV Energy
Mr. Fair was named Vice President, Renewable Energy in February 2009. He is responsible for NV Energy's procurement and development of renewable energy – green power sources such as geothermal, solar and wind – for both Nevada Power and Sierra Pacific Power. Fair was previously Executive, Renewable Energy, a position he obtained in February 2006 after serving as director of Environmental Services since October 2004. Fair's career consists of 35 years in the electric power industry. Prior to joining Sierra Pacific Resources, he spent five years developing wind energy projects, initially as a Project Director at FPL Energy and then as Development Director at Renewable Energy Systems North America LLC. He was responsible for various stages of the development of more than 400 megawatts of wind projects now in operation. In addition to several other executive-level environmental affairs and planning positions, Mr. Fair also served as Staff Assistant to the Assistant Secretary for Water and Science at the U.S. Department of the Interior, under the President's Executive Exchange program. He holds a Bachelor of Science Degree in Architecture from the University of Cincinnati, a Masters Degree in Urban Planning from the University of Michigan, and a Masters Degree in Business Administration from the University of Miami.

Nevada Power has served customers in southern Nevada since 1906. During that time we've grown along with Las Vegas, Henderson, Laughlin and North Las Vegas and have been proud to help power these dynamic and vital communities. Nevada Power proudly serves more than 807,000 electric customers in Las Vegas, North Las Vegas, Henderson, other communities (and the unincorporated areas) of Clark County as well as a small portion of Nye county. Nevada Power's service territory encompasses approximately 4,500 square miles. Our company is made up of approximately 1,700 employees who proudly keep the power flowing to the brightest few miles of road in the world, the Las Vegas Strip and the surrounding area. Because of the strong success of the gaming industry and Clark County in general, Nevada Power faces the challenge of a phenomenal 4% growth rate, one of the highest of any electric utility the country.

Ms. Paula Garret - University of Nevada, Las Vegas
Paula Garrett is a Program Associate with the Public Land Institute's Walking Box Ranch. She also is a research scientist with UNLV's Harry Reid Center. Paula has been involved in environmental quality and protection since 1989. During that time she has worked with water, air and soil ecosystems as well as with individual species and habitats.

Dr. Anthony Hechanova – University of Nevada, Las Vegas
Dr. Hechanova is the Associate Executive Director for Sustainable and Clean Energy Programs at the UNLV Harry Reid Center for Environmental Studies and the Program Manager of the UNLV Transmutation Research Program under the auspices of the U.S. Department of Energy. He joined UNLV as a research professor in 1995 and was tasked to develop the university’s nuclear research programs in 2001 that later included two new academic programs that started Fall term 2004: a Ph.D. program in Radiochemistry and a
Masters of Science program in Materials and Nuclear Engineering. In November, 2008, Dr. Hechanova began developing renewable energy programs at UNLV including new initiatives in deep hot rock geothermal energy and concentrated solar power. He received an M.S. and Ph.D. in Nuclear Engineering from the Massachusetts Institute of Technology. He received a B.S. and M.S. in Mechanical Engineering from the University of California, Davis.

Dr. Oliver Hemmers – University of Nevada, Las Vegas
Dr. Oliver Hemmers serves as the Executive Director of the Harry Reid Center at UNLV. Dr. Oliver Hemmers received his Ph.D. in Physics in 1993 from the Technical University in Berlin, Germany with specialization in x-ray atomic and molecular spectroscopy. Recent research focuses on developments of biofuels and new materials for hydrogen fuel storage. He currently manages a multi-year, multi-million dollar biodiesel project funded by the US DOE. Over the past 10 years he has been a principal investigator or co-PI on several research projects at UNLV totaling over $8M. Dr. Hemmers is a Research Professor and has given about 200 presentations at national and international meetings, published approximately 90 research articles, written one book, and holds one patent. He is a member of the American Physical Society and a reviewer for the American Institute of Physics and the Institute of Physics. Prior to taking the position at the Harry Reid Center he was the Director of the Office of Strategic Energy Programs at UNLV, established under his guidance in October 2006, and prior to that he was an Associate Research Professor in the Department of Chemistry.

Dr. S. Kent Hoekman, Ph.D. – Desert Research Institute
Dr. Hoekman is a Research Professor within the Division of Atmospheric Sciences at the Desert Research Institute (DRI). His professional interests include environmental impacts of energy production, distribution, and use; development of renewable and sustainable energy systems; and air quality impacts of vehicle emissions. From 2001 through 2007 Dr. Hoekman served as Executive Director of the Division of Atmospheric Sciences (DAS) within DRI. This Division conducts fundamental and applied research in the natural atmosphere, addressing a broad range of topics. Prior to joining DRI, Dr. Hoekman spent 21 years at Chevron, where his work focused on technical and regulatory issues pertaining to transportation fuels, mobile source emission controls, vehicle technology, and urban air quality. He holds a Ph.D. in Organic Chemistry from Iowa State University.

Dr. Rick Hurt - University of Nevada, Las Vegas
Dr. Rick Hurt holds 2 Bachelors of Science degrees from UNLV: one in Geology and one in Mechanical Engineering. He is currently pursuing a Master's degree in Mechanical Engineering. Rick has been a staff research engineer at the UNLV Center for Energy Research for past several years. Some highlights of his work include assisting manufacturers in the installation, operation, testing and maintenance of numerous systems including (but not limited to): the Solar Dish-Stirling systems, the Concentrated Photovoltaic power generation system, the Amonix High Concentrating Photovoltaic Systems, the Advanced Parabolic Trough Pilot Project, the Near Zero Energy Home Project, the Pulte High Efficient Homes project, New American Homes, Solar and wind resource assessment projects, and the renewable hydrogen generation and vehicle conversion project.

Dr. Allen Johnson - University of Nevada, Las Vegas
Prof. Johnson is a chemist at UNLV and the HRC and has been involved in energy concerns since the beginning of his career. As an undergraduate he participated in solar and nuclear energy programs, earning a BS in chemistry from the California Institute of Technology. After earning a MS in organic chemistry at the University of Washington, he took a research chemist position at Battelle NW where he studied combustion chemistry and became aware of some of the issues associated with the nuclear waste storage facility at Hanford. He earned his PhD at the University of California, Berkeley where he studied surface chemistry (related to catalysis and nanotechnology) and then did postdoctoral work
at the NBS (now NIST), Cambridge University, and the University of Washington. Many of his accomplishments have involved developing new instrumentation and new techniques. Prof. Johnson has been studying materials issues related to energy production while at UNLV, and sponsored a College of Engineering student-run senior project on a novel solar tracker.

**Dr. Lennie Klebanoff – Sandia National Laboratory**
Dr. Klebanoff is currently a Principle Member of the Technical Staff at Sandia National Laboratories in Livermore, CA. He serves as the Director of the DOE Metal Hydride Center of Excellence, one of 3 national centers funded by the DOE Energy Efficiency and Renewable Energy Office, to develop a solid-state hydrogen storage system for automotive applications. He received his Ph.D. in Physical Chemistry at U.C. Berkeley in 1985, and after a post-doc stay at the National Bureau of Standards (now NIST), he moved to the faculty of Lehigh University. At Lehigh, he performed spin-resolved x-ray photoelectron spectroscopy (SRXPS) studies of magnetic surface, eventually attaining the position of Full Professor. He moved to Sandia in 1997, and has helped lead a number of technology projects involving semiconductor manufacturing, biofuels deployment, fuel cells, hydrogen science and technology and aircraft technology.

**Dr. Kristina Lipinska - University of Nevada, Las Vegas**
Over the past 15 years Dr. Kalita has initiated and led various research projects in physics and materials science all over the world. While at the University Pierre et Marie Curie – Paris VI, France she was the architect and leader in a major collaborative initiative with the international glass company St. Gobain. While working for the Italian Agency for Alternative Energy Sources she led several energy-related research projects. At the International Center for Theoretical Physics in Trieste, Italy, she directed an international team of students and researchers from academia form all over the world, working on discovery of new superconductors. In Tokyo, Japan, while a professor at Waseda, Lipinska captured on behalf of the university a major research project with the Nippon Electric Glass Company, in the frame of which she managed a team of researchers and glass engineers. At the Harry Reid Center of the University of Nevada Las Vegas, Prof. Lipinska is collaborating closely with Prof. Hemmers, Director, on various efforts to capture more funding for research in renewable energies. Currently Prof. Lipinska is the program director on two DOE research grants on materials for renewable energies, totaling about $2M and she is also in the process of setting up a new, state-of-the art materials science and laser spectroscopy laboratory at UNLV.

**Dr. Jian Ma - University of Nevada, Las Vegas**
Dr. Ma is an assistant research professor of Mechanical Engineering Department and Harry Reid Center for Environmental Studies at University of Nevada, Las Vegas. He obtained his Ph.D. in the School of Mechanical and Aerospace Engineering at Nanyang Technological University, Singapore in 2004. He received his B.S. and M.S degrees in the Department of Applied Mechanics at Fudan University, China in 1995 and 1998, respectively. His research interests involve thermal fluid sciences, process/system engineering, and renewable energy systems.

**Dr. Mano Misra – University of Nevada, Reno**
Dr. Misra is a Professor of Chemical and Materials Engineering at the University of Nevada, Reno (UNR). He is also the Director of the Renewable Energy Center at UNR. His role as a director is to coordinate all renewable energy related research, education and industry/university collaboration for renewable energy technology development. Dr. Misra’s research interests involve alternate energy such as solar, hydrogen, biofuels and nuclear.
Dr. Jeffrey Nelson – Sandia National Laboratory
After receiving his PhD in theoretical solid-state theory from the University of California, Davis in 1987 Dr. Nelson joined the theoretical materials science group at Sandia National Laboratories, Livermore. At Sandia Livermore, Jeff developed and applied advanced electronic structure methods to understand semiconductor surfaces and interfaces. In 1989 Jeff joined the semiconductor physics group at Sandia National Laboratories, Albuquerque, NM, where he pioneered the use of massively parallel computers to predict the electronic and optical properties of semiconductor interfaces, surfaces and alloys. Much of his work focused on understanding the fundamental properties of phosphide- and nitride-based visible lighting emitting compound semiconductors. In 1996, Jeff was promoted to manager of the Semiconductor Materials and Device Department, and developed world-class research and development efforts in compound semiconductors, and nanoscale synthesis, characterization and modeling of advanced materials. His group was the first to demonstrate high power UV light emitting diodes in the 350-380nm range, with applications in chemical sensing and white light generation. Jeff joined Uniroyal Optoelectronics (UOE) as the Chief Technology Officer in 2000, where he developed R&D and manufacturing operations in Tampa, Florida. After leaving UOE, Jeff was a consulted to the Department of Energy on the Solid-State Lighting Initiative, and co-founded Medical Lighting Solutions, a newly established business focused on medical applications of LED technology. Currently, Jeff is managing the Solar Technologies Department and acting manager senior manager for the Energy and Infrastructure Futures Group at Sandia National Laboratories. Jeff has authored over 50 scientific papers, and was one of the original authors of the white paper outlining the need for a National Lighting Initiative focused on realizing energy efficient LED-based white light technology.

Dr. Thomas Piechota - University of Nevada, Las Vegas
Dr. Thomas C. Piechota is the Director of Sustainability and Multidisciplinary Research and Associate Professor in the Department of Civil and Environmental Engineering at the University of Nevada, Las Vegas (UNLV). He received his B.S. in Civil Engineering in 1989 from Northern Arizona University, his M.S. in Civil and Environmental Engineering in 1993 from UCLA, and his Ph.D. in Civil and Environmental Engineering in 1997 from UCLA. In his current position, Dr. Piechota is helping move forward the Urban Sustainability Initiative which is a campus-wide effort related to sustainability related research, education, and outreach. His teaching and research interests are in the fields of climate change, sustainability, surface water hydrology, hydroclimatology, droughts, water resources planning, and stormwater quality in urban environments. In 2003, Dr. Piechota received a National Science Foundation CAREER Award for the project “Improved Hydrologic Drought Forecasting Using Climate Information.” Currently, Dr. Piechota is part of a state-wide team that has received $15,000,000 in funding from National Science Foundation to study climate change in the State of Nevada. Dr. Piechota is a licensed Professional Engineer in the States of Nevada and California and serves on various committees with the American Society of Civil Engineers.

Dr. Fred Schlachter – Lawrence Berkeley National Lab
Dr. Schlachter has been a Staff Scientist at Advanced Light Source, Lawrence Berkeley National Laboratory, University of California since 1989, where he performs research with national and international collaborations of scientists at synchrotron light source: high resolution atomic and molecular photoionization. Dr. Schlachter is also responsible for developing research capabilities, facilitating research by visiting scientists, initiating education and science outreach, training students, and developing energy-research programs. His research interests include Fundamental experimental research in atomic and molecular physics, investigating the role of electron correlation in atomic and molecular systems: the search for quantum chaos; interaction of light with ionized matter. Energy sources; energy end-use efficiency; efficiency in transportation; global climate change. Dr. Schlachter is a Fellow of the American Physical Society, has refereed approximately 150 publications in physics, is Director of NATO Advanced Studies Institute (Italy), Co-Director of Pan-American Advanced Studies Institute (Brazil), Co-Chair of International Workshop on Photoionization (San Francisco) and International Vacuum Ultraviolet Conference (San Francisco). His research has been supported by the Department of Energy, the Department of Defense, the National Science Foundation, and the Laboratory Directed Research and Development Program at Lawrence Berkeley National Laboratory.
Francisco), and has 2 patents. Dr. Schlachter has a Ph.D. in Physics from the University of Wisconsin, Madison.

Senator Mike Schneider – District 11, Clark County, Nevada
Representing Senate District 11 in Clark County, Senator Mike Schneider is a veteran legislator and advocate for smart growth and policies that protect consumers and maintain Nevada's attractiveness for business development. He served in the Nevada Assembly from 1993-1995 and was first elected to the Nevada State Senate in 1996. In the 2009 Legislative Session, he served as the Senate President pro Tempore. Sen. Schneider attended Bishop Gorman High School and graduated from the University of Nevada, Las Vegas with a degree in Hotel Administration. He currently works as a real estate consultant and is a member of the Southern Nevada Homebuilders Association and the Greater Las Vegas Association of Realtors. In the 2009 session, Senator Schneider served as Chair of the Energy, Infrastructure and Transportation Committee and oversaw the most comprehensive renewable energy legislation passed in Nevada thus far. Senator Schneider has extensive knowledge on energy issues affecting Nevada. In 2008, he served on United States Senator Harry Reid's Blue Ribbon Panel on Energy and he has also served on the Advisory Committee on Energy at the National Conference of State Legislatures. In addition, he was the recipient of the Leadership in Energy Efficiency Award from Southwest Energy Efficiency Project (SWEEP) in 2007.

Dr. Neal Smatresk, University of Nevada, Las Vegas
Dr. Neal J. Smatresk was named President of the University of Nevada, Las Vegas on Aug. 6, 2009. Since 2007, he has served as Executive Vice President and Provost, where he is responsible for leadership and administration of all academic and research programs, spanning 15 colleges and two professional schools. Dr. Smatresk received his Ph.D. in zoology from the University of Texas at Austin in 1980. Following post-doctoral training at the University of Pennsylvania School of Medicine, he joined the University of Texas, Arlington (UTA) department of biology in 1982. In his 22 years at UTA, he served as Chair of Biology and later Dean of Science, until his appointment as the chief academic officer at the University of Hawaii at Manoa in 2004. During his tenure, the University of Hawaii at Manoa entered the ranks of the top 25 federally funded institutions, gained three National Academy of Science members, and received recognition from the Chinese Ministry of Education as a Confucius Institute, an honor shared by only 11 other U.S. institutions. Dr. Smatresk has received a number of teaching awards, and his research in cardiorespiratory physiology has resulted in over 50 papers and book chapters, and grants from the National Science Foundation and National Institutes of Health. As the chief academic officer of the University of Nevada, Las Vegas, Dr. Smatresk has led the efforts to forge a new strategic plan that commits to improving educational access and success for its diverse students, to provide regionally responsive research growth for the improvement and diversification of the Southern Nevada economic base, and to supply critically needed services for this rapidly growing region.

In addition to his teaching and administrative roles, Smatresk has devoted considerable effort to kindergarten to doctorate (K-20) science outreach programs and teacher professional development and has participated in a number of consortia focused on science, technology, engineering and math (STEM) career development. He has been deeply engaged in community college articulation efforts in Texas, Hawaii and now in Nevada and has worked to expand educational opportunity and access for underserved populations. UNLV is a doctoral-degree-granting institution of 28,500 students and 3,150 faculty and staff. Founded in 1957, the university offers more than 220 undergraduate, master's and doctoral degree programs. UNLV is located on a 350-acre campus in dynamic Southern Nevada and is classified in the category of Research Universities (high research activity) by the Carnegie Foundation for the Advancement of Teaching.
Dr. Ron Smith - University of Nevada, Las Vegas

Dr. Ron Smith is presently Vice President for Research and Dean of the Graduate College at the University of Nevada, Las Vegas, and is also Founding Executive Director of the UNLV Office of Urban Sustainability Initiatives. USI promotes multi-disciplinary research, educational programs, and collaborative partnerships focusing on environmental, economic, and social/cultural sustainability in the community, Nevada, and region. Both the Brookings Mountain West office (intermountain West policy studies) and the Lincy Institute (research and public engagement focusing on community health, education, and social systems) report to VPR Smith, and he is also co-institutional representative for the UNLV-Midtown community project.

He received his PhD in Sociology from Washington State University and his academic specializations are community and urban sociology, community sustainability, architectural sociology, and organizational performance. He has over 30 years of university administrative experience, having served previously as Interim President, Interim Senior Vice President and Provost, 11 years as Dean of a Graduate College, three times Chair of the Department of Sociology, and Director and Principal Investigator for two research centers, including the Center for Health Information Analysis. He has published three books, over 30 journal articles and book chapters, and numerous other professional publications, presented over 50 papers at professional conferences, and received several teaching and administrative awards, including the UNLV Inaugural Award for Outstanding Department Chair/Director.

Senator Randolph Townsend (R-NV) - District 4, Washoe County, Nevada

Senator Randolph J. Townsend is a Republican member of the Nevada Senate, representing Washoe County District 4 since 1982. He also serves as President and Board Member of NorthStar Investors, Inc. His legislative service includes: Nevada Senate, three special and ten regular sessions; Chairman, Senate Committee on Commerce and Labor; Chairman, Legislative Commission; Chairman, Legislative Commission’s Utility Oversight Committee; and State Chairman, American Legislative Exchange Council. He has served on numerous civic boards and councils including: Advisory Board, Committee to Aid Abused Women; Chairman, Coalition for Affordable Energy; National Council of Senior Citizens; Chairman, Washoe Association for Retarded Citizens; Adjunct Faculty, University of Nevada, Reno; Pi Delta Phi; Board of Directors, Junior Achievement of Northern Nevada; Teen View, Inc.; Nevada Business Week, Inc.; United Way of Northern Nevada. Senator Townsend has been awarded many honors including: "Legislator of Year" Social Workers Association; Truckee Meadows Human Service Association "Politician of the Year;" Nevada State Medical Association "Nicholas J. Horn Award;" National Alliance for the Mentally Ill "Distinguished Legislator;" and Nevada State Psychological Association 2000 "Nevada Legislative Advocacy Award." He received a M.Ed. in 1975 and a B.S. in 1972, both from the University of Nevada, Reno. He also attended the College du Leman, Versoix, Switzerland, and San Francisco State University.

Mr. Nate Tannenbaum

Mr. Tannenbaum is the Anchorman of the internet-only daily tv newscast on the website of the Las Vegas Review-Journal newspaper. You can see him on "RJtv" any time of the day or night at www.lvrj.com/rjtv. You may also see Mr. Tannenbaum from time to time on two local tv stations. He's a fill-in "on call" weather guy at Fox5. And he's the host of KLVX Channel 10's VegasPBS Community Billboard, letting folks know about various events going on around town each week. If you just can't get enough Nate, look for his weekly radio show, "Playing Favorites," on the UNLV radio station, every Wednesday at 6pm on KUNV 91.5FM. Visiting celebrities and Las Vegans making unique community contributions stop by to chat, bringing their favorite music tracks with them.
Dr. Michael Voegele - University of Nevada, Las Vegas/Nye County
Dr. Michael Voegele is a geotechnical engineer with experience involving development, planning, and implementation of solutions to complex technical problems in many aspects of civil and geotechnical engineering. Currently, Dr. Voegele serves as a consultant to the Nye County Nevada Nuclear Waste Repository Project Office, where he is involved in scientific program oversight, education, and outreach; and, UNLV, where he was the technical proposal manager for a proposal for an Enhanced Geothermal System Demonstration at the Nevada Test Site. Prior to 2004, Dr. Voegele spent 23 years as the Senior Technical and Science Adviser for Bechtel SAIC and Science Applications International Corporation on the Yucca Mountain Site Characterization Project. As a geotechnical engineer, he was instrumental in the design and was responsible for the implementation of experimental programs to assess thermal, mechanical, and hydrologic parameters under high temperatures. Dr. Voegele received a Bachelors, M.S., and Ph.D. in Geological Engineering from the University of Minnesota.

Dr. Cyrus Wadia – Lawrence Berkeley National Lab
Dr. Wadia has spent the last five years at U.C. Berkeley and the Lawrence Berkeley National Lab (LBNL) in pursuit of a new low cost photovoltaic technology using metal sulfides. Leveraging his knowledge in both the natural and social sciences, Dr. Wadia’s research covers both exhaustible resource economics and the aqueous chemistry of nanoparticles. His work has resulted in two provisional patents and three peer reviewed journal articles highlighting the strength of a multi-disciplinary approach to solving the complicated issues of renewable energy supply. His work was a first of its kind at U.C. Berkeley and has spawned a pervasive interest in basic science research informed by fundamental economics and guided by market potential. Presently he continues his work in this area of photovoltaic materials but is also collaborating with other LBNL scientists to leverage his approach to explore new and innovative materials for battery storage. Dr. Wadia was awarded the E.P.A Star fellowship. In 2006 he founded the U.C. Berkeley PV Idealab, a collaboration of all photovoltaic research activity on campus and in 2008 he was named by the Chancellors office as the VP of Idealabs for the entire U.C. Berkeley campus. Since heading this effort, he has awarded funding and support to ten new Idealabs on campus.

Prior to his doctoral studies, Dr. Wadia spent over 7 years in Silicon Valley launching new technology to market. Most recently, he has demonstrated his entrepreneurship skills as the founder of a boutique Internet services startup specializing in complex data analysis. This company has grown to 6 employees and supports over 300 users. Dr. Wadia earned his PhD in Energy & Resources from U.C. Berkeley and holds both an M.S. and S.B. in Chemical Engineering from MIT.

Mr. Robert Walty, C2O Corporation
Mr. Walty is Executive Vice President of C2O, (Coal To Oil), a Nevada Corporation with the goal of establishing 10-15 new coal to synthetic crude oil projects in North America. He has been involved in the analysis and development of commercial coal-to-liquids applications for over 15 years, most recently focusing on mitigating the environmental effects of coal-to-liquids production, including mitigation of process-derived CO₂. Mr. Walty holds a Bachelor of Science Degree from California State University Chico in Industrial Engineering and has led numerous business development and R&D programs in industrial and chemical process development and automation and holds several patents in the field.

Dr. Stephen G. Wells – Desert Research Institute
Dr. Stephen G. Wells, President of the Desert Research Institute (DRI) of the Nevada System of Higher Education, oversees one of the world’s largest multidisciplinary environmental research organizations with approximately 500 scientists, technologists, students, and other support staff. Wells has served as the chief executive officer of DRI since 1999, overseeing the growth of institutional revenues from $23.8 million per year to greater than $60 million currently as well as state-of-the-art research campuses in both Las
Vegas and Reno, as well as satellite research stations in Boulder City, Nevada; at the Sierra Nevada College near Lake Tahoe; and at 10,500 ft elevation near Steamboat Springs, Colorado. Dr. Wells leads three core divisions and four interdisciplinary science centers that serve the State of Nevada and every continent in the world, focusing on air, land, life, and water. He is a graduate faculty member in the Hydrologic Sciences Program and Department of Geological Sciences at the University of Nevada, Reno and is an adjunct research professor at the Institute of Earth Environment, Chinese Academy of Sciences in Xi'an, China. He serves on the boards of Research Parks Ltd., Economic Development Authority of Western Nevada, Nevada Development Authority, Nevada Institute of Renewable Energy Commercialization, Gathering Genius Inc. as well as on advisory boards of the University of Arizona's Biosphere 2, the Nevada Museum of Art, Indiana University, and the University of Cincinnati. Dr. Wells has published over 70 peer-reviewed papers and book chapters and edited six volumes in the earth sciences, and he has received three national awards from the Geological Society of America. Dr. Wells has held faculty positions at the University of New Mexico, University of California-Riverside, Los Alamos National Laboratory, and the U.S. Geological Survey.
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