City Manager's CEC Advisory Panel

Name	Title	Organization
David M. Engelthaler	Director, Programs and Operations	TGEN North
		Unites States
		Geological
Robert Hart	Scientist in Charge	Survey
	Associate Director, Water Resources	University of
Jean E. McLain, PhD	Research Center	Arizona
		Northern
	Director, Academic Sustainability	Arizona
Rod Parnell, PhD	Programs	University
		Coconino
		County Health
Randy J Phillips	Division Manager	Services District
		Northern
	Director for Research Capacity	Arizona
Catherine Proper, PhD	Development	University
Amy Pruden, PhD	Associate Professor	Virginia Tech
		Flagstaff Medical
Forrest Ritland, MD	Pathologist	Center
		University of
Channah Rock, PhD	Water Quality Extension Specialist	Arizona
Robin Silver, MD	Emergency Room Physician	
	Co-Director Arizona Laboratory for	University of
Shane A. Snyder, PhD	Emerging Contaminants	Arizona
		City of
Tom Whitmer	Director of Natural Resources	Cottonwood

David M. Engelthaler

David M. Engelthaler is the Director of Programs and Operations at TGen North in Flagstaff, AZ, part of the non-profit Translational Genomics Research Institute. TGen North is focused on advancing public health, clinical medicine and biodefense through targeted microbial genomics. Besides directing the day-to-day operations at TGen North, Dave oversees a number of research groups working on developing tools to detect and analyze infectious diseases such as influenza, valley fever, MRSA, cholera, plague, anthrax and others. He is also the co-founder of PathoGene LLC, a for-profit company, developed to transform mid to late stage diagnostic intellectual property into market-ready assays.

David was recently the Arizona State Epidemiologist and the Arizona Biodefense Coordinator. He has eighteen years experience in public health related research, including ten years with the Arizona Department of Health Services and three years with the Centers for Disease Control and Prevention, working with such diseases as plague and tularemia. He has published numerous papers on epidemiology, disease ecology, genetics, and microbiology. David has several years experience in leading teams, managing large programs and multi-million dollar budgets, establishing international collaborations, and developing education programs. He has briefed the Arizona legislature and has testified before Congress. He continues to work closely with state, federal, and international health agencies to help solve a variety of health and safety related problems.

David got his undergraduate in Biology at Northern Arizona University, has a Master's Degree in Microbiology from Colorado State University and he currently lectures and teaches classes on infectious diseases and epidemiology at NAU, where he hold a research faculty position. In addition to the Arizona Biomedical Research Commission, Dave sits on the Coconino County Health Advisory Board and a number of non-profit boards and committees in Arizona.

Robert J. Hart

Bob attended the University of Nebraska at Omaha where he received a Bachelor of Science in biology in 1976. He continued graduate studies at the University of Nebraska at Lincoln and further education at the University of Kansas from 1978 to 1983. After short employment opportunities with the U.S. Fish and Wildlife Service and the Bureau of Land Management, in Michigan and Wyoming respectively, he began his U.S. Geological Survey (USGS) career in Lawrence, KS. In Lawrence, he managed a network of streamflow and water-quality-gages. He later became a project chief for several hydrology programs that included surface water and reservoir modeling, groundwater-flow modeling, and water-quality studies of hazardous-waste sites and the pilot USGS NAWQA program. In 1987, he transferred to the Northern Arizona Programs Office, Arizona Water Science Center (AZWSC), Flagstaff, AZ, to assume the role of supervisory hydrologist. During his tenure in Flagstaff, he has managed and developed multi-disciplinary studies related to both surface and groundwater. He has collaborated with scientists and managers with various USGS Science Centers, other federal and local agencies, tribal governments, and academia. His most recent work has been related to water and sediment quality on Lake Powell including the assessment of CECs (Contaminants of Emerging Concern) and other contaminants associated with visitor use. Since 2008, Bob has served as the Scientist in Charge for the Flagstaff Science Campus where he encourages collaborative science programs with all USGS organizations on campus. As an Assistant Director for the Arizona Water Science, he directs science programs for the USGS AZWSC in northern Arizona and adjacent areas.

Jean E. McLain, PhD

Jean E. McLain, Ph.D. is the Associate Director of the University of Arizona Water Resources Research Center (WRRC) and an Associate Research Scientist at the WRRC and in the University of Arizona Department of Soil, Water and Environmental Science. Jean joined the WRRC in November 2011 after a 10-year research career with the USDA-Agricultural Research Service. With a strong focus on environmental microbiology, Jean has directed numerous research projects focused on establishing the human health and environmental risks of using recycled municipal wastewater for crop irrigation and groundwater recharge. Her most recent work is focused on the potential for wastewater irrigation to induce antibiotic resistance in soil microbial communities. Jean has a Ph.D. in Environmental Microbiology from Duke University, and received her Master's Degree in Forest Science from Yale University and Bachelor of Science degree in Forestry from the University of Vermont.

Rod Parnell, PhD

Rod is coordinator of academic sustainability programs, Professor of Earth Sciences and Environmental Sustainability, and chair of the Environmental Caucus at Northern Arizona University. He received a PhD in Geology from Dartmouth College (1982), a MS from the University of Massachusetts (1977), and a BA from Middlebury College (1975). Rod has also been a faculty member at St. Lawrence University and the University of Virginia. His current research focuses on the application of biogeochemistry and geomorphology to the sustainable management of river systems in the Western US, and on the transformation of environmental curricula to incorporate more sustainability. He has worked extensively on the effects of acid rain, volcanic emissions, and sulfide mineral deposits on terrestrial and aquatic ecosystems resulting in over 140 peer reviewed journal articles and papers presented at national and international meetings. He has received more than \$9 million in research funding from federal and non-governmental organizations in the US, Europe, and Latin America. As the founding director of the Colorado Plateau Cooperative Ecosystems Studies Unit, he worked to integrate federally funded environmental research across the Colorado Plateau and assisted in the establishment of a national network of CESUs. He has advised 36 graduate students who have successfully completed their degrees. He has been the chair or director of several earth sciences and environmental academic programs and is currently a member of the Executive Committee of the National Council on Science and the Environment/Council of Environmental Deans and Directors.

Randy Phillips

I currently am currently employed as a Division Manager for the Coconino County Public Health Services District. I manage the Environmental Services Division which consists of the Environmental Health, Environmental Quality and Animal Manage Management programs. I graduated from the University of Arizona and St Francis College. I have been in the Public Health field for a number of years. I have a strong interest to obtain more information concerning CEC's, to better understand their potential impact to public health and their effect on our environment.

Catherine Propper, PhD

Dr. Catherine Propper is a Professor of Environmental Endocrinology in the Department of Biological Sciences at Northern Arizona University, Flagstaff, AZ. Dr. Propper received her Bachelor's degree in Zoology from the University of California, Berkeley in 1982. She received her Ph.D. in Zoology at Oregon State University in 1989. She was supported by a National Institute of Mental Health NRSA Postdoctoral Fellowship at University of Colorado, Boulder from 1989-1990.

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Dr. Propper was hired in the Department of Biological Sciences at Northern Arizona University as an Assistant Professor in 1991 and has remained at NAU where she is currently Professor and Director for Research Capacity Development in the Office of the Vice President for Research. Dr. Propper is an associate editor for Frontiers in Toxicogenomics and has served as secretary for the Division of Comparative Endocrinology in the Society of Integrative and Comparative Biology. She has served on proposal review panels for the NSF and the USEPA, and as an outside reviewer for the China-Canada Joint Health Research Initiative. Dr. Propper was a reviewer for the USEPA's Endocrine Disruptor Screening Program's Amphibian Metamorphosis Assay Protocol. Dr. Propper's teaching responsibilities include courses in Endocrinology, Animal Physiology and Vertebrate Evolution. She has published 48 peer-reviewed journal articles, technical reports and book chapters. Her research interests include how environmental information, including exposure to environmental contaminants, is translated into endocrine responses that influence development, reproduction and behavior.

Amy Pruden, PhD, EI

Amy Pruden, is an Associate Professor in the Via Department of Civil and Environmental Engineering at Virginia Tech. She is currently the Director of Strategic Planning for the Water Infrastructure Sustainability Thrust of the Institute for Critical Technology and Applied Science (ICTAS). Dr. Pruden's research focuses on tracking agricultural and wastewater treatment plant sources of antibiotic resistance genes in the watershed. She also works in developing water treatment technologies for limiting the spread of antibiotic resistance. Her broad research mission is to build fundamental understanding of complex microbial communities in environmental systems in order to improve engineered approaches for meeting public health and water sustainability goals. Amy has a Ph.D. in Environmental Science from the University of Cincinnati and is an Engineering Intern.

Channah Rock, PhD

Dr. Channah Rock is an Assistant Professor at the University of Arizona in the Department of Soil, Water, and Environmental Science. Dr. Rock also maintains a joint appointment as a University of Arizona Cooperative Extension faculty "Specialist", and is currently facilitating a Water Quality Extension Program on a statewide basis throughout Arizona. Currently, Dr. Rock is working on the evaluation of recycled water quality as well as promoting water reuse as a safe and practical resource for the southwest. Dr. Rock focuses on adult education on water quality related issues across the state with the main focus to create awareness on applicable water conservation practices for citizens of the southwest. Additionally, Dr. Rock currently works with stakeholder engagement to facilitate awareness and drive water quality improvements in surface waters of Arizona.

She also possesses a wide variety of experiences in traditional microbiology and practical experience in wastewater and Biosolids. She has been extensively involved in the detection of pathogens and antibiotic resistant organisms in water using molecular technologies and has experience relating to the evaluation of environmental water samples. She has been involved in applied water related research since 2002.

- Doctor of Philosophy, Ira A. Fulton School of Engineering Civil and Environmental Engineering, Arizona State University, May 2007
- Master of Science, Ira A. Fulton School of Engineering Civil and Environmental Engineering, Arizona State University, July 2005
- Bachelor of Science in Microbiology,

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Microbiology, New Mexico State University, May 2003

Forrest Ritland, MD

Pathologist at Flagstaff Medical Center since 1987. Fellow of the College of American Pathologists. Certified by the American Board of Pathology. Resident in anatomical and clinical pathology at Harbor-UCLA Medical Center. Doctor of Medicine from Loma Linda University.

Robin Silver, MD

Practicing Emergency Room Physician; American Board of Emergency Medicine Diplomate, Flagstaff Physicians' Reclaimed Effluent Study Group member, Environmental Researcher

Shane A. Snyder, PhD

Co-Director for the Arizona Laboratory for Emerging Contaminants at the University of Arizona.

Tom Whitmer

I am a fourth generation Arizonan and a graduate of Arizona State University. I completed my undergraduate degree in Chemistry and completed post-graduate studies in Civil Engineering with an emphasis in hydrology. I have been directly involved in the water and natural resource industry for more than 30 years working

for such notable companies as Salt River Project, Santa Cruz Valley Water District, Imperial Irrigation District, International Environmental Solutions, Troy Biosciences, and the Arizona Department of Water Resources. I have held the positions of Chief Chemist, Hydrologist, Water Resource Planning Analyst, Deputy Director, Vice President and General Manager. For more than 10 years, working with the Arizona Department of Water Resources, I served as Manager of Statewide Water Resource Planning. In that capacity I coordinated all water resource planning and management activities for the State of Arizona outside of the Active Management Areas, including the development of state policies and guidelines pertaining to the obtainment and use of all water resources. I currently serve as the Director of Natural Resources for the City of Cottonwood where I am responsible for developing plans and solutions to ensure a sustainable supply of water is available to meet the future needs of the City while preserving the baseflow of the Verde River.