From January 7 to January 11, 2013, the Karst Waters Institute (KWI) and the National Cave and Karst Research Institute (NCRKI) held an international and multidisciplinary symposium on Carbon and Boundaries in Karst at NCKRI headquarters in Carlsbad, New Mexico.

There is growing interest in the dynamics of both inorganic and organic carbon in karst systems, and especially in the flux of carbon and nutrients between the surface and subsurface, and between different components (e.g. epikarst and vadose zone) in the karst subsurface. This symposium was about these and other questions connected to carbon in karst and boundaries in karst. It was especially timely both because of rapid advances in the field and the importance of carbon sequestration in global climate change. The symposium highlighted recent advances in biology, geology, and hydrology that are helping us understand the dynamics of karst ecosystems, especially with respect to carbon. The talks were organized around seven main themes:

- The Upper Boundary – Epikarst
- The Lower Boundary – Phreatic Zone
- Lateral Inputs — Insurgences
- Lateral Outputs — Resurgences
- CO₂ — Processing and Storage
- Organic Carbon — Sources and Quality
- Synthesis and Large Scale Models

Sixty participants from seven countries attended the week-long meeting which included an excursion to Carlsbad Caverns National Park. For the first time at a KWI meeting, several participants, who were unable to attend in person, gave their presentations via Skype. The meeting was highlighted by two keynote presentations:

- *Groundwater Ecology of Alluvial River Flood Plains*, Jack Stanford, Flathead Lake Biological Station, Polson, Montana
- *Karst – Conduit Matrix Exchange and the Karst Hyporheic Zone*, John Wilson, New Mexico Institute of Mining and Technology, Socorro, New Mexico.

Two most distinguished karst scientists, William B. White of Pennsylvania State University and Derek Ford of McMaster University jointly summed up the meeting. The following is a list of oral and poster presentations given at the meeting. Participants were invited to submit articles that elaborated their meeting presentations to *Acta Carsologica*.

### MEETING PRESENTATIONS

- **Chemotrophy meets heterotrophy: the inverted ‘critical zone’ of the subsurface**
  Penny J. Boaston

- **Microbial controls on in situ production of dissolved organic matter**
  Kathleen Brannen*, Annette Engel, and Ross Larson

- **Redox state in karst aquifers: Impacts of DOC- and DO-rich river water intrusion into Floridan aquifer springs**
  Amy L. Brown*, Jonathan B. Martin, Elizabeth Screaton, John Ezell, James Sutton and Patricia Spellman

- **Component isolation and lipid profiling to characterize dissolved organic matter transformations along a groundwater flow path**
  Terri Brown*, Susan M. Pfiffner, and Annette S. Engel

- **Using biominerals to assess anthropogenic impact: a case study in Carter Salt Peter Cave, Carter County, TN**
  Sarah K. Carmichael*, Mary J. Carmichael, Amanda Strom, Krissy W. Johnson, Leigh Anne Roble, Yongli Gao, Cara M. Santelli, and Suzanna L. Bräuer

- **A simple theoretical framework to interpret spring variations and constrain mechanistic models of karst processes**
  Matthew D. Covington

- **Convergence and Divergence in Caves and Shallow Subterranean Habitats**
  David C. Culver* and Tanja Pipan

- **Microbial activities at geochemical interfaces in cave and karst environments**
  Annette Summers Engel

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*ACTA CARSOLOGICA 42/2-3, 173–175, POSTOJNA 2013*
Interactions between surface and subterranean amphipods in springs
Cene Fišer

Preliminary carbon sequestration and denudation rates within the karst of the Cumberland Plateau, USA
Lee J. Florea

Determinants of macroinvertebrate diversity in karst springs of the Mid-Atlantic region, USA
Daniel W. Fong*, Christopher Seabolt, and Kaitlin C. Esson

Bicarbonate water chemistry of Little Limestone Lake, a beautiful marl lake in Manitoba, Canada
Derek Ford

The relative importance of speleogenetic phases as revealed by numerical models
Franci Gabrovšek

Dynamics and limitations of organic carbon turnover in porous aquifers
Christian Griebler

The longitudinal response of benthic invertebrate communities to caves
Jonathan S. Harding* and Troy Watson

Experimental design and instrumentation to observe karst conduit hyporheic flow
Katrina K. Henry*, Kenneth A. Salaz, and John L. Wilson

Biological control on acid generation at the conduit-bedrock boundary in submerged caves
Janet S. Herman*, Alexandria G. Hounshell, Rima B. Franklin, and Aaron L. Mills

Environmental controls on organic matter production and transport across surface- subsurface and geochemical boundaries in the Edwards Aquifer, Texas, USA
Benjamin T. Hutchins*, Benjamin F. Schwartz, and Annette S. Engel

Subaerial microbial life in the sulfidic Frasassi Cave System, Italy
Daniel S. Jones*, Irene Schaperdoth, and Jennifer L. Macalady

Physical Structure of the epikarst
William K. Jones

Stratigraphic control on conduit development in the Ozark Karst, Missouri, USA
James E. Kaufmann* and Jeffery Crews

Using isotopes of dissolved inorganic carbon species and water to separate sources of recharge in a cave spring, northwestern Arkansas
Katherine J. Kneriem*, Erik Pollock, and Phillip D. Hays

Quantitatively modeling source influences on cave air carbon dioxide chemistry
Andrew J. Kowalczk

Quaternary glacial cycles: karst processes and the global CO$_2$ budget
Erik B. Larson* and John E. Mylroie

Karst in the global carbon cycle
Jonathan B. Martin, Mitra Khadka, Marie Kurz, John Ezell, Amy Brown

Spatio-temporal trends in diversity of subsurface assemblages from the vadose zone of the Carpathian karst in Romania
Ioana N. Meleg

Comparison of water quality in submerged caves with that of diffuse groundwater immediately proximal to the conduit
Aaron L. Mills*, Janet S. Herman, and Terrence N. Tysall

Carbon cycling in arid land caves: implications for microbial processes
Diana E. Northup*, Noelle G. Martínez, Lory O. Henderson and Elizabeth T. Montano

Shallow Subterranean Habitats in Volcanic Terrain
Pedro Oromí* and Heriberto D. López$	extsuperscript{1,2}$

Particulate inorganic carbon flux in karst and its significance to karst development and the carbon cycle
Randall L. Paylor* and Carol M. Wicks

Patterns of organic carbon in shallow subterranean habitats (SSHs)
Tanja Pipan* and David C. Culver
Seasonal, diurnal and storm-scale PCO$_2$ variations of cave stream in subtropical karst area, Chongqing, SW China
Junbing Pu*, Daoxian Yuan, Licheng Shen and Heping Zha

Variability of groundwater flow and transport processes in karst under different hydrologic conditions
Nataša Ravbar

Where’s the fire? An analysis of carbon precipitates in Black and other caves of the Upper Guadalupe Mountains, New Mexico
Sam Rochelle*, Michael N. Spilde, and Penny J. Boston

Using hydrogeochemical and ecohydrologic responses to understand epikarst processes in semi-arid systems, Edwards Plateau, Texas, USA

Carbon flux in the Dorvan-Cleyzieu karst: lessons from the past to guide future research
Kevin S. Simon

Groundwater ecology of alluvial river flood plains
Jack A. Stanford

Seasonal influx of organic carbon into Marengo Cave, Indiana, USA
Philip van Beynen*, Derek Ford and Henry Schwarcz

Testing carbon limitation of a cave stream ecosystem using a whole-reach detritus amendment
Michael P Venarsky*, Brock M Huntsman, Jonathan P Benstead, Alexander D Huryn

The role of karst conduit morphology, hydrology, and evolution in the transport, storage, and discharge of carbon and associated sediments
George Veni

Carbon fluxes in karst aquifers: sources, sinks, and the effect of storm flows
William B. White

Hydrograph interpretation – changes in time
Carol Wicks

Karst conduit-matrix exchange and the karst hyporheic zone
John L. Wilson

The role of geological processes in global carbon cycle: a review
Yuan Daoxian

The stability of carbon sink effect related to carbonate rock dissolution: a case study of the Caohai Lake geological carbon sink
Zhang Qiang
The initiator of this issue was professor David Culver, who suggested the publication of papers presented at the multidisciplinary symposium on Carbon and Boundaries in Karst in our journal. Being familiar with the high quality of past meetings organized by the Karst Waters Institute, the editorial board of AC agreed with the proposal and invited Dave as a guest editor. His editorial work was highly efficient and thorough; he found relevant reviewers and provided a high quality reviews for each manuscript. The issue contains high quality review and original research paper, presenting a comprehensive coverage of the role of karst in the global carbon cycle. This issue would not be possible without a wide cooperation of reviewers who provided thorough and thoughtful reviews of all manuscripts. Several manuscripts have been rejected for different reasons, and most of the others were considerably improved after the review. Even though the review process was anonymous, we present the list of those reviewers that have agreed to be acknowledged in alphabetical order: Pavel Bosák, Annette S Engel, Derek Ford, Christian Griebler, Ellen Herman, Janet S Herman, William K Jones, Alexander Klimchouk, Florian Malard, Pierre Marmonier, Jonathan B Martin, MaryLynn Musgrove, John E Mylroie, Diana Northup, Metka Petrič, Tanja Pipan, Nataša Ravbar, Benjamin Schwartz, Kevin Simon, Branka Trček, Michael Venarsky, George Veni and William B White.

We hope that the readers will enjoy reading the issue.

Franci Gabrovšek, the editor