
2010 NAGT & GSA Geoscience Education Division Luncheon and Awards Program



**Sunday, October 31, 2010
Hyatt Colorado Convention Center
Denver, Colorado**

The Program

Opening Remarks

Eric J. Pyle, Chair, GSA Geoscience Education Division
Michael Taber, President, NAGT

Awards

The Biggs Award For Excellence In Earth Science Teaching
Michael C. Rygel

**The Distinguished Service Award of the
Geoscience Education Division**
Virginia Peterson

The Jim Shea Award
Dean McManus

The Robert Christman Award
Gregory R. Wheeler

The Neal Miner Award
David A. McConnell

**The Dorothy Lalonde Stout
Professional Development Grants**
Juanita Gutierrez
Cliff Hudson
Mike O'Connell
Jason Westfall

Installation of New Officers

Janis Treworgy, President, NAGT
Paul Baldauf, Chair, GSA Geoscience Education Division

Closing Remarks

Janis Treworgy and Paul Baldauf

The Awards



GSA Geoscience Education Division, 2010-2011
<http://gsaged.org/>

Paul Baldauf, Chair
Steven H. Schimmrich, 1st Vice Chair
Christopher L. Atchison, Secretary-Treasurer



National Association of Geoscience Teachers, 2010-2011
<http://nagt.org/index.html>

Cathy Manduca, Executive Director
Janis Treworgy, President
Elizabeth Wright, 1st Vice President
Gene Pearson, Secretary/Treasurer
Julie Libarkin and Joe Elkins,
Editors of *Journal of Geoscience Education*
David Steer, Editor, *In the Trenches*

THE BIGGS AWARD FOR EXCELLENCE IN EARTH SCIENCE TEACHING, the GSA's Geoscience Education Division's Named Award, recognizes innovative and effective teaching of Earth science among early career faculty. Earth science instructors and faculty from all academic institutions engaged in undergraduate education, who have been teaching full-time for 10 years or less are eligible. Part-time teaching is not counted in the 10 years. It is made possible by support from the Donald and Carolyn Biggs Fund, the GSA Geoscience Education Division, and GSA's Education and Outreach Programs.

THE GEOSCIENCE EDUCATION DIVISION'S DISTINGUISHED SERVICE AWARD, established in 2007, is presented annually to a member of the division who has given outstanding service to the GED. Volunteers who go above and beyond the normal call of duty to assist the division, typically "behind the scenes," are recognized and honored for their efforts and commitment.

THE JAMES H. SHEA AWARD OF THE NATIONAL ASSOCIATION OF GEOSCIENCE TEACHERS (NAGT) is presented annually to an individual for his/her exceptional contributions in the form of writing and/or editing of Earth science materials (broadly construed) that are of interest to the general public and/or teachers of Earth science. This prestigious award was established in 1991 by the officers of NAGT in honor of James H. Shea, long-time editor of the *Journal of Geoscience Education*. The award commemorates Jim's long-standing commitment to promoting high-quality geoscience education by publishing the best ideas for effective and innovative teaching.

THE ROBERT CHRISTMAN AWARD, established in April 2008, is presented periodically by NAGT to individuals who have provided long, distinguished service to the association at the national and/or section level. The award honors Robert "Bob" Christman, who served the association as a councilor-at-large, secretary/treasurer, executive director, and co-executive director and served NAGT's Pacific Northwest Section as president and secretary/treasurer and was co-editor of the *Journal of Geoscience Education* for eight years.

The Biggs Award

THE NEAL MINER AWARD, presented annually by NAGT since 1953, honors an individual for exceptional contributions to the stimulation of interest in the Earth sciences. The award commemorates the concern for personal excellence and effective teaching of Neal Miner, who began his career as an educator at Cornell College in Mount Vernon, Iowa, in 1937 as chair of its geology department and in 1938 helped organize the Association of Geology Teachers, which evolved into the National Association of Geoscience Teachers (NAGT). Until his death 10 years later, his ideals, his notably unselfish outlook on life, and his personal philosophy inspired his fellow teachers as well as his students.

DOROTHY LALONDE STOUT PROFESSIONAL DEVELOPMENT GRANTS are presented by NAGT in memory of Dottie Stout, a gifted geoscience educator who taught at Cypress College, El Camino College, Long Beach City College, and California State University, Fullerton, and the first female president of NAGT. The grants honor her outstanding work and dedication to Earth science education.

OUTSTANDING EARTH SCIENCE TEACHER (OEST) AWARDS are given for “exceptional contributions to the stimulation of interest in the Earth sciences at the pre-college level.” Any teacher or other K-12 educator who covers a significant amount of Earth science content with his or her students is eligible. Ten national finalists are selected, one from each NAGT regional section. Some sections also recognize state winners. The OEST Awards program is designed to identify excellence in teaching, recognize and reward excellence in teaching, stimulate higher levels of teaching performance, establish NAGT as a strong support organization for pre-college education, and, via active statewide and sectional programs, build a solid state, regional, and national liaison with administrators of pre-college Earth science education.

Presented by Citationist
Robert L. Badger to

MICHAEL C. RYGEL

Assistant Professor, Department of Geology
State University of New York at Potsdam

I am very pleased that the Geological Society of America has chosen to honor Michael Rygel with the 2010 Biggs Earth Science Teaching Award. Mike came to our department in the State University of New York at Potsdam a little over four years ago and immediately infused a sense of energy and enthusiasm that was contagious to both students and faculty. He has had a significant impact on our program of study, has proved to be an exceptional teacher, has led outstanding field trips for his classes, involved students in top quality research, and continued his own research at an extraordinary level.



Mike was raised in a steel mill town outside of Pittsburgh by a single parent who struggled to put food on the table. After high school, he joined the National Guard, later using the GI bill to attend the University of Pittsburgh at Johnstown. The first in his family to attend college, he was clueless about what to study. During freshmen orientation the students were invited to attend open houses at the various departments, so Mike tagged along at the tail end of a group of 50 or so potential biology majors. But a geology professor, with just one interested student, persuaded Mike to come with him instead. And that has made all the difference. One caring faculty member at an opportune point of time, a small department that nurtured its students to grow and prosper, and an escape from a steel mill town into the international scientific world. A geologist was born that day, and a fire was lit that continues to burn vigorously.

Mike is very aware that it is the field of geology, and a few very fine and caring faculty, who have allowed him to develop into the person he is today. Now he is paying that forward, trying to be the caring faculty member to make a difference in the lives of the students he teaches. He sees a lot of himself in some of our students, about half of whom are the first in their family to attend college. He does his best to show the care and concern for their wellbeing that he was once shown and to offer life-changing academic opportunities.

In and outside of the classroom, Mike is a terrific teacher. His method of teaching is to have constant interaction between him and the students, to maintain a very flexible schedule that can weave and bob in whatever direction the class takes, and to use assessable learning goals. I think he actually goes into each class thinking, "What do I want them to learn in this class?" Followed by, "How will I know they have learned it?" Students respond very positively to his teaching style; in four years I have heard nothing but praise from them. A few quotes from student evaluations:

"Very concerned with student performance."

"The best I've EVER had."

"Professor Rygel is a great instructor and clearly has a passion for his field."

"Dr. Rygel did an excellent job of bringing the material to life. He invested a lot of personal effort and initiative in making sure students were learning and involved."

While using this very student-friendly teaching style, he has high expectations for their quality and quantity of work. The high standards that Mike sets for the lower level courses he teaches have a four-fold benefit for our students and program. First, they give the students an outstanding background preparing them for upper level work. Second, they teach them workload expectations for our major, so they are fully prepared to exert the necessary effort to succeed in upper level coursework. Third, they act to weed out students, at a very early stage, who are not willing to commit the time and energy to a rigorous major course of study. And fourth, because hardworking students usually rise to his challenge, they act as a recruiting

tool for students into our program. Since Mike's arrival, our list of majors has grown from about 40 to 75, in large part due to his influence.

During Mike's second year at SUNY Potsdam, he wrote a successful ACS three-year grant to fund student research in Nova Scotia. This project is at the World Heritage Joggins Site. Three students accompanied him for a month during the summer of 2008, and they were featured in a half-hour documentary on CTV the following winter on the Joggins site. All three presented their research at the northeast GSA in Portland, Maine in the spring of 2009. After that first summer of research in Nova Scotia, he was so excited about the geology that the next summer he led a dozen students on a 10-day trip there. At the end of the trip, he and four of the students remained for a month of fieldwork. All four of these students accompanied him, with costs covered by his grant, to the national GSA in Portland, Oregon, last fall to present their research. These opportunities he is providing to our students are incomparable to anything we have ever offered. He will lead another trip to Nova Scotia in the spring of 2011.

Mike's teaching role extends beyond the walls of our university. In 2005, the Canadian Society of Petroleum Geologists voted his Ph.D. dissertation the best in all of Canada, even though it had nothing to do with oil. In the fall of 2007, this same group flew him to Calgary to give the keynote talk at a luncheon for their annual meeting. In February of 2008, and again in January of 2009, the Canadian Society of Petroleum Geologists sponsored him to spend a week on tour, giving talks at various universities. His first tour took him to five universities in the Canadian Maritime Provinces; the second tour was to five universities in Ontario. Just as visiting speakers to my university when I was an undergraduate geology student 40 years ago influenced my career, I am certain that Mike's speaking tours are influencing dozens of young geologists today. He is a dynamic speaker and a marvelous role model.

As you can gather, Mike's a pretty special guy. Our dean has likened our hiring him to the drafting of Willie Mays. And to think, we almost didn't hire him. One of his letters of recommendation referred to him as a "perfect gentleman." But he's overcome that flaw and developed into an incredibly fine colleague and teacher, well worthy of the Biggs Excellence in Earth Science Teaching Award.

The Distinguished Service Award of the Geoscience Education Division

Presented to

VIRGINIA PETERSON

Associate Professor and Chair, Department of Geology
Grand Valley State University, Allendale, Michigan



This year the Geoscience Education Division presents its Distinguished Service Award to Dr. Virginia (Ginny) Peterson. The Distinguished Service Award recognizes a member of the division who has given outstanding service to the GED. Ginny is an associate professor of geology at Grand Valley State University in Allendale, Michigan, where she is also presently the department chair. She has held the position of GED Representative on the GSA Education Committee since 2001, quite above and beyond the standard four-year commitment. During that time she served as vice-chair and chair of the Education Committee and has played a major role in researching how community college faculty can better be served by GSA as well as the pros and cons of dual-credit for high school students. Thank you, Ginny, for your time and commitment to the GED these past nine years!

The James Shea Award

Presented by Citationists
Barbara Tewksbury and Heather Macdonald to

DEAN McMANUS

Professor Emeritus, Marine Geology and Geophysics,
University of Washington School of Oceanography

Heather Macdonald and I are delighted that Dean McManus is this year's recipient of the James Shea Award. Dean is receiving this award in recognition of his book, *Leaving the Lectern: Cooperative Learning and the Critical First Days of Students Working in Groups*. Published in 2005, the book describes the transformation of Dean's teaching from traditional lecture and exams to using cooperative learning and student-based projects. Dean writes, "This book is my story, about one particular course. ... I tell you about each step I took during those days and reflect on the meaning of what I did properly and successfully or just flat wrong. At each of those steps, I offer citations to references that will better prepare you to make the change. When you change your teaching, you enter a whole new world of education, and so I also share with you my emotions, from anxiety to joy, and encourage you to begin the journey."



Dean's transformation began over 15 years ago with visits to several university departments, where he spoke with students about their experiences in the classroom. He first presented the results of his interviews with students at the meeting *Shaping the Future of Earth Science Education* in 1996. He writes that he picked up a five-page handout on the jigsaw technique at that meeting, and he spent the flight home from D.C. to Seattle reading the handout and thinking about his teaching.

The Robert Christman Award

Presented by Citationist
Gene Pearson to

GREGORY R. WHEELER

Emeritus Professor of Metallic Ore Deposits,
California State University, Sacramento

The Robert Christman Distinguished Service Award was established by National Association of Geoscience Teachers in 2008 to recognize individuals who have provided long, distinguished service to the association at the national and/or section level. Last year Scott Linneman had the honor of presenting the inaugural award to Bob Christman. Today I am honored to introduce the second recipient of the Christman Distinguished Service Award, Greg Wheeler.



Greg has been an active member of the Far Western section of the National Association of Geoscience Teachers since 1980. He has twice organized and hosted section conferences in Sacramento. His desire to have an impact on geoscience education led him to take on significant leadership roles, serving as second vice president/newsletter editor (1984-1990), first vice president (1990-1991) and president (1991-1993). Since 2003, Greg has been a member of the FWS OEST selection committee.

In 1993 Greg was elected to be a NAGT councilor-at-large. After completing his term as councilor-at-large, Greg then served as NAGT second vice president (1996-1997), NAGT first vice president (1996-97), and NAGT president (1998-1999). After a three-year hiatus Greg was asked to take on the position of NAGT secretary/treasurer, which he held from 2003 to

In no small way, reading that handout changed his teaching. He tossed out his plans for a lecture-based course that he was about to teach and plunged into a course designed to engage students in the classroom using jigsaw activities.

His experiences with that transformation form the basis not only for the book, but also for his early entry into the world of improving undergraduate geoscience education. He was one of the leaders in the late 1990s of the NAGT workshops on *Innovative and Effective Teaching in the Geosciences and Course Design in the Geosciences*. He was an NAGT Distinguished Speaker and, along with one of his students, led workshops on cooperative learning in geoscience departments in the United States and Canada. Dean thought it was essential that a student present with him to give the student perspective on the cooperative learning in his courses.

Leaving the Lectern brings the reader along on Dean's personal journey of good intentions, challenges, and the rewards of having engaged and energized students. The book is both inspiring and reassuring. Dean is one of us — he is not a pedagogical pundit. Rather, he is a research oceanographer at a major university, and his background is similar to that of many geoscience faculty members. His journey gives other faculty members the confidence to examine and change their own teaching.

I am delighted that Dean McManus is this year's James Shea Award recipient. Please join me in thanking Dean for his insightful contribution to geoscience education.

The Neil Miner Award

2006. In 2007 Greg was appointed to serve a three-year term on the NAGT Investment Committee, and in the fall of 2009 he volunteered to chair the Outstanding Earth Science Teacher Award Committee.

Greg joined the faculty of the Department of Geology at California State University, Sacramento, in 1978 soon after completing his doctorate at the University of Washington. He served as department chair for seven years and played a major role in the fundraising and design of Placer Hall, the department's home since 1996. Always concerned with the highest quality of education for students, even non-Earth science students, Greg served as associate dean for undergraduate studies and director of general education at CSU Sacramento in the 2000s until his retirement this year.

Like Bob Christman, Greg is one of those uncommon individuals who can identify what needs to be done and accomplish it without fanfare. His selfless nature and collaborative leadership style allow people to reach consensus and achieve their goals. Simply put, Greg is a quiet, but highly effective, leader and doer. For over 25 years Greg's dedication and exceptional service to NAGT at both the section and national levels has greatly benefited the organization, its members, and geoscience educators at all levels. Please join me in honoring Greg as the second recipient of the Robert Christman Distinguished Service Award.

Presented by Citationist
David Steer to

DAVID A. McCONNELL

Professor, Marine, Earth, and Atmospheric Sciences,
North Carolina State University

It is with great honor I provide the citation for David McConnell, the 2010 Neil Miner Award recipient. I came to know David upon arriving at the University of Akron in the late 1990s. At that time he was beginning to consider how pedagogical changes, mostly championed by physicists at the time, could be incorporated in large geosciences courses for non-majors. He had begun an earnest investigation into teaching and learning with a focus on non-science majors fulfilling their general education course requirements. David recognized that traditional lecture classes were not achieving their stated goal of increasing student capacity to think critically about the world around them. He forged ties with College of Education collaborators, pedagogical experts inside the geosciences and across the broader STEM community, to explore learning in this environment. As he became more interested in student-centered learning, David was awarded several NSF teaching and learning grants. As part of that effort, over 300 geoscience conceptual questions were developed, tested, and posted on the *Cutting Edge* website. During this time he also organized summer teaching workshops for K-12 teachers focused on field and classroom activities intended to help teachers engage students while meeting critical content objectives. This and other related works formed the pedagogical background needed as David revised his online textbook into a print version with embedded exercises intended for an active learning setting. Clearly in the area of teaching, David espouses the qualities of effective teaching embedded in the Neil Miner Award.



The Dottie Stout Professional Development Grants

David took an interest in professional development of students and faculty members who he mentored. One of his former Masters students at the University of Akron who is now a professor summed it up best when he wrote how Dave challenged him to aim high and be an independent thinker, characteristics that propelled him forward into his own academic career. David worked with faculty across the country as he conducted workshops and seminars for faculty as a NAGT distinguished lecturer. By sharing resources he developed and by working alongside others interested in improving teaching and learning, he guided faculty as they incorporated active learning strategies in their classes. That selfless mentoring improved the teaching of hundreds of faculty across the country. Nationally, he expanded his education research efforts by developing collaborative efforts involving biologists, sociologists, and others interested in improving student success across disciplinary boundaries. More recently, David was asked to write a teaching and learning white paper by the National Academies Center for Education.

As exemplified by Neil Miner's dedication to students and faculty, David has touched hundreds of educators and students through his teaching, workshops, professional development talks, collaborative grants, and other education efforts directed at student success. His professionalism and dedication serves as an example for others who seek excellence in geosciences education and is certainly deserving of the NAGT Neil Miner award.

Presented to

JUANITA GUTIERREZ

Bronx Public School 196, Bronx, New York

CLIFF HUDSON

Riverside High School, Williamston, North Carolina

MIKE O'CONNELL

Chester Area School, Chester, South Dakota

JASON WESTFALL

Sonora High School, Sonora, California

Juanita Gutierrez teaches 2nd, 3rd, 4th, and 5th grade students at Bronx Public School 196, Bronx, New York. She plans to use the funds from her Dottie Stout Professional Development Grant to purchase Earth materials, e.g., 25 boxes of mineral rocks samples, and various other teaching materials for her classes.

Cliff Hudson is teaching in Williamston, North Carolina, at Riverside High School, a newly consolidated rural high school where half of the students are black. The winner of last year's Southeastern Section OEST award, he has written lesson plans on projects with East Carolina University, NSF, and

Wake Stone Quarry and is currently working with NASA and Virginia Air/Space Museum. He will be using the Dottie Stout funds to purchase Earth science materials to be used in his teaching.

Mike O'Connell is in his 20th year of teaching and his second year of teaching middle school science in Chester, South Dakota. He is purchasing Vernier science equipment for his students to use. "We have purchased three Golinks, two temperature probes, one pH probe and the LoggerPro software. We are in the process of doing pH tests with our local lakes, streams, and farm ground. The money from this award makes this possible and is appreciated very much."

Jason Westfall, for many years the lead teacher for the Orange County Outdoor Science School, teaches high school physical sciences in Sonora, California. He is dedicated to teaching a whole Earth approach to the physical sciences, concentrating on applying Earth science concepts to students' everyday lives and how energy and matter move through the Earth's spheres and affect human life on planet Earth. He uses the Sierra Nevada foothills as his laboratory and attempts to get his students to attend no less than three field trips every year.

The Outstanding Earth Science Teacher Awards for 2010

Section Winners

EASTERN SECTION

Heather H. McArdle,
Mahopac High School, Mahopac, New York

FAR WESTERN SECTION

Nick Crooker, Modesto High School,
Modesto, California

NEW ENGLAND SECTION

Jennifer Judkins, Wilmington Middle School,
Wilmington, Massachusetts

PACIFIC NORTHWEST SECTION

Chris Hedeon, Oregon City High School,
Oregon City, Oregon

Additional Section Winners

To Be Announced on the NAGT Website
(<http://nagt.org/nagt/programs/oest.html>)
When Information Becomes Available

CENTRAL SECTION

MIDCONTINENT SECTION

NORTH CENTRAL SECTION

SOUTHEASTERN SECTION

SOUTHWESTERN SECTION

TEXAS SECTION

Eastern Section

HEATHER H. McARDLE

Heather McArdle, who teaches at Mahopac High School in Mahopac, New York, has 14 years of teaching experience. She currently teaches Regents Earth science, physical geology, and A.P. environmental science in grades 10-12. She holds a B.S. in geology and a B.S. in secondary science education from the State University of New York at Oneonta and an M.S. in secondary science education with a concentration in geology from Syracuse University. Her numerous publications include meteorology, geology, and astronomy teaching manuals published by Flinn Scientific and articles in peer-reviewed journals, including "Traveling Through the Curriculum: A Method of Holistic Teaching" in the *Science Education Review*, "Ace-ing Stratigraphy" in *The Science Teacher*, and "A Framework for Nomenclature of Glacially Derived Sediments" in the *Journal of Geoscience Education*. Heather also served as a test item writer for the Regents Exam for the New York State Education Department. She is a member of the National Association of Geoscience Teachers and the Geological Society of America. She uses multiple intelligences philosophy in designing her lessons and makes holistic connections to her lessons. She has a website which she constantly revises to engage students beyond the classroom and uses a competitive homework assignment which requires students to link geosciences content to any headline in a 24-hour news cycle.



Heather writes: "I challenge each of my students. They should be allowed to feel safe enough to stretch themselves, make mistakes, and try again — without too harsh a consequence.... I have yet to find the perfect way to individually challenge every student in every exercise, but I have found that when students feel 'safe' and know their responsibility in challenging themselves, they are more willing to 'stretch' themselves a little."

Heather, who currently serves as a mentor teacher to first-year science teachers, was also selected as the state winner for New York.

Far Western Section

NICK CROOKER

Nick Crooker, an Earth science teacher at Modesto High School in Modesto, California, is the Far Western Section OEST award winner for 2010. Nick came out of a background in biology and returned to school for an education in Earth science so he could develop a well-rounded program at his school. Nick has been a member of the NAGT for a number of years, attending conferences and field trips in the Far Western Section. He helped prepare the guidebook for the FWS Lava Beds National Monument conference in 2007.



Nick describes several important traits in a good teacher: Steadfastness helps in the teaching profession when the political environment tends to erode quality support in the classroom. Patience with each student helps him make them the best they can be. Flexibility enables him to handle unexpected problems and teaching situations in the classroom. Humor helps keep the instructor sane and the students interested in the subject matter. All of this is under the umbrella of a broad science background in the physical, environmental, and biological sciences. He is able to draw upon years of experience and incorporate this in classroom instruction.

Nick's room has rock displays and pictures coordinating with the State Standards. With tight budgets, field trips are an impossibility. Using document cameras and LCD projectors, he shares with his students exciting places of geological interest via the Internet and from his own personal travels.

Currently he participates with the A.V.I.D. program at Modesto High School. This program takes selected students who will be the first in their family to go on to a college education and engages them in a rigorous academic program throughout their four years in high school. He has also taught the natural and physical sciences for the local Adult School for the past 23 years.

New England Section

JENNIFER JUDKINS

Jennifer Judkins teaches Earth and other sciences at Wilmington Middle School, Wilmington, Massachusetts. Her classroom is an active learning environment where students use real data to solve problems and she also emphasizes relationships to students' lives. Her supervisor notes that "Students are having fun, collecting evidence and recording their findings; they don't even realize that they are learning...."



Jennifer has developed an excellent class website. "In an effort increase home/school communication and to assist middle school students that struggle with organizational skills, I created a comprehensive class website [where] students and parents can read about what we're doing in class, review various extra credit opportunities, find recommended links for the content area...and download electronic copies of all worksheets and class notes..." She invites you to visit her site at www.tinyurl.com/judkinsscience. Jennifer has taught courses and presented workshops on using technology as a time-saving, curriculum enhancing tool for the classroom. She serves as the District Technology Trainer for Wilmington Public Schools and is the Team Leader of her grade 8 teacher-colleagues.

Prior to teaching, Jennifer spent over 10 years working in industry, including NASA. Her "varied work experience translates readily into the classroom... [through] first-hand knowledge of exciting research and technology." Students come to know that science is a possible career option and not "just a required subject in school."

Her community involvement includes being a volunteer case reviewer for children in foster care, ensuring that each child is receiving the necessary services and support. "This work has helped me to realize that some students face unknown and unseen difficulties at home. I no longer take for granted or assume each child in my class has the benefit of a supportive family. I now see my role as a teacher / role model in a new light. As a teacher, I have a unique opportunity to make a difference in the lives of my students."

Pacific Northwest Section

CHRIS HEDEEN

Chris Hedeem holds a master of science degree in geology from the University of Oregon and a master of arts degree in teaching from Lewis and Clark College. He has taught for over 10 years and instructs Earth science and honors geology at Oregon City High School.



Chris brings a breadth of geologic experience to his classroom. Before launching a career in teaching, he studied landslide hazards and remediation for the U.S. Forest Service, and his graduate research focused on invertebrate paleontology, stratigraphy, and regional tectonics of the Oregon Coast Range. Most notably, Chris has served as a Master Teacher for the NSF-funded Teachers on the Leading Edge (TOTLE), an Earth science teacher professional development program highlighting Pacific Northwest regional plate tectonics. In this role Chris has mentored other K-12 geoscience teachers and has also helped develop classroom kits that bring experimental setups into TOTLE participants' classrooms. These kits were built under Chris's supervision at his high school and are used throughout Pacific Northwest classrooms. They include manipulatives middle and high school teachers can use to study regional geologic hazards and earthquake engineering. Additionally, he has engineered innovative middle and high school curriculum using real-time EarthScope GPS data to study geologic hazards and tectonics of the Cascadia region which was presented at the 2009 Geological Society of America Meeting.

Chris also coordinates an honors geology curriculum with Clackamas Community College and consults on Earth science curriculum development and teacher professional development projects by Biological Sciences Curriculum Studies and Oregon Public Broadcasting. He clearly demonstrates the qualities that make him a master teacher in Earth sciences. He has knowledge, experience, a love for teaching and interacting with students, as well as true dedication to the professional development of teachers.

The Outstanding Earth Science Teacher Awards for 2010

State Winners

ALASKA

David Gillam, Nicholas J. Begich Middle School, Anchorage, Alaska

LOUISIANA

Chris Campbell, Simsboro High School, Simsboro, Louisiana

MARYLAND

Mona Becker, Sykesville Middle School, Sykesville, Maryland

NEW JERSEY

Peter Dorofy, Burlington County Institute of Technology,
Medford, New Jersey

NEW YORK

Heather McArdle, Mahopac High School, Mahopac, New York

OREGON

Mike Rockow, Leslie Middle School, Salem, Oregon

PENNSYLVANIA

Karen Aucker, Jersey Shore Area Senior High School,
Jersey, Pennsylvania

SOUTH CAROLINA

Jeanne Hartley, Lexington Middle School,
Lexington, South Carolina

WEST VIRGINIA

Andrea Anderson, Weir High School, Weirton, West Virginia

WASHINGTON

Kareen Borders, Key Peninsula Middle School,
Gig Harbor, Washington

Additional State Winners To Be Announced on the
NAGT Website (<http://nagt.org/nagt/programs/oest.html>)
When Information Becomes Available

Alaska

DAVID GILLAM

Dave Gillam teaches 6th grade and is highly regarded as a master Earth science teacher in the Anchorage School District. Recently, as a part of the NSF-funded *Experiential Discoveries Geoscience Education* workshop, Dave guided two 6th graders through a student-designed, GIS, field-based science fair project. This involved being trained in ArcGIS software and using it to analyze data collected from Juneau Icefield glaciers as well as undertaking independent Earth science projects during a two-week summer workshop. Returning to Juneau the following spring, they presented their project at an EDGE workshop with student and teacher colleagues and also at the Southeast Alaska Regional Science Fair, where Dave also served as a judge. Along with leading three of his own summer workshops for Alaska teachers, Dave is highly regarded both in the Anchorage School District (Alaska's largest by population) and statewide for his excellence in teaching Earth science, other sciences and mathematics. Dave has also worked as an adjunct professor at the University of Alaska, Anchorage, and at Alaska Pacific University in Anchorage, where he has taught education courses in science for the elementary classroom.



Louisiana

CHRIS CAMPBELL

Chris Campbell teaches 7th and 8th grade math and sciences at Simsboro High School in Simsboro, Louisiana. Since 2006, Chris has completed well over 150 hours of professional development specifically related to Earth science, from natural resources to fossils and weather. "I feel that the more I know and the more excited I am about the topics then the more that will excite my own students," says Chris. "I NEVER want my students to feel the way I did 20 years ago, bored to tears in that desk."

To that end Chris has focused on hands-on inquiry-based lessons, including lab activities, field work, and field trips to help excite students (“and me”) about course topics. “Students need to have an emotional connection to something before they learn it. I taught them Earth systems science concepts by doing sphere impact studies from hurricanes, volcanic eruptions, earthquakes, and meteorite impacts.” He also uses technology as much as possible, a topic he has presented on at conferences of the Louisiana Science Teachers Association. Looking to stretch the learning experience for students to outside of school, he started a Science Olympiad team in 2007, taking care to involve parents in supporting these and other enrichment opportunities. His efforts have been noticed and rewarded. In addition to being awarded a NSTA/Vernier Technology Award and a Toyota Tapestry Grant, Chris was named Louisiana Science Teachers Association Outstanding Middle School Teacher in 2009 and Region 8 Middle School Teacher of the Year in 2010.



Maryland

MONA BECKER

Mona Becker has six and a half years of teaching experience and currently teaches 8th grade Earth science at Sykesville Middle School in Sykesville, Maryland. She has a B.S. in geology from Millersville University, an M.S. in geology from Virginia Polytechnic and State University, and a Ph.D. in geology from State University of New York at Stony Brook. She was nominated by Bradley Yohe, Supervisor of Science for Carroll County Public Schools. She has received several teaching awards including the Excellence in Teaching Award for Earth and Space Science Department at State University of New York at Stony Brook and more recently the Geoclub Award for Best Teacher for the Department of Earth and Planetary Sciences at the University of Tennessee. She has served as the editor for the Northeast Section of Association for Women Geoscientists. “[Dr. Becker] is a very caring instructor who always has time for her students and parents.”

New Jersey

PETER DOROFY

Peter Dorofy was nominated by John Moore, who is currently serving as an Einstein Fellow. Peter has 10 years of teaching experience and is currently teaching Earth science for grades 9-12 using geospatial technology at Burlington County Institute of Technology in Medford. He has an A.A. in liberal arts and sciences from Burlington County College and a B.S. degree in physics from The College of New Jersey. Peter is a member of Sigma Pi Sigma Physics Honorary and Phi Theta Kappa Honorary. He is a STARLAB planetary instructor and developed Terrain Viewer, which allows students to take a virtual tour of landscapes generated from 8-bit height maps based on Digital Elevation Models. His nominator writes “[He] believes that a number of students come into [his] classroom having low self esteem, feeling inadequate, and unsure of themselves. [His] goal as a teacher is to reverse that thought process.”



New York

HEATHER H. McARDLE

See Eastern Section Award Winner

Oregon

MIKE ROCKOW

Mike Rockow holds a Ph.D in igneous and metamorphic petrology from Washington University and teaches 8th grade Earth science. He has been instrumental in developing inquiry-based curriculum at Leslie Middle School in Salem, Oregon. He works with the Oregon State Board of Education on science standards, has served as a reviewer for NSTA, and participates in a variety of workshops and professional development opportunities.

Mike has also created a mentor program for 8th grade science students. Each year 30-40 students are teamed with scientists who help the students with the design and logistics of a science research project. Since the inception of this project, the participation of 8th graders from Mike's school in Oregon's state science fair has doubled, as have the number of awards won. This research program was awarded the Oregon Museum of Science and Industry's Middle School Science Research Program of the year in 2007.



Pennsylvania

KAREN AUCKER

Karen Aucker holds a B.S. in secondary education Earth and space science from Lock Haven University and has done additional graduate work at Penn State, Bloomsburg University, and SUNY Brockport. With an amazing 37 years of experience she currently teaches Earth and space science at Jersey Shore Area Senior High School, in Jersey Shore, Pennsylvania. She is a member of the Pennsylvania Association of Supervisor and Curriculum Development, the National Association of Geoscience Teachers, National Earth Science



Teachers Association, and National Education Association. She organizes field experiences for students which have included: Penn's Cave, Penn State Mineral Museum, Gettysburg, Williamsburg, Boston, Pennsylvania's Grand Canyon, and the Poconos. She was nominated by Nancy L. Steinbacher, the reading specialist at her school. "Karen believes that all students can learn and they have the potential to reach for whatever goal they set if willing to spend the time and work."

South Carolina

JEANNE HARTLEY

Jeanne Hartley has taught Earth science at Lexington Middle School in Lexington, South Carolina, for over 30 years and has achieved National Board certification. She was practicing inquiry-based instruction in her classroom long before the education establishment recognized its value, and has served as a mentor to other teachers, both in her district and in summer courses for teachers at the University of South Carolina.



Jeanne is very quick to see when and why an activity is not working for some students. She is able to place herself on the student's level, understand what the student can do, and see what the student needs in order to get a grasp on the subject at hand. She has worked for many years with another teacher to plan, organize, and lead a trip to the Grand Canyon for 8th graders, and she organizes several events each year to help fund this trip.

West Virginia

ANDREA ANDERSON

Andrea Anderson has 38 wonderful years of experience teaching astronomy, physical science, chemistry, and Earth science. She currently teaches at Weir High School in Weirton, West Virginia. She has a B.A.

in secondary science education from West Liberty State College and an M.A. from West Virginia University in communication studies. Andrea had multiple nominations, first coming to people's attention by attending every RockCamp program that the WV Geologic Survey held. She is GLOBE certified and has attended numerous professional development activities including NRAO Green Bank for which she served as a mentor. She served as the chair of Northern Regional Science Consortium, was Weir High Teacher of the Year AND West Virginia Teacher of the Year. "Andrea has an amazing quiet strength about her. She is present at most WV professional development science workshops and conducts some of her own! She operates one of the few planetariums in the state of WV!"



Washington

KAREEN BORDERS

Kareen Borders has been teaching for over 16 years. She was recently awarded the American Institute of Aeronautics and Astronautics Educator Achievement Award for comprehensive use of inquiry science. Kareen has been in the forefront of using cutting-edge technologies to enhance pedagogy in her classroom, including the use of a personal response system and smart boards. For the past two years her Gig Harbor, Washington, students have been engaging in discourse with a variety of geoscientists as a part of Pennsylvania State FLEXE: From Local to Extreme Environments, a project in which students communicate with scientists in the field, conduct investigations, compare results with other schools, and analyze their own geoscience environment. Kareen also won the NASA National Lesson Plan competition from Penn State, University of Washington, and NASA for writing her interactive, immersive lesson, "Hurricane!" She sets up field research experiences for other teachers and manages a NASA Explorer School partnership for her school.





ON THE FRONT COVER:
One of the Earth's endless
collection of fascinating
puzzles, a sliding rock on the
the Racetrack Playa, a scenic
dry lake feature located in
Death Valley National Park.

*[Photo by Inge Johnsson,
www.ingejohnsson.com]*