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Photochemical sciences research gets worldwide attention, help from undergrad

An article in the journal ChemComm by researchers in Dr. Pavel Anzenbacher's lab has received international attention. The report, about a novel approach to detecting dangerous heavy metals in water sources, was a lead story in the journal last summer. Designated a "hot article," it continues to be referenced by other sources including, recently, the Royal Society of Chemists, said Manuel Palacios, a fourth-year doctoral student in photochemical sciences from Venezuela who is the lead researcher on the project.

"The proverbial cherry on the cake was that the article was also featured on the journal's cover," Anzenbacher said.

"It's had a lot of impact," Palacios said. "The article's reviewers felt it was very important, and its publication was expedited." ChemComm specializes in high-quality research across the discipline.

Palacios, Anzenbacher and the rest of the sensor lab of the photochemical sciences team are pleased with the response to the collaborative work, they say. They are also proud of the participation of then-undergraduate Bethany Hausch, a chemistry major from Maumee, who spent the summer between her freshman and sophomore years in 2006 working in the lab laying the groundwork for the project. She is one of very few undergraduates to have had their name among the list of authors on a professionally published scientific article.

Hausch graduated from BGSU this month and will pursue a graduate degree in food science at the University of Illinois at Urbana-Champaign, where she plans to research sensory evaluation, or consumers' perception of foods.

The other authors of the article, "Hydroxyquinolines with Extended Fluorophores: Arrays for Turn-on and Ratiometric Sensing of Cations," are Anzenbacher, Palacios and BGSU post-doctoral students Drs. Karolina Jursikova, Victor Montes, Zhuo Wang and Grigory Zyryanov.

Hausch's participation was funded in part by a summer research grant from the former Office of Undergraduate Student Research; the project also received support from a Faculty Research Committee grant. "We're thankful for the financial contributions from Bethany's summer stipend and my Faculty Research Committee grant from BGSU," Anzenbacher said. "The good people, offices and sources who helped are very much a part of the success."

Creating 'artificial tongues'

Palacios's research involved finding an array of sensors that, "like artificial tongues," could detect toxic heavy metals. The sensors had to first bind the metals and then become fluorescent—making them easy to recognize even by the naked eye when illuminated by black light.

The ultimate goal is to create a testing method that is simple to use, such as a dipstick analysis or chemical test similar to those used for swimming pools, Palacios said. Public health officials could use the system to test groundwater or food products such as bottled, enhanced waters; the method might also be used by doctors to detect phosphates in human blood, which are linked to cardiovascular disease. "These sensors have a lot of potential," Anzenbacher said.

Getting to where the research is now has required tremendous time and effort. "I started the project in the first year of my Ph.D. but, unfortunately, I only have two hands," Palacios said. "Bethany's work was used a lot, and the insight we gained from what she did was very helpful. She was really committed and she's good at it. She also has the patience."

Hausch got hands-on experience in how science is conducted. "Things take a lot longer

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than you think they will," she said, noting that an entire morning could be spent preparing solutions and making calculations. "I first conducted a literature review to see what metal cations—positively charged atoms in solutions—and what sensors had been reported by other researchers so far." Then she began the long process of testing eight polymers—long chains of repeating units employed to help draw the cations in—to see which would work best with the sensors, a process fraught with difficulty as the sensors and polymers do not always behave as planned. "It took many tries to get the right combination," she said.

"The process of applying sensor solution and then the cation solution to microscopic slides is very tedious," she said. "The engineering part still needs to be developed before it can be used as simply as a garden-soil pH test or pool-testing kit."

But there was also the anticipation of results and the rewards of creating something new. She worked with Anzenbacher and his team to create new sensors and test their response to the presence of heavy metals.

Hausch was invited to work in Anzenbacher's lab when she took a freshman organic chemistry class with him. In the second semester of her freshman year, she changed her major to chemistry.

In addition to eventually having her name on the published article, "I got academic credit for my work in the lab," she said. She also had the privilege of working with Anzenbacher, an internationally known photochemical scientist and Sloan Research Fellow, and his cutting-edge team.

"We are very proud of her," Palacios said of Hausch, noting that the University of Illinois is a highly ranked school and "food science is akin to chemistry." He pointed out that her experience in the BGSU lab should stand her in good stead. "You learn a skill, and working with real scientific problems and how to tackle them is very valuable experience," he said.

"We pride ourselves here at BGSU in providing excellent undergraduate education in the classroom but also world-class research. The students here work in the team with the professors, postdoctoral associates, graduate students—the whole team, exactly as it will be when they make it to an international company or research institute. You learn more from more people. That is why it is so important to experience working in a team," Anzenbacher said.

"Our lab is always happy to take undergraduates who are willing to do some hard work. They can knock on our door and maybe get a publication out of it," he added.

To view coverage of the research project, visit:

http://www.rsc.org/Publishing/Journals/cc/News/B705392D_Anzenbacher_060607.asp

http://www.rsc.org/Publishing/ChemTech/Volume/2007/07/sensor_arrays.asp

<http://personal.bgsu.edu/~manuelp/Publications.html>

Summer sojourn at Cape Cod arts center to give space, time to writer Williams

Summer is often idealized as a season of endless free time, when the obligations of life and work are relaxed and we can do the things we dream about. For most of us, this is but a childhood memory, but for Theresa Williams, creative writing, this summer will truly be such a time.

Williams has been chosen for a writing residency in Provincetown, Mass., on the tip of Cape Cod. Paid for through the Ohio Arts Council, the competitive award will enable her to spend three months at the renowned Fine Arts Work Center, where she can have uninterrupted time to write, along with the company of other authors and artists and the expansive seacoast for inspiration.

Located in the country's oldest continuous arts colony, the center was co-founded in 1968

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by a group of now-famous writers and artists, including the late Poet Laureate Stanley Kunitz and painter Robert Motherwell, and has spawned many well-known authors and artists.

The OAC grant provides traveling and living expenses, a monthly stipend and the opportunity to do a public reading and to take three workshops, which are taught by prominent writers and artists. (See www.fawc.org/.)

This is the second OAC grant Williams has received. In 2006, she won an Individual Excellence Award and the top prize of \$10,000. She has published short stories, poems and a book, *The Secret of Hurricanes*, in 2002. (See www.bgsu.edu/offices/mc/monitor/06-19-06/page21923.html.)

Monitor spoke with Williams as she prepares to leave June 2 for her sojourn in New England.

Q. Did you apply for the grant in order to work on a specific project?

Yes, my main goal is to finish my Ohio River project. In 2005, my husband and I floated the whole length of the Ohio in a small boat, and I want to write a novel about it. I've been researching the last three years and I've made many attempts at finding the center of thought and right voice for the work. I hope that three months in a beautiful watery setting like Provincetown will inspire me.

Plan B is to work on several short stories while I'm there.

Q. Have you ever spent this much time away from your family, and how do you think having this solitude and time to write will affect your work?

No, I haven't. Of course I'm a little concerned about that because I'm not sure what my reaction will be. I think it will be hard. My children don't live at home anymore but they all live in Bowling Green. I've not been away from my husband any longer than a week or so. I hope I can channel the loss of contact with my family into good writing. On the other hand, solitude is something I treasure, and I hope it will make all the difference in my ability to get a lot of writing done this summer.

Q. Do you think being alone will help you write more from your inner self, as opposed to your identities as a mother, spouse, faculty member, etc.?

You've hit on an important struggle in my writing life. I do think that being on my own will give me the courage to write from a true part of myself. When I say "true," though, that doesn't necessarily mean authentic to "who I am as a person." It could mean being authentic to who the characters are in the story I want to tell. It does take courage to do that, because it's hard at first to separate your characters from yourself. Your characters might be more heroic than you are or more despicable.

Q. How closely does your work spring from your own experience?

All of it, in one way or another, springs from my own experience. But the writer has to be true to the story and not to the experience. So, therefore, the story will always be different from the "way it really happened."

Q. Are the same themes still recurring throughout your writing? How have they changed with maturity? We'd talked about the terror of the sublime in the past—is this still a concern in your writing?

My first novel, *The Secret of Hurricanes*, was based on my childhood and adolescence in North Carolina. While writing that book, I was able to deal with a lot of baggage from my past. I do still write stories for that purpose, but less and less. I've become more interested in the grand themes of human experience. I know this sounds egotistical, but I don't mean it that way. I mean that I'm more interested in connecting my own experience to something outside of myself, outside of my own pain. These grand themes can make you humble.

So this notion of the terror of the sublime is still very much a concern in my writing. For

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instance, I must try to feel what it was like for Lewis and Clark when they went down the Ohio River. They had no idea what they would encounter. True, as with any long journey, a lot of it was boring. But that boredom was punctuated by awe and wonder. In fact, they were actually on the lookout for living mammoths! This is because the belief was that God had created a perfect universe, and, in a perfect universe, no animal could become extinct. Mammoth bones had been found along the Ohio River, particularly in an area called Big Bone Lick. So it followed that there must be some living mammoths somewhere to the west.

Q. Have you finished the short story collection you were working on in 2006, and, if so, has it been published?

No, but I have published individual stories from the collection. The last published story was "Trash." It appeared in The Sun magazine in September 2007.

Q. It's interesting that the river project had this water theme, and now you'll be on Cape Cod. Is water an inspiration for you?

I've always been afraid of water. I grew up near the beach in North Carolina and so you always heard about people—sometimes people you knew—drowning. I did take swimming lessons but I've never had a lot of confidence in myself as a swimmer. So water takes on an aspect of terror for me that it doesn't for a lot of people. There are moments when I feel calm around water, too, but mostly it scares me. I do plan to take Whitman's Leaves of Grass with me. "Out of the Cradle Endlessly Rocking" is one of my favorite poems. The poet Theodore Roethke also wrote a lot about water, saying "Water is my will and my way." I take a lot of comfort in Whitman and Roethke's poems.

Q. Please speak a bit about your work style; for example, do you try to work a set number of hours a day or as the inspiration strikes you? Morning or night? Do you keep notebooks?

I'm not very organized, so a strict work schedule would not work for me. Sometimes the hardest part is starting because, you know, sometimes you'd rather just play. Or maybe you're afraid inspiration won't come and you don't want to feel defeated so you just don't write that day. You feel like a failure either way, but if you don't write, at least you can tell yourself that you might have gotten inspired if you'd tried.

Once I'm going, once the writing is going well, I don't take very good care of myself. I stay up at all hours, push myself to exhaustion, and it can sometimes take me several days to recover from an intense work session. It's very unhealthy, yet I don't know what to do about it.

Pema Chodron, a Buddhist nun, is a teacher and prolific writer. She seeks to apply Buddhist teachings to her everyday life. Obviously, it isn't spiritually rewarding to work yourself to exhaustion, so she doesn't. Even when the writing is going well, she stops. She understands that it's wrong to continue because she is giving in to a selfish want. I admire Chodron, but I'm not as enlightened as she is! I'm still selfish when it comes to my writing. I want to get it down, no matter what the physical effect will be on me. I figure I will just deal with the exhaustion later.

So the question hanging in the air is whether or not Provincetown will be good for me in the long run. Will it be freeing and give me more time to write? Or will I have so much time to write that I will work myself to the point of exhaustion? I just don't know.

Maybe the real benefit of my time at Provincetown won't be what I accomplish in terms of pages but what I discover about myself as a writer while I'm there.

Schocket's book on corporate power wins state history award

A book by Dr. Andrew M. Schocket, history, is the 2008 winner of the Ohio Academy of History Outstanding Publication Award. *Founding Corporate Power in Early National Philadelphia*, published by Northern Illinois University Press, was the unanimous choice of the academy's award committee, made up of four professors from universities and colleges in Ohio.

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Published in January 2007, *Founding Corporate Power* is a study in which Schocket analyzes the establishment, growth and operations of both commercial and municipal corporations in the nation's premier city. Between 1780 and 1830, corporations sprang up to provide water, transportation and financial institutions for the citizens of Philadelphia. An elite group of entrepreneurs controlled these corporations, but Schocket argues they generated widespread prosperity by offering services that allowed middle-class businessmen to flourish. This mixed legacy resulted in ambivalence toward U.S. corporations to this day.

The award was announced at the academy's annual spring meeting, at Wright State University in Dayton. Academy President Ken Heineman, speaking on behalf of the Publication Award Committee, said of Schocket's book, "This is a finely written and researched work in an understudied field. His ability to make a potentially dry topic into an engaging work points the way toward a promising career."

Schocket's teaching and research focus on the American Revolution, colonial North America and the Atlantic World. In addition to *Founding Corporate Power*, his work includes essays published in the *Journal of the Early Republic*, *Enterprise & Society*, and *Reviews in American History*. He addressed "American Corporate Power: Like So Many Other Things, It's in the Founding," on the History News Network in 2007 (Visit <http://hnn.us/articles/38870.html>.)

He has served as a member of the national steering committee of the History News Service and has directed a student-researched, public-policy history project officially commended by the Speaker of the Ohio House. His current projects include a book that reframes the American Revolution and a biography of Boston King, one of the founders of Sierra Leone.

Schocket's award-winning book may be purchased online at www.niupress.niu.edu.

BGSU aiding math and science TEAMS, DREAMS

More than 100 elementary and secondary school teachers, most of them from northwest Ohio, will spend several summer days at BGSU as part of ongoing grant-funded projects aimed at improving mathematics and science education.

The University is hosting an eight-day summer institute for Northwest Ohio Teachers Enhancing Achievement in Mathematics and Science (NWO TEAMS), which enters its first year as a fully BGSU project, and third year overall, with an infusion of about \$733,500 from the Ohio Department of Education's Ohio Mathematics and Science Partnership Program.

That state program is also funding, with just under \$483,000, a second year of Developing Regional Excellence for Achievement in Mathematics and Science Education (DREAMS). Participants in that teacher-education project will be on campus the third week of June for a STEM Leadership Academy.

STEM stands for science, technology, engineering and math, and both projects represent a continuation of Bowling Green's efforts to improve instruction in those disciplines.

Up to 100 teachers of grades 3-6 will be part of NWO TEAMS, which started as a joint effort between BGSU and the University of Toledo but is now strictly a Bowling Green project. The grant has risen from \$350,000 two years ago and about \$634,000 last year.

Also changing this year are the composition and focus of TEAMS. The project will address only science, and special education teachers have been invited to join their regular-classroom colleagues, with a goal of learning "differentiated instruction" for all students, said Jessica Belcher, program manager for the professional-development project as well as for DREAMS. "We took the advice of our previous participants who wanted more special education focus," she noted, adding that those teachers had said "we need more help in teaching to the gifted and the special-needs students in our classrooms."

The decision to limit the project's scope to science was for "no reason other than time constraints," Belcher explained, saying there are more topics to cover in science and insufficient

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time to cover math as well. Participants learn different classroom approaches and how best to address state standards.

Drs. Emilio Duran and Lena Ballone Duran, School of Teaching and Learning, are principal project leaders. Dr. Amy Scheuermann, intervention services, is the lead instructor of participating special educators, while Dr. T. Berry Cobb, a professor emeritus of physics and astronomy, will be one of two scientists teaching the teachers. Also instructing them will be other, leading K-12 teachers from the area, Belcher said.

Following the summer institute June 23-27 and June 30-July 2 will be eight days of school-year follow-up—four each in the fall and spring—plus another four days in summer 2009. Participants will receive stipends of \$400 for this summer and the 2008-09 school year and \$200 for summer 2009. In addition, through a leasing program with Delta Education and Carolina Biological, teachers will be able to use science kits not only this summer but also in their classrooms next school year.

DREAMS provides scholarship money for teachers to pursue master's degrees in physics, biology, interdisciplinary science (for grades 6-9) or math, or toward obtaining a specialist endorsement in science or math.

Under a cost-share agreement, the Graduate College and Continuing and Extended Education at BGSU contribute about half of the funding for the project. It pays for eight graduate hours of instruction, while individual teachers pay for one credit hour of instruction up front and all general fees—an arrangement that Belcher called “an excellent deal” for participants. A group of about 50 teachers started in the program last summer, taking graduate courses at Bowling Green, and is continuing this year. Their four-day leadership academy will begin June 16, while the new group—which has room for 65 participants—will come to campus the following day to start their leadership training. It will include such topics as leading organizational change, working with adult learners and identifying best practices in their field, according to Belcher.

“Our focus is to make them leaders in math and science education” in their schools, districts and the region, along with giving them content-area skills for master's degrees, she said. “They have to have the content to become a leader.”

Dr. Eileen Underwood, biology, is the project leader on the DREAMS grant, which is also increasing after starting this year at about \$350,000.

IN BRIEF

There were no news briefs this week.

CALENDAR

Tuesday, May 27

Weight Watchers @ Work, noon-1 p.m.,
314 Bowen-Thompson Student Union.

Thursday, May 29

Grilling on the Green, 11:30 a.m.-1:30
p.m., patio on Union Oval.

Monday, June 2

Sundaes on Mondays, free ice cream,
11:30 a.m.-1:30 p.m., Falcon's Nest, Union.

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FACULTY

German, Russian and East Asian Languages. Instructor. Call Tim Pogacar, 2-8028. Deadline: June 9.

Leadership and Policy Studies. Instructor. Call Craig Mertler, 2-9357. Deadline: June 9.

Human Movement, Sport and Leisure Studies. Visiting Assistant Professor/Instructor. Call Mary Bobb, 2-7234. Deadline: June 16.

Labor Postings

<http://international.bgsu.edu/index.php?x=facinfohires>

Contact the Office of Human Resources at 419-372-8421 for information regarding classified and administrative positions. Position vacancy announcements may be viewed

by visiting the HR Web site at www.bgsu.edu/offices/ohr/.

Employees wishing to apply for these positions must sign a "Request for Transfer" form and attach an updated resume or data sheet. This information must be turned in to Human Resources by the job deadline.

CLASSIFIED

On-campus classified:

www.bgsu.edu/offices/ohr/employment/BGSU_only/page11151.html

Off-campus classified:

www.bgsu.edu/offices/ohr/employment/cl_staff/page11145.html

ADMINISTRATIVE

www.bgsu.edu/offices/ohr/employment/adm_staff/page11137.html

OBITUARY

Harold Junk, 80, died May 15 in Florida. He retired after 26 years at the University.