



Solutions



8/17/2010

Message from the Editor:

The School of Natural & Computational Sciences (SNCS) was created three years ago when McMurry reorganized the academic administrative structure. This summer SNCS will be publishing a special alumni magazine which will hopefully become a regular occurrence. The magazine will feature profiles of some of our current McMurry students, pictures from the renovation currently going on in the Finch-Gray science building involving physics and biology, and a special feature on biology professor Dr. Clark Beasley who retired this spring after 41 years of service to McMurry. The school also established a “meet and greet” at homecoming this past fall that will continue. While the school takes on some of the responsibilities for keeping you informed, this newsletter will remain a more directed source of news from the chemistry department (although it may be shorter than in past editions). If you have any suggestions that would improve the content or format of this newsletter, please contact me.

Sincerely,
Dr. Edward Donnay
donnay.edward@mcm.edu

Alumni News:

Dr. Jane (Matthews) Wray ('67) wrote to express how special her 1967 classmates were to her, especially Jimmy Duff, Jimmy Moss, and Louis DeMent. She also wrote the following about her experiences at McMurry and what she has done since graduation:

Gamma sigma epsilon formed with my class and I was a proud member of it. Physical chemistry was the hardest and most wonderful course that I ever took. I had also wanted to know about wave mechanics for many years. I did not understand it well even after advanced inorganic, but I did have some inkling for which I am grateful. I was a troubled student at McMurry as so many people in the 60's tended to be. The dean at that time, Dr. David Ramsey, said that I was his only student who was on both Dean's Lists. I had very high marks, but I was also on his list of trouble makers. I went from McMurry to LSU where I began a research fellowship in biochemistry. Within 3 years I entered UTMB as a medical student. I collected good references and all A's which raised my status in applicants. I went on to get my M.D. and Ph.D. the latter of which was in neuroendocrinology. I took a residency in pediatrics and a fellowship in endocrinology at UCSD. I practiced pediatric endocrinology for 25 years in Austin, TX and recently slowed down to work in a little clinic where I practice both pediatrics and endocrinology. I am married and have 2 grown children.

Dr. Ralph Turner ('74) a member of the McMurry University board of trustees gave a spirited talk describing his work concerning estrogen replacement therapy. He also talked about how his time at McMurry helped him get to where he is today.

We reestablished contact with Bob Loyd ('75) who sent us a short email updating his address.

Bob Collins ('70) stopped by for a visit in December. He is now retired, but does consulting with OSHCON for the state of Texas (advising clients on OSHA health and safety regulations.)

Pam Veltkamp spoke with GaBrielle (Famble) Mallet ('05) who is still living in Abilene. She teaches mathematics at Texas State Technical College while taking care of her children.

Jennifer Coddling ('06) returned to McMurry to celebrate the graduation of her younger sister this May and visited with Dr. Veltkamp. Jennifer is at the University of Delaware and has about a year left in her work toward a Ph.D. in Biochemistry.

We heard via email from Rusty Sliter ('06) and Chris Ruggles (ex '08). Rusty has finished his 4th year at the University of Southern California, with approximately one year left on his Ph.D. in Physical Chemistry. He already has one publication (maybe two by the time of this newsletter) in the *Journal of Chemical Physics*, and hopes to begin some collaborative work at Jet Propulsion Laboratory studying the water ice in comet tails. Chris completed essentially all of the courses required for a chemistry major here at McMurry and then transferred to Texas A&M to major in chemical engineering. He plans to graduate in December, 2010, with a master's certification in process safety.

Catrina Reed ('07) stopped in for a visit after passing her preliminary examinations in the graduate program in biochemistry at Texas A&M. She gave a seminar to the chemistry club about her work with Dr. Ry Young. She is currently working on determining the mechanism of MurA (peptidoglycan biosynthesis enzyme) inhibition by the Qbeta (bacteriophage) protein A2. She was able to purify the Qbeta protein as a fusion construct. It has been over 25 years since it was identified and many members of the lab had been attempting to obtain the soluble protein for many years. She has devised her own form of binding assay and is gearing up to run kinetic experiments to determine the inhibition.

The department was shocked to learn of the sudden death on Dec. 8, 2009, of alum Tim Fliegel ('08). Tim was our Outstanding Senior when he graduated with a B.S. degree in Biochemistry. He was preparing to enter pharmacy school at the time of his death. Tim did research work in the department with both Dr. Arlen Jeffery and Dr. Ed Donnay. He was also a teaching assistant for 2 or 3 years and did excellent work for the department in that capacity. We are deeply saddened that Tim is no longer with his family and friends and that his promising career was cut short.

Departmental News:

The department is happy to introduce two new graduates, Katie Neal (B.S. in Biochemistry) and Brandon Randell (B.S. in Chemistry). Katie won the W. Norton Jones Scholarship as a junior and plans to gain employment while she applies to pharmacy schools for enrollment in the fall of 2011. Brandon won the Outstanding Senior Award this year. Brandon transferred to McMurry with credit for most of his general education courses and completed the requirements for chemistry major in two years by taking organic chemistry over the summer and three upper level chemistry courses in the fall and spring. He is currently seeking employment in the Abilene area with an interest in environmental chemistry or perhaps teaching.

Three outside speakers gave seminars during the academic year. On October 8th, Dr. Peter Kroll from UT-Arlington spoke about "Squeezing Matter and Predicting New Compounds: Computational High Pressure Chemistry". On November 12th, Dr. Jim Marshall and his wife discussed "Rediscovering the Elements: A Historical Visit of Europe". Dr. Marshall is an emeritus Professor at UNT and focuses on preserving the history of chemistry. Both seminars were arranged through the Southwest Speaker Exchange. Dr. Sung-Kun Kim from Baylor University (who is

currently collaborating on a research project with Dr. Shin) presented a seminar about new potential antibiotics targeting metallo- β -lactamase on February 4th. All three outside speakers had lunch with students interested in graduate work at their respective institutions.

The McMurry chapter of ACS student members was very active this year. They hosted two outside speakers. Catrina Reed ('07) as described in the alumni news section and Stephanie Rollin who gave a presentation describing her work with forensics and crime scene investigation for the Abilene Crime Lab. The members celebrated "Mole Day" by having a barbecue and sharing a mole-shaped cake at 6:02 pm on 10/23. The members also hosted a workshop in the spring semester for the McMurry 5th grade Science and Math Magnet School students.

Mr. Steve Davis ('98) attended the Independent Colleges & Universities of Texas (ICUT) Environmental Peer Audit at Baylor University on March 1-5, 2010. Together with two HRP Associates professional auditors, he participated with other ICUT members from Cisco, Midwestern, Lubbock Christian, McLennan, Dallas Baptist and University of Dallas. This is preparation of Peer Audit Review of the McMurry Campus in early November, 2010.

Dr. Edward Donnay joined two students, Heather Whitehead and Katie Neal, in attending an Advanced Instrumentation Workshop at Baylor University. The students got hands-on experience with state of the art instruments that are not found in undergraduate institutions. They also were able to speak to graduate students about what life is like as a Baylor graduate student. Dr. Donnay was able to form contacts for possible future access to the advanced equipment.

Dr. Pyenta and Dr. Shin taught the non-majors Chemistry in Society course this spring with a new focus in forensics. Dr. Pyenta taught the laboratory portion of the course and had fun with soil samples, footprint castings, fingerprint identification, and analysis of fake blood and urine samples. With his interest piqued, he is considering developing a forensics course for majors as a special topics course.

This year, Dr. Veltkamp put considerable time into revising the way that she taught General Chemistry. She used a method called Process Oriented Guided Inquiry Learning (POGIL). No lecture is used in this method. Instead, students are divided into groups of 3 or 4 and work the entire class period to answer a series of questions (the guided inquiry part) which lead to development of the major concept for the day. They are also encouraged to think about the process of learning, as well as to develop team skills (the process oriented part). This teaching style is based on many years of educational research and has been shown to help students learn and retain the material far better than traditional lecture methods do. (If you are interested in reading more about POGIL, the website is <http://pogil.org>). So far, it looks like the method worked well. There were far fewer Ds, Fs, and withdrawals from her section of Gen Chem I in fall 2009 than there were in her section in fall 2008. She attributes the gains in grades to the fact that in the POGIL method, the students were fully engaged with the material for 45 minutes, rather than the 10 to 15 minutes in a traditional classroom, as the students drift in and out of attention to the lecture. It has been a lot of work in this first year, since the commercial guided inquiry materials do not fit well with the text being used. She typically spent 3 to 4 hours writing the materials for one 55 minute class period. She plans to use this method again this fall, to take advantage of all the time she put in this year!

Dr. Edward Donnay spent most of his time this year teaching Physical Chemistry for the first time. He incorporated some new experiments including ones that take advantage of the new equipment that the department has acquired in the past few years. Furthermore, for the first time the students in Physical Chemistry II conducted an experiment and a group project with students in Advanced Physics Laboratory. The project was to measure the speed of light using Foucault's method which involves a high spinning mirror. The fabrication of this element proved to be more

challenging than the students guessed, and they were unsuccessful after repeated attempts. However they gained valuable lessons about doing original research where everything does not go as planned.

The whole department is excited about attending the Biennial Conference on Chemical Education at UNT in Denton, TX this summer. We hope to take advantage of all four of us attending, so that we can gain valuable insights into a wide variety of topics, such as teaching particular courses, retention of students in the courses or in the major, and assessment of student progress and departmental performance.

The department spotted a familiar name in the April 12th edition of Chemical & Engineering News: David Klassen honored for 50 years of ACS membership. Congratulations, David! (Emeritus Professor David Klassen taught at McMurry from 1969-2006.)

Finally, the department would like to welcome the newest member of the McMurry Chemistry family, Jacob Pyenta, born February 18, 2010. He was 8lbs. 1oz. and 20¼in. long. He joins his four older siblings Adam, Nathaniel (Natty), Gabriel (Gabby), and Lorraine (Rainey) in the Pyenta household. Congratulations, Paul and Josie!

Departmental Research:

In January, Steve Davis attended a seminar on ‘Bizarre and Unusual Radiography’, sponsored by Big Country Medical Imaging Society and held at Hendrick Medical Center. As President of the Society, he organizes two 8-hour seminars per year to help area technologists maintain continuing education requirements. There were 91 in attendance, some from Midland, Temple, Dallas, and San Angelo, Stephenville, Lawton, OK and all surrounding area hospitals. Their next meeting is in September and will cover current aspects of Digital Radiography as technology moves away from film based radiography.

On March 4th Heather Whitehead presented a poster for competition at the 22nd Annual Student Research Week at Texas Tech University Health Sciences Center (TTUHSC) concerning work she conducted with Dr. Hyunshun Shin in the summer of 2009.

This summer the department will have five undergraduate students conducting research on the Welch Foundation Departmental Grant, including all three from last summer continuing their work. Dr. Paul Pyenta will be advising Brad Henry, who will be continuing work on the construction of a green fluorescent protein (GFP) producing strain of *Bacillus thuringiensis* (Bt) to be used to track the life cycle of Bt in the gut of certain insects. Dr. Hyunshun Shin will have two students continuing to work with her. Erica Rawls and Heather Whitehead will design and synthesize amino acid-based small molecules as anti-cancer agents targeting arginine biosynthesis. Erica will synthesize a 2-amino-6-(hydroxyimino)hexanoic acid (AHHA) inhibitor based on the modified substrate of ornithine decarboxylase and arginase with oxime functionality and Heather will synthesize a 2-amino-5-(hydroxyimino)pentanoic acid (AHPA) inhibitor. A preliminary study has shown the growth of MCF-7 tumor cells in the presence of the compound AHPA has been reduced. Dr. Edward Donnay will be supervising Nathan Worley, who will work on the synthesis and physical characterization of a new class of polypyridyl ligands and their metal complexes. Jonathan Urbanczyk will be working on a collaborative project between Drs. Donnay, Shin, and Sung-Kun Kim (from Baylor University) on improving the solubility of a new antibiotic compound.

School and Miscellaneous News:

The academic year was touched with sadness as two current faculty members passed away: Mr. Johnny Cornelius from the School of Business, and Dr. Bill Short, a professor in Modern &

Classical Languages. As mentioned above, long-time member of the biology faculty Dr. Clark Beasley retired in May. This essentially completes the turnover of the science departments in the last 15 years.

There was substantial changeover in the administration as two vice-presidents stepped down: Enrollment Management and Academic Affairs. Furthermore, the SNCS dean Dr. Gary Wilson returns to full time teaching in biology this fall with Dr. Alicia Wyatt from computer science replacing him on an interim basis. The chemistry department is slowly adjusting to the different management style these changes created.

The McMurry Science/Math Advisory Board (SMAB) will be holding its next meeting on September 18th followed by a picnic at the Charles Bloomer Ranch. They will also be meeting to induct new members into the “Wall of Honor” on November 6th. The SMAB is a group of science, math, and computer science alumni who voluntarily assist the science and math departments at McMurry with a variety of support. If you would like to know more about SMAB, you can visit their website at www.mcmurrysmab.org or contact their current chairperson, Dr. John Manning ('79 Chemistry and Religion), at mail@jonmmanning.net.

40 Years Ago in the Department

(Below are news items and excerpts from the department newsletter from May 1970. The entire newsletter can be seen on our website, www.mcm.edu/newsite/web/academics/ncs/chemistry/news)

“The staff of the department this year has consisted of Drs. Lyndol Harris, Norton Jones, David Klassen, and Roy Sonntag.” Dr. Klassen was completing his first year at McMurry. Student award winners were: freshman-Bill Caffey, sophomore-Carl Hudson, junior-Joe Hudman, senior-Ricky Quy. Ricky Quy also was chosen by the Texas Chapter of the American Institute of Chemists as an outstanding senior chemistry major at Texas colleges and universities.

“The college calendar has been changed from its usual two-semester format to a 4-1-4 plan...A period of 3 or 4 weeks in January is to be given over to a single elective course” *(The current college calendar is a 4-4-1 system with a May-term instead of a J-term.)*

“Dr. Sonntag was elected Grand Recorder of the national chapter of Gamma Sigma Epsilon. Drs Harris and Sonntag have been promoted to the rank of Professor.” Dr. W. B. McDaniel retired from active service to the college. Dr. Thomas Kim was appointed as the eighth president of McMurry.

Alumni Search:

The following table contains the names of alumni for whom we have incomplete, incorrect, or no address. If you know the contact information for any of these alums, we welcome your sharing that information with us, or you might contact that person and ask him/her to contact us.

Greg Mamikunian '56	Susan Arth '75
James Tingle '59	Peter Morford '75
Jack Shultze '62	Conley Goines '76
Mohammad Dareshori '63	Gregory Guy Alexander '79
Gail (Hart) Long '64	Laurel Van Winkel '81
George E. Bernard '73	Mansel Harris '82
C. Randall Cotney '74	Marcus Von Babb '94