Welcome to this, the second issue of ‘Periodically Speaking’, the newsletter of the IPFW Department of Chemistry. We hope that you had a chance to read our inaugural issue published a little over a year ago in winter 2015, and that you were looking forward to our next issue. Our target audience includes alumni, current students, community members, and IPFW faculty, and, in fact, since it appears only electronically, it will be accessible to any individual wishing to get a chemistry department update. Please feel free to let others know about it.

Since our last newsletter, we are very pleased to let you know that Dr. Mohammad Qasim achieved the rank of associate professor through promotion with tenure. You can read on page 2 about Dr. Qasim’s interesting life journey that landed him at IPFW. The IPFW Chemistry Club (the Student Affiliates of the American Chemical Society) continues to be active and the “Pie the Professor” and “Pie the Officer” activities (page 3) are very popular. We are very sad to let you know that one of our freshman majors passed away this past September; may his memory be for a blessing.

A number of our chemistry majors won departmental honors (page 4) and one of our majors, active in co-operative education, relays some of the very interesting research opportunities he recently had at the National Renewable Energy Laboratory in Golden, Colorado.

We also highlight one of our alumni, Kali Fridholm, who currently works at the GM Fort Wayne Assembly plant. It is exciting to learn about our graduates productively using their chemistry degrees, and we look forward to hearing about and telling you about future success stories.

We have added a new feature to our newsletter so that any of you who wish to make a donation to the department may now do so electronically through the website. A major source of departmental scholarships comes through donations; we thank those of you who have contributed in the past and any of you who wish to do so in the future.

Again, welcome to this second issue of the newsletter and we would love to hear your feedback and information for future stories.

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Chair’s Corner

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I grew up in a university town in India. My father was a professor of geography. After I completed high school many suggestions about the choice of the major came up. At about the same time a new department, the department of biochemistry, was established in Aligarh University. The little I knew about biochemistry at that time fascinated me enough that I decided to choose it as my major. The times have changed a lot now from when I was a student. Mouth pipetting was the norm at that time, and I remember one instance when I sucked in an aqueous solution of picric acid in my mouth during pipetting. It tasted extremely bitter! Later, I learned that picric acid is also very toxic. Fortunately, nothing bad happened.

I worked as a Ph.D. student with Professor A. Salahuddin, who had just returned from the United States after completing his Ph.D. at Duke University with Professor Charles Tanford. My Ph.D. project involved chemical modifications of egg albumin and the effect of such modifications on protein’s hydrodynamic and immunological properties. That project not only allowed me to get the Ph.D. degree but also introduced me to the field of protein structure and function. After completing the Ph.D., I spent a year in Denmark as a Danish International Development Agency (DANIDA) University fellow, and on my return I got appointed as an assistant professor at my alma mater.

In 1987, a new chapter of my career began. I started applying for postdoctoral fellowships in the United States and was accepted in Professor Michael Laskowski’s lab at Purdue University. Michael was an eminent protein chemist and an authority on serine protease inhibitors. The next three years were exciting and fruitful. On my return to India, I greatly missed the research I was doing at Purdue University and the good time I spent in the United States. Fortunately, I got another opportunity to come back to Purdue University in 1994. I was about to become a full professor at Aligarh University at that time, but made the difficult decision to quit my job and rejoin Laskowski’s group. The next 10 years were the most exciting years of my career. We made many important contributions in the field of protease inhibitors in that period and published our work in some of the best journals such as Proceedings of National Academy of Sciences, Journal of Molecular Biology, Journal of Biological Chemistry, Biochemistry, Protein Science and Journal of the American Chemical Society.

The year 2004 brought some abrupt and unexpected changes in my academic life. My boss, Michael Laskowski, suddenly died while vacationing in Teton. That was a stunner and a personal loss. During all those years working in his lab, he and I had become good friends. I started looking for a job and finally got the position of associate professor at Xavier University of Louisiana. For a moment it appeared that everything had settled in a good way for me, but alas, within three weeks of my joining Xavier, Hurricane Katrina hit New Orleans. We were fortunate to survive. One whole semester was lost due to clean-up operations and repairs. After the university reopened, my family stayed back in West Lafayette. The family remained split for nearly three years before I found a new hope in the form of a faculty position at IPFW.

In my 35+ years of academic career, I have greatly enjoyed doing research and being involved in teaching, the research more than the teaching. However, as I am now approaching the end of my active academic career, I enjoy sharing my knowledge and experiences more than doing research. My story may be unique and different from others, but I believe that everyone goes through periods of ups and downs. However, one should never lose hope for the good.

Congratulations to Dr. Qasim for being promoted to associate professor and receiving tenure.
The main goals of the SULI program are to immerse undergraduates in an exciting research environment, pair them with an encouraging scientist mentor, and provide professional development for better written and spoken communication of their research. In short, it is designed to foster the development of the next generation of the nation’s scientists. Each term, I was paired with a mentor and worked on one specific project the whole time, which allowed for deeper involvement and more opportunities to make meaningful contributions to the research. Some of the research was proprietary; however during my summer term I worked on a project where we analyzed the lipids in algae for use as biofuel precursors and other high-value coproducts.

During my co-op at NREL, everyone was encouraged to ask as many questions as possible. Even basic questions were welcomed because it showed a willingness to understand the complex research more completely. The scientists were very understanding and encouraging; they remembered being in our shoes, grappling with the complexity of the research. Even though many of them have a Ph.D., the scientists treated me like I was one of them. The professional development activities were another important part of the program which, among other things, taught the students how to communicate complex scientific concepts in a way that any audience could understand. Scientists sometimes think writing or speaking is not as important as the research itself, but that is not the case. We have to realize that in order to maintain funding for projects and to communicate our work to the broader scientific community, it is important to be able to clearly explain why the research is important, how it will contribute to scientific knowledge, and how the project is relevant to the community as a whole.

The research was one memorable aspect of NREL, but this story would not be complete without mentioning how often we interacted with the other students while enjoying the outdoors. There is so much to do in Golden (a western suburb of Denver) and the surrounding area. Downtown Denver is a short drive away and Golden is nestled in the foothills, at the base of the Rocky Mountains. There were always groups trying out different activities on the weekends.

This co-op had a great impact on me and helped illustrate part of the broad range of opportunities to get involved in chemistry laboratory or teaching experience. I would encourage anyone interested in experiences like this to talk to the IPFW co-op office, apply to the SULI program, look into Research Experience for Undergraduates (REU) programs, and seek out tutoring or teaching experience. Actively pursuing these opportunities will help you gain a better idea of where your strengths will lead you in your future career so that you can be a more well-rounded yet focused IPFW chemistry alum!
Chemistry Club Celebrates Mole Week

The Chemistry Club took part in the celebration of Mole Week, which is observed by many chemists. One main purpose is to raise money for the Chemistry Club to help fund trips for students to learn what chemists do at their full-time jobs. The other part of Mole Week is to inform students on what chemists actually do in the real world and what materials chemists have made that make our modern world possible.

During Mole Week, a competition called “Pie the Professor” was held to raise money for the Chemistry Club. In the competition, students, faculty, and staff members donated money into a specific jar that has a professor’s face on it to “vote” which professor would receive the pie in the face. Whoever has the most “votes” or money in their jar wins the competition. A second part of the competition is called “Pie the Officer,” which is the same concept, but consisted of only the chemistry club officers. All together the Chemistry Club raised over $280.00. The professor who won this year was Dr. Columbia and the winning officer was Ian Gatchell.

Overall, this year’s Mole Week was a great success thanks to the professors, officers, and student body! We are looking forward to doing Mole Week again next year.

Student Awards Banquet

The department held its annual spring awards banquet in April 2015. Congratulations to the following students who were recognized for their academic achievements and service to the department:

Arthur W. Friedel Endowed Chemistry Scholarship: Jón Buldt

CRC Freshman Chemistry Award: Jin Tae Yang

Outstanding Organic Chemistry Student Scholarship: Benjamin Burris

David P. Onwood Scholarship: David Porter

Outstanding Student Affiliate: Andrea (Shriner) Moore

Faculty/Alumni Scholarship: Josiah McMillen and Andrea (Shriner) Moore

William F. Erbelding Award in Analytical Chemistry: Christopher McKay

Undergraduate Award in Organic Chemistry: Mieke Peels

Outstanding Chemistry Major: Shori Gerardot

The Ken Stevenson Outstanding Chemistry Major Award: Benjamin Burris

Wise Scholarship: Jacquelyn Kelty
Alumni Spotlight: Kali Fridholm

1. What made you decide to pursue a degree in chemistry?

Science and health were always my favorite subjects in elementary school. When I got to high school, I took Mrs. Wilson’s chemistry class and the rest is history. I loved the blend of science and math in chemistry. And Mrs. Wilson was such a wonderful teacher. She had a major influence in my decision.

2. What did you personally gain from earning a degree? How do these skills help you in your duties at your current job?

I’m currently working as a representative for Axalta Coating Systems at GM Fort Wayne Assembly. I work onsite in the Paint Shop to verify the chemical properties of the paint, the process, and the quality of the trucks. Many of the courses I took to obtain my degree not only emphasized the chemical knowledge I use daily, but also emphasized critical thinking and problem solving skills I use on a daily basis.

3. Do you have any memorable experiences within the IPFW chemistry department that you would like to share?

Participating in the IPFW Chemistry Club are the memories that stand out the most. “Pie-the-Prof” fundraiser was a blast! Mole week was always great, and so was just hanging out with friends in the Mole Hole. Dr. Columbia’s Saturday analytical exams were always good for a little stress and anguish. And of course there was Dr. Friedman’s otter.

4. Do you have recommendations for future students who are considering pursuing a degree in chemistry?

Make tons of friends and study with them as much as possible! Study groups are the best way to learn, especially with the heavy courses required for a chemistry degree. I made some of my best friends this way. Also, it’s important to take classes outside your field of study. I really wish I had taken a business class, even though it wasn’t required. Use your General Education classes to branch out and take something challenging instead of looking for a “blow off” class. And take advantage of professors’ office hours!

5. Is there anything you’d like to share with us about your family, your hobbies, your job, etc.?

Next month I will be a first time aunt! My niece is due at the end of March, and I couldn’t be more excited!