

AUGUSTANA

DEPARTMENT OF BIOLOGY

NEWSLETTER



AUGUSTANA
COLLEGE
SIoux FALLS, SD
57197
www.augie.edu

FROM THE DEPARTMENT CHAIR...

Greetings from the Augustana Biology Department where the students are all above-average! In fact our seniors scored 10 % above the national average on the standardized ETS Majors Exam they took last spring (one standard deviation above the national mean)! Not surprisingly, they are pursuing an impressive variety of career paths. Many have chosen to continue their education with acceptances into graduate and professional schools in medicine, dentistry, physical therapy, physicians assistant as well as Ph.D. programs.

We also added two more high school science teachers to the Sioux Falls area. Our acceptance rate for students applying to graduate programs continues to be high. We recently calculated the acceptance rate of our students applying to medical school to be 89% (2005-2007). For Ph.D. programs the acceptance rate was 100 %. Enrollment has been strong again this year. We will have 85 new majors for a total of 233 majors.

Augustana continues to be an attractive choice for students because of our strong academic reputation, but also because we have been blessed with a great location in Sioux Falls and numerous opportunities for internships, jobs and research.

If I have learned one thing during my time within the Biology Department and during my one year as Department Chair, it is the importance of having great colleagues to work

with. Our senior exit survey asked the question "what is the most valuable part of the Biology Department?" and almost universally the students answer that it is the faculty. We have a dedicated group of faculty committed to making a difference in the lives of students. On a sad note, we will miss the teaching of Dr. Maureen Diggins as she has retired from teaching. We are glad that she will continue to work for one more year managing the BRIN grant for us. I also regret to say that one of our newer faculty, Dr. Beaster-Jones, will be leaving us as she and her



Biology Department Members: L to R: (front) Steven Matzner, Mike Chapman, Mike Wanous, Ann Vogelmann; (back) Maureen Diggins, Eric Storlie, Laura Beaster-Jones, Paul Egland, Val Olness, Mark Larson, Libby King, Joan Ashton, Craig Spencer

husband accepted positions at Texas A & M University. We wish them all of the best in their new positions. This means that we will be searching for both Animal Physiology and Developmental Biology positions.

We continue to have a strong undergraduate summer research program with 28 biology

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DEPARTMENT CHAIR continued...

majors doing research this past summer. Most were within the Sioux Falls area, but several went to schools like MIT, University of Texas at Austin, and Vanderbilt. A big thanks to alumni who have helped to provide our students with research opportunities, especially Dr. David Bader ('74) at Vanderbilt who has mentored three students over the last five years.

Our academic program within the Biology Department has continued to evolve in recent years. Our faculty are using different technology, making use of new equipment, having students do more independent projects, and becoming involved in interdisciplinary classes. We added several new and very successful classes including evolution and development, pharmacology and a Spanish immersion class which studies ecology in Guatemala and Belize. Research within the department is also operating at a high level. Seven Biology faculty have had nine papers accepted for publication in 2008 and another three have been submitted. At least 25 current and past Augie students are co-authors on papers submitted in 2008. We have added several pieces of equipment including a new tissue culture hood, an inverted fluorescence scope, and an Agilent bio-analyzer. We modified Dr. Johnson's old lab into a shared molecular lab research space. We added one more

plant growth chamber (we now have four) to our new air conditioned growth chamber room in what used to be half of the biology garage area. While we continue to make improvements to our existing facilities, we have also been working with architects to develop a building renovation and addition plan. We are very excited at the prospect of new labs, research spaces, student spaces and a large atrium at the center of the proposed building. Feel free to stop by the Department to see the plans for our new science center.

Perhaps one of the best surprises of the year was in receiving two new biology endowed scholarships. The Runestad family endowed the "Runestad Endowed Biology Scholarship", and Dr. Ann Stalheim-Smith ('58) endowed The Ann Stalheim-Smith Biology Teaching Scholarship specifically for students with a strong interest in teaching biology as a career.

Some personal highlights for me for the year include presenting a poster for a USDA conference in Washington, DC. I continue to be the advisor to Augie Green (student environmental awareness club) which has really been active the last two years. On the teaching front, I was able to team teach a Capestone course with Dr. Reynold Nesiba (Economics) and Dr. Adrien Hannus (Anthropology) this past January entitled "Is Globalization Sustainable?!" On the research front, I was fortunate to be part of a paper published in *Oikos* with Dr. David Siemens at BHSU on the evolution of plant defense, which

included some transpiration measures I made for him. Also, Craig Spencer and I have had a paper accepted in the *American Midland Naturalist* on forest encroachment at Newton Hills State Park. I continue to work on my grant "Long-term hydraulic acclimation" funded by the U.S. Department of Agriculture. Derek Harmon (Jr, Lake Mills, IA) and MacKenzie Beukelman (So, Sioux Falls, SD) worked for me this summer and collected a mountain of data. My overall research goals are to determine the importance of hydraulic acclimation (changes in the xylem in response to the environment as the plant grows) and to determine the effects on hydraulic efficiency (ability to supply water to the canopy).

On the home front, Daniel just turned 13 and asked what kind of car we planned to buy him when he turned 14. He was somewhat disconcerted when we couldn't stop laughing. Joshua had a leading role in the 5th grade class play "Shh! We are writing the Constitution" that actually got on Sioux Falls television. Luke learned how to use "cheat codes" to get to higher levels on the computer game Mars Mission. The boys are all very much into video games; in fact they recently pooled their birthday money to buy a used PS II. Jetty is starting her first year as Chair of the Chemistry Department, and is still active on several national chemistry committees.

Hope this finds you well. Best wishes.

Steve Matzner
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FROM THE FACULTY

The 2007-2008 school year flew by like it always does. I taught Bio 120 labs for the second year and met some tremendous students, some of whom are in my genetics labs this fall and others I will see in the spring in microbiology. This school year is off to a great start with more 120 labs along with my regular labs. The summer is my down time with the upkeep of the microscopes as my responsibility. But this year was so special. We had a grandson born the first of June.

William Thomas is simply beautiful! All the kids are living in Minneapolis, which makes for many quick trips up there and back. Hope you all are well and happy. Please do stop by for a quick hello if you all are visiting Sioux Falls.

Take care,
Libby King
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My second year at Augustana brought many new challenges and responsibilities. I began advising Biology majors, participated in the fall Science Day and

was involved with the Distinguished Scholars competition. I also began serving as a member of the Section of Ethics and Humanities in the Department of Neurosciences at the Sanford School of Medicine, University of South Dakota. In addition to my previous teaching responsibilities (introductory biology, developmental biology and embryology), this year I taught a course on evolution and development over the January term. In just 18 days, my students and I investigated the cellular and molecular

FROM THE FACULTY

processes involved in regulating animal development and how changes in these processes underlie the evolution of animal design.

In the summer of 2008, I worked in the laboratory with Megan Thooft (2009; Tyler, MN) and Braedan McCluskey (2009; Hendricks, MN). We used molecular techniques to study gene expression patterns during the development of the invertebrate chordate amphioxus. This research was funded by the NIH-INBRE grant.

On a personal note, my husband Jayson and I are excitedly expecting our first child in October. As my colleagues at the Society for Developmental Biology meeting liked to point out, I am putting developmental biology into practice! I hope this newsletter finds you well.

Laura Beaster-Jones
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It has been a great summer here in the Biology department. I've had the pleasure of working with three great Augustana students this year. Bart Johnson (Marshall, MN, 2008), Eric Ransom (Wolsey, SD, 2010) and Ben Jensen (Rapid City, SD, 2010) worked with me on a project aimed at understanding the molecular biology of how one species of oral bacteria changes its gene expression when grown with another species. We got a lot of use out of the confocal microscope this summer for imaging our model system for growing dental plaque bacteria. We are in the processes of submitting their work for publication.

In addition to my usual teaching in Biol 120, Cell and the Microbiology courses, I am developing a new course with Dr. Michael Mullin from the History Department on how infectious diseases have influenced history. Our course, "Germs Gone Wild: The Influence of Disease on Civilizations," will be offered this J-term.

I continue to enjoy serving as the Chief Health Professions Advisor at Augustana. Our students have been as successful as ever in gaining acceptance to professional schools. This year, Augustana students compose 20% of the

in-coming class at Sanford School of Medicine at USD, with Augie contributing more students to that class than any other school!

My family has had a happy, healthy summer! I hope you have, too.

Have a great year,
Paul Egland
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I blinked, and my first two years are already completed! This past year saw my first round of advisees (brave souls, all of them!), new committees, faculty searches, and perhaps most exciting, working on the plans for the new Gilbert Science Center. It was a pleasure to work with individuals throughout the Natural Science Division to hammer out a proposal for a new building, and in the end we came up with a plan that seems to have captured everyone's interest and imagination. As a division, we've already seen an incredible rise in new courses, cutting-edge equipment, and novel research. Soon we will have a building that will accompany all this progress. I would invite anyone to contact us who wants to see our vision for the future of the Department and the Division.

I continue to teach and develop Biology 120, Cell Biology, Biochemistry, and Pharmacology (thanks go out to all my students and co-instructors who learn with me!), and this coming year will bring opportunities to expand my teaching repertoire. I will be assisting Dr. Eric Wells (Physics) in his cross-departmental class on Biophysics, and will have the pleasure of teaching a Capstone entitled "Race and Representations" with my spouse, Dr. Lindsay Twa (Art). Research continues to progress well, and I had three students working with me this summer: Jessica Vogelaar (2009, Worthington, MN), Erika Graslie (2010, Spearfish, SD), and Jordan Anderson-Daniels (2010, Brandon, SD). Our project again centered around the effects of omega-3 fatty acids on blood and platelet reactivity, a project run in collaboration with Dr. Bill Harris at Sanford Research. We all hope to present our findings at a national meeting in Kentucky in October 2008. This collaboration between Dr. Harris and me

has been successful beyond my expectations - we were fortunate to have a paper accepted by the journal *Thrombosis and Haemostasis*, due for publication in October 2008. More importantly, three Augie undergraduates (working with us last summer) were co-authors on this paper!

The year ahead will bring new challenges and opportunities. I will be a part of four faculty searches, and while these efforts take time and energy, they are also a great chance to shape the future of the Department and the College. It will also bring my pre-tenure review, which will serve as a good place for me to evaluate my start at Augustana, and more importantly, shape my future.

Again, we thank all of you for your continued support! Drop a line and let us know how you're doing!

Mark Larson
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I'll be starting my 11th year at Augie this fall! It has been a great time for me, mostly due to the wonderful students and colleagues that comprise the Augie community. For the past several years I have been teaching Human Physiology labs during the fall, Bio 110 during interim, and Human Anatomy during the spring semester. As the need arose for additional options in Human Anatomy it has been added to the summer school offerings for the past two summers with good turnout - it has been a challenge for both me and the students to get through all the materials and dissections in only four weeks! As many of you know Dr. Maureen Diggins, our human physiologist, has retired from teaching. I want to thank her for the opportunity to teach with her for the past several years, and for laying the foundations for the Human Physiology course - a course I have agreed to teach during the upcoming fall semester as the Biology Dept. conducts a search for a new animal physiologist. Best wishes to all!

Ann Vogelmann
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FROM THE FACULTY

The last school year was very active for the Biology department and all those in the Gilbert Science Center. We started in earnest our planning process for a renovation and expansion of GSC. During the course of the year we met as faculty, staff, and students and worked out the program needed for the new building. In June we participated in a design workshop with our architects, BWBR from St. Paul. We now have a conceptual design [see page 9], which includes a diagonal new wing across the two existing wings of GSC, creating a striking triangular atrium in the middle. This atrium will bring in abundant natural light and serve as a meeting place for students and a venue for Natural Science and campus events. We are very excited about the design. We also plan to incorporate many “green” features in the building and pursue LEED (Leadership in Energy and Environmental Design) certification from the U.S. Green Building Council. As shepherd of the planning effort, it was challenging, invigorating, and inspiring to lead this process so far and see the amazing results of our teamwork. This next year will be crucial as we seek significant fundraising pledges to make this dream a reality. Please feel free to contact me if you have any questions or ideas, or would like to help in any way.

This summer we had another great season of research on wheat genetics. Four students joined my postdoctoral fellow, Dr. Eric Storlie, and me. Rob Ihry (Fargo, ND), Marissa Kern (Porter, MN), Anson Lam (Hong Kong) and Heidi Senst (Aberdeen, SD) all worked on various aspects of the study on gene expression in the wheat seed. This fall, Rob starts his doctoral studies in molecular biology at the University of Wisconsin—Madison. Another research highlight was the publication of a second paper from my sabbatical leave at the John Innes Centre in England in 2004/2005. *Effective chromosome pairing requires chromatin remodeling at the onset of meiosis* (Colas, I., P. Shaw, P. Prieto, M. Wanous, W. Spielmeyer, R. Mago, and G. Moore) was

published in early 2008 in the Proceedings of the National Academy of Sciences, USA (105:6075-6080).

The last year has been a great learning experience for me as the Natural Science Division Chair. It is a privilege to serve in maintaining and building upon the excellence of our Division, and learning more about the college as a whole. This fall begins my 12th year at Augustana and I am already enjoying my Genetics class and getting to know the next crop of Biology majors. On the first day of class I shared Jesus’ parable of the three servants given “talents” to steward while their master was away (Mtt 25). This parable makes me think of our students—with so much potential, and a life to invest in service to other people and to the Lord.

Soli Deo Gloria!

Mike Wanous

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Science Education 2008:

Okay – I give up and throw in the towel...I don’t have time to write a “proper submission”...except to say that:

- We maintain our reputation for producing knowledgeable secondary teachers who are accomplished in the constructivist epistemology!!
- So much so that I’m proud to say that our students are hired before they have officially completed their student teaching!!

It was a much better year for me on the personal front – a year of healing! Made a trip to Disneyland with our granddaughters and to England to reacquaint myself with my family...both VERY good times! The quote for 2008 – words to live by! You gain strength, courage and confidence from every experience which makes you stop, look fear in the face, and do the thing which you think you cannot do.

Val Olness

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You may have heard the following riddle. What do you call someone who speaks 2 languages? ...Bilingual. What do you call someone who speaks 3 languages? ...Trilingual. What do you call

someone who speaks 1 language?American! Is there any truth to this? Like me, does it make you feel a bit uncomfortable, especially this day in age when the world is getting smaller in so many ways? At the same time I am pleased to report that in recent years we have seen a steady increase in the number of Augustana students taking advantage of international study opportunities during their time here (43% of current students). Over the last year or so, we have had biology majors studying in Norway, Costa Rica, Peru, Guatemala, and India to name a few. This Fall, we welcome a record number of international students to Augie (34). Current Biology majors hail from places like Cameroon and Hong Kong.

In somewhat related news, the college has begun to take a look at the “general education” requirements, which haven’t been altered much in the 17 years that I have been here. Is some tweaking in order? Major revamping? Status quo? Should the foreign language requirements stay the same? What about the 2 religion classes? Western Civ.? etc, etc. If you feel so moved, I’d appreciate any comments you’d like to pass along concerning YOUR “gen ed” program (pro or con), study abroad experiences (or lack thereof), and/or other related comments/suggestions.

Things are going well in the biology department as well as on the home front. I wish you all a healthy and fulfilling year.

Craig Spencer

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Augustana Student Scores

Augustana students scored 10% above the national average on standardized biology exams in 2008. For the biochemistry subject area, our students scored 30% above the national average.

DR. DIGGINS RETIRES FROM 28 YEARS OF TEACHING AT AUGUSTANA

Dear Friends, As I sit here in my smaller, but very nice, office in the east wing of Gilbert Science Center with the sunlight streaming in my south facing windows, it is easy to reflect on the fact that this is my 30th year at Augustana and think about the many truly wonderful colleagues, students, and advisees I have been blessed to have. I know I should shred all my files of former advisees and research students, and I will do so in the spring; but right now it is delightful to look at them, think of you all, and wonder how you are each doing now.

We continue to be blessed with bright, hard working students who are just basically good people. I never get tired of just "mentioning" that a certain outstanding scientist, physician, teacher, dentist, PT, PA, OT, DVM, optometrist, etc., etc. just "happens" to be one of our alums. Please continue to send us students like yourselves!!!

I am having a pleasant time just working half time and finishing out this phase of the NIH-INBRE grant that has been such a blessing to us. The grant is awarded to the Sanford School of Medicine at USD, and Augustana is a prime partner in the grant. With this program, we fund an average of 16 students each summer to engage in undergraduate research with our faculty or with colleagues from Sanford School of Medicine. We are in the 8th and final year in this phase of the program which is designed to attract students to careers in biomedical research and to get them into the pipeline working toward those careers. This past summer, Augustana faculty wrote our portion of the proposal, submitted it to the Principal Investigator

at Sanford SOM, and the whole grant was submitted by the July deadline. One of these months, we will find whether or not we are funded for another five years.

In addition to helping our students get a good start on research, which will help them gain admission to PhD programs, MD/PhD programs, and even MD programs, the grant has been a tremendous help to us in attracting new faculty and helping them off to a strong start at Augie. Having labs equipped with a 4 laser confocal microscope, RT-PCR, a 300



Dr. Maureen Diggins

MHz NMR, a multifunctional spectrofluorimeter, a DIC fluorescence microscope, an Aligent Bioanalyzer, etc., etc., as well as significant start up money for new faculty, helps tremendously with recruitment. Of course, knowing that one will have research support in the summer with a gifted Augustana undergraduate or two, doesn't hurt either. Our 6 INBRE funded faculty here at Augie have published 16 papers in peer reviewed journals in the last 3 years.

This has all contributed to a "culture of research" at Augustana which is a continuation of the long history of supporting undergrad research in the biology department at Augie. In addition to the INBRE funded students, we usually have another 10 biology students funded from individual faculty grants from NIH, NSF, USDA, or NASA. In addition to the 25-26 students working in biology, the physical science and computer science faculty typically support another 25 students on their grants. So if you are looking for bright graduate students, don't forget us!

On a personal note, we are winding

Biology Seminar Series

Each semester we host several research seminars covering a broad range of current biological topics. Our series is designed to provide opportunities for students and faculty to interact with scientists from other institutions. These seminars are open to the public.

If you would like to receive notification of the seminar schedule, please send your email address to Cheryl at cheryl.holzapfel@augie.edu

Our Faculty Associates

Amy Lewis, Ph.D. in Biological Sciences from South Dakota State University. Amy first joined the Biology Department as an Assistant Professor for the 2004 and 2005 academic years. She rejoined the Department in the spring semester of 2008 and continues teaching through this next academic year. Courses taught include Biology and Human Concerns, Biological Principles I, Principles of Ecology, Ornithology, and team teaching Intro. to Environmental Science.

amy.lewis@augie.edu

Eric Storlie, Ph.D. in Crop Science from Montana State University. Eric is our research/teaching postdoctoral fellow, funded by the South Dakota NIH InBRE grant. He is a plant geneticist and is working with Mike Wanous in research. Dr. Storlie is also contributing to teaching in the department.

eric.storlie@augie.edu

Biology Majors

2008 Admissions to Professional and Graduate Programs

GRADUATE PROGRAMS

Kristina Harris (Research Fellowship) Penn State
Ph.D. Program in Nutritional Sciences

Robert Ihry (Research Fellowship) Univ of Wisconsin
Ph.D. Program in Cell & Molecular Biology

Kyle Kelly (Research Fellowship) Univ of Colorado, Boulder
Ph.D. Program in Integrative Physiology

Jeff Misialek ('07) (Masters of Public Health) Univ of Minn

Molly Moor ('07)(Masters of Public Health) San Diego State U

Yoko Nagamori (Masters of Veterinary Public Health)
Mississippi State Univ

Karissa Tieszen (Research Fellowship) Univ of Wisconsin
Ph.D. Program in Cell & Molecular Biology

M.D./Ph.D. PROGRAM

Elizabeth Davis USD Sanford School of Medicine

MEDICINE

Rochelle Boote USD Sanford School of Medicine

Anders Davidson Creighton

Mandi Greenway USD Sanford School of Medicine

Matthew McDougall ('06) USD Sanford School of Medicine

Benjamin Nelson USD Sanford School of Medicine

Carl Rasmussen ('06) USD Sanford School of Medicine

Ian Thomas USD Sanford School of Medicine

OSTEOPATHIC MEDICINE

Teresa Dolphin ('06) Kansas City Univ of Med & Biosciences

PODIATRIC MEDICINE

David Rettedal Des Moines University

DENTISTRY

Jenna Davies Indiana Univ School of Dentistry

Bartholomew Johnson Univ of Minnesota

PHYSICAL THERAPY (Ph.D. PROGRAM)

Jena Peterka Creighton

PHYSICIAN ASSISTANT PROGRAM

Kimberly TeSlaa Univ Nebraska Medical Center

CLINICAL LABORATORY SCIENCE PROGRAM

Jared Likness ('00) Mayo Clinic School of Health Sciences

*Ten students from other academic majors
were also accepted into health related graduate
and professional schools in 2008*

DR. DIGGINS RETIRES continued...

down the research with the fat yellow mice which have hyperleptinemia, leptin resistance, and decreased fertility. Dr. Nels Granholm of SDSU accepted me as a colleague in the warm, supportive way so typical of him clear back in 1991 (not to mention supplying me with my first lethal yellow mice and their littermate controls), and we did some good fundamental work on the infertility in these mutants. Then from 2003-2006, Dr. John Brannian, from the Reproductive Endocrinology and Fertility Clinic at Sanford Health, and I had an NIH grant to study leptin resistance and ovarian function in these mice. This resulted in several posters and a presentation at annual meetings of the Society for the Study of Reproduction. This May, we had

to journey to Hawaii (tough job, but somebody has to do it) to present a poster on "Obesity-related Modification of Ovarian Gene Expression and Glucocorticoid Metabolism in Aging Lethal Yellow Mice." This work was done with the help of Dr. Kathy Eyster of Sanford SOM at USD and with Augie students (now alums) Mandi Greenway and Kim TeSlaa. My funding to attend the meeting was made possible by the Jane and Charles Zaloudek Faculty Research Fellowship for which I am extremely grateful. (While in Hawaii, my husband HL and I got to visit with Augie physics professor emeritus, J.D. Thompson and see some wonderful sights with him.)

In August, I attended the "White Coat" ceremony of Sanford USD SOM. It is the formal induction of the freshman class into the medical school. For the second year in a row, Augie had at least 10 of the 50 (or 20%) of the entering class and at least one or more of the four MD/PhD students. Presently, we are the number one school providing students to Sanford

SOM. I also noted the reflection at the ceremony was presented by our distinguished alum, Dr. Jerome Freeman, Chair of Neurosciences, and the white coats were presented by the distinguished new Dean of Clinical Medicine, Augie alum, Dr. Timothy Ridgway.

I could go on noting achievements of our alums, students, and faculty but should probably reign myself in. I am, indeed, very proud and happy to have been associated these three decades with such wonderful, outstanding people. In my comparative leisure now, I am always available to visit. So please don't hesitate to stop by, sit in the recliner in my comfortable office, and let me know what you have been up to.

*Blessings to all of you,
Maureen Diggins
maureen.diggins@augie.edu*



NIH-INBRE Student Research Poster Session Participants. USD Medical School—July 2008

RESEARCH PROJECTS IN BIOLOGY 2007-2008

- Laura Beaster-Jones:** "Evolution of the gene network required for chordate somite segmentation."
Funding: NIH-INBRE
Students: Braedan McCluskey ('09); Megan Thooft ('09)
- Maureen Diggins:** "Reproductive Biology: Obesity modified ovarian gene expression." (with Drs. John Brannian & Kathy Eyster)
Funding: NIH-INBRE & Sanford USD Medical Student Research Scholarship
Student: Mandi Greenway ('08)
- Paul Eglund:** "The genetic basis for interspecies signaling between *Streptococcus gordonii* and *Veillonella atypica*."
Funding: NIH-INBRE and Biology Department Research Funds
Students: Bart Johnson ('08); Benjamin Jensen ('10); Eric Ransom ('10)
- Mark Larson:** "Effects of omega-3 fatty acids alone and in combination with aspirin on platelets in healthy subjects."
 (with Dr. Bill Harris)
Funding: NIH-INBRE and Sanford Research
Students: Joe Ashmore ('08); Jessica Vogelaar ('09); Erica Graslie ('10); Jordan Anderson-Daniels ('10)
- Steve Matzner:** "Seeing the light; environmental effects on plant plumbing."
Funding: USDA
Students: Derek Harmon ('10); MacKenzie Beukelman ('11)
- Mike Wanous:** "Regulation of the starch biosynthesis pathway in wheat." (with Dr. Eric Storlie)
Funding: NIH-INBRE and Biology Department Research Funds
Students: Rob Ihry ('08); Marissa Kern ('11); Heidi Senst ('11); Anson Lam ('10)

Ten additional Biology majors participated in Summer Research/Internship Programs at the following institutions:

Sanford Research/Sanford School of Medicine

Harvard-MIT, Health Sciences & Technology Summer Institute

University of Texas Marine Science Institute

Avera-McKenna Research/Sanford School of Medicine

Vanderbilt University

Henry Doorly Zoo, Omaha

Augustana Graduate Facts

Augustana graduates made up 20% of the incoming medical school classes at the University of South Dakota for both 2007 and 2008.

Typically, over 50% of our graduates continue their education beyond Augustana and our students achieved an 89% acceptance rate into medical school over the period from 2005-2007.

Check out the Faculty Home Pages on the website

www.augie.edu/academics/biology

Additional Email Addresses in Biology

(Please note the faculty addresses are listed throughout this letter.)

Joan Ashton
(Greenhouse/Animal Room)
joan.ashton@augie.edu

Mike Chapman (Research Associate)
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Cheryl Holzapfel (Office)
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EMERITI

Gilbert Blankespoor
gil.blankespoor@augie.edu

Leland Johnson
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Lansing Prescott
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Larry Tieszen
larry.tieszen@augie.edu

BIOLOGY DEPARTMENT PUBLICATIONS

The year 2008 is turning out to be a good one for publications in the Biology Department. Many Augustana students are co-authors on these papers. There are also several collaborators from other institutions. Papers accepted for publication or already published include the following:

Mike Wanous, Eric Storlie (INBRE postdoc), and 13 students have a paper in *Theoretical and Applied Genetics* on gene expression of the HMW glutenins in wheat. This is a culmination of 5 years of work.

Mike Wanous, Isabelle Colas, Graham Moore, and other researchers from the John Innes Centre in Norwich England have a paper in *Proceedings of the National Academy of Sciences* on how effective chromosome pairing requires chromatin remodeling at the beginning of meiosis. This is the second paper to come out of Mike's sabbatical leave in England.

Mark Larson, Bill Harris (Sanford School of Medicine), and 3 students have a paper in *Thrombosis and Haemostasis* on the effects of omega-3 fatty acids and aspirin on platelet function in healthy subjects, a culmination of 2 years of work.

Paul Eglund and Kristi Eglund (Sanford SOM) have a paper in *Cancer Genetics and Cytogenetics* on HER-2 gene amplification in breast cancers of Native American women.

Paul Eglund and Kristi Eglund (Sanford SOM) and 5 students have a paper in revision for the *Journal of Bacteriology* on requirements for interspecies signaling in oral bacterial biofilms. This paper is a culmination of 4 years of work.

Maureen Diggins, John Brannian, and Kathleen Eyster (both of Sanford SOM) and 1 student have a paper in *Reproductive Biology and Endocrinology* on how pioglitazone alters ovarian gene expression in aging obese lethal yellow mice.

Craig Spencer, Steve Matzner, and Mike Chapman with 3 students have a paper in *American Midland Naturalist* on forest expansion and soil carbon changes in the loess hills of eastern SD.

Steve Matzner and David Siemens (BHSU) have a paper in *Oikos* on the evolution of drought tolerance and plant defenses.

Amy Lewis and Ken Higgins (SDSU) have a paper in *Prairie Naturalist* on landscape characteristics and bird species occurrence in sage brush habitats in North and South Dakota.

THANKS TO DEPARTMENTAL CONTRIBUTORS

Thanks to all of you who made contributions to the Biology Department during the 2007-08 year. One student in particular benefited from some of these gifts. Rob Ihry was able to present a poster at a prestigious Gordon Research Conference, Summer of 2007. Also, after Rob had graduated, we were able to use gift money to support Rob to continue to do research with Dr. Mike Wanous during the Summer of

2008. Rob's work enabled the publication of a paper in *Theoretical and Applied Genetics*.

In addition to student research support, gift money was used to purchase wet respirometers and a newer Hach Kit (measures NO₃ and PO₄ concentrations in water samples). This new equipment has helped us update our biology labs.

Congratulations to 2008-2009 Scholarship Recipients

Sven G. Froiland Scholarship in Biology

MacKenzie Beukelman
Matthew Braithwaite
Robert Fick
Rachel Hurley
Marissa Kern
Kyle Tamminga

Sioux Falls, SD
Sioux Falls, SD
Shanandoah, IA
Canton, SD
Porter, MN
Rochester, MN

Will Rosine Memorial Scholarship

Daniel Day

Vermillion, SD

Stalheim-Smith Biology Teaching Scholarship

Christie Schneider

Sioux City, IA

Ora Runestad Biology Scholarship

Derek Harmon

Lake Mills, IA

Y.T. Johnson Pre-Medical School Scholarship

Katelin Ahlers
Joseph Coppock
Benjamin Jensen
Rebecca Johnson
Laura Mandler
Matthew Moldan
Matthew Schafer
Melissa St Aubin
Emily Thornton
Jessica Vogelaar

Marshall, MN
Sioux Falls, SD
Rapid City, SD
Tea, SD
Sioux Falls, SD
Lamberton, MN
Worthington, MN
Marshall, MN
Sioux Falls, SD
Worthington, MN

IMAGES OF THE NEW GSC FROM THE CONCEPT DESIGN

See Mike Wanous article on page 4 for details





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DEPARTMENT OF BIOLOGY

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2008 BIOLOGY ALUMNI FILE UPDATE

If you have accomplishments and/or changes in your life, we would like to know! Help us keep our alumni file up-to-date and take a minute to fill out the form below.

Name: _____
 FIRST MAIDEN MARRIED

Year Graduated: _____ Phone: _____

Address: _____

Email: _____

Occupation/Place of Employment: _____

Graduate/Professional School Preparation in Progress or Completed: _____

Personal News/Professional News you want us to know: _____

If you know of potential students for Augustana College, please provide us with their name, address and phone number so that we may contact them.

Name: _____

Address: _____

Phone: _____

Name: _____

Address: _____

Phone: _____

Mail to: **Department of Biology**
Augustana College
2001 S. Summit Ave.
Sioux Falls, SD 57197

Or email information to: cheryl.holzapfel@augie.edu