

Missouri State University™

# Biomedical Times

The Newsletter of the Department of Biomedical Sciences

---

June 2000, Volume 1, No. 2

---

This is the second issue of the *BMS Newsletter*. The newsletter provides information about

- New programs in the Department and College,
- Student and Alumni News,
- Intersession and Fall Course Offerings, and
- Faculty and Student News.

---

## Faculty and Undergraduate Student Highlights

**Dr. Colette Witkowski**, Assistant Professor, is the first author on a recently published paper, "Altered surface expression and increased turnover of the  $\alpha 6 \beta 4$  integrin in an undifferentiated carcinoma," published in *Carcinogenesis* (vol. 21, no. 2 pp 325-330). Other authors include G. Tim Bowden, Ray B. Nagle and Anne E. Cress.

**Abstract:** The integrin  $\alpha 6 \beta 4$ , predominantly expressed on tissues of epithelial origin, is known to be variably expressed on carcinomas. The biochemical changes resulting in altered expression during tumor progression are unknown. We have analyzed the expression of  $\alpha 6 \beta 4$  in a multi-step mouse model of skin carcinogenesis representing normal keratinocyte, benign papilloma and malignant undifferentiated carcinoma. All cell lines expressed the  $\alpha 6$  integrin exclusively as the  $\alpha 6 \beta 4$  integrin heterodimer. Analysis of this integrin by flow cytometry and immunoprecipitation of surface labeled proteins revealed that the undifferentiated carcinoma cells have an ~75% reduction in surface expression of the integrin as compared with the keratinocyte and papilloma cell lines. The  $\alpha 6 \beta 4$  integrin which remains expressed on the carcinoma cells is diffusely distributed in the membrane and has an 12.5-fold increased biological turnover as compared with normal keratinocytes. The decreased biological half-life and the loss of polarized expression of  $\alpha 6 \beta 4$  on the carcinoma cells suggests an altered functional role for the  $\alpha 6 \beta 4$  integrin on carcinoma cells during tumor progression. These factors may contribute to the known suppression of hemidesmosome structures and the increased migration phenotype associated with some epithelial carcinomas.

At the spring meeting of the Missouri Dietetic Association, **Dr. Helen Reid**, BMS Dietetics Professor, was selected as the Outstanding Dietitian for the Southwest Missouri Dietetic Association. **Catherine Denure-Fleming**, a Missouri State dietetics graduate, was selected as the Outstanding Young Dietitian of the Year.

**Rachel Hayes**, senior dietetics student, was selected from numerous applicants across the state as this year's recipient of the \$450 Missouri Dietetic Association Eugenia Shrader Undergraduate Scholarship. Rachel plans to spend the summer completing an internship with the Center for Disease Control and Prevention in Atlanta.

**Sarah Schrieber**, CMB major, will be spending the summer at Washington University where she has a fellowship in the *Undergraduate Summer Research Program in Developmental Biology*. This NSF-sponsored ten-week program is designed to provide students an opportunity to engage in intensive research with Washington University researchers.

**Kevin Stockman**, CMB major, is representing Missouri State this summer at the University of Missouri-Columbia's *Life Sciences Undergraduate Research Opportunities Program*. The program offers students an intense eight-week research experience. Kevin will be working with Dr. Jan Miernyk researching biological effects of environmental changes on molecular chaperones. When cells are under stress, the molecular chaperones allow cellular proteins to avoid and/or recover from aggregation. Dr. Miernyk's lab is developing methods to properly identify the *in vivo* activities of the cells in order to understand the function of molecular chaperones.

**Kristin Ancell**, CMB pre-med major, was jointly presented the Callaway Outstanding Premedical Student Award with biology major Jennifer Marcellus. Here's a picture of the Callaway Award winners: [Jennifer and Kristin](#). Kristin is also the vice-president of the Premedical Society for 2000-2001.

**Brad St. Louis**, Spring 2000 dietetics graduate, has been drafted by the National Football League to play professional football for the Cincinnati Bengals.

---

### December 1999 Graduates

Dietetics majors and their internships: **Debbie Austin** (Internship, Sarasota Memorial Hospital, FL), **Katy Baker**, **Paul Becker** (Internship, Utah State University), **Kari Edgar**, and **April Popejoy** (Internship, Texas Woman's University).

Cell and Molecular Biology majors: **Jenny Brewer**, **Christine Brittain**, **Kimberly Laney**, **Jessica McDonnell**, and **Katherine Puetz**.

Masters in Nurse Anesthesia: **Victoria Cornwell**, **Stacy Howard**, **Charlotte Hutsell**, **Janet Shepherd**, **Tina Smith**, and **Shellye Stevenson**.

On a sad note, the BMS Department recently learned that **Tory Cornwell** died suddenly in St. Louis in June. Tory was the new mother of a baby boy born in January. Tory and her husband had moved to St. Louis earlier in the year where she was working occasionally prior to starting her new job as a nurse anesthetist this summer. She will be missed.

---

### May 2000 Graduates

Dietetics majors and their dietetic internships: **Melanie Fuller** (internship, ARAMARK/St. Joseph Health Center, KC), **Sarah Graham** (Public Health Dietetic Internship, St. Louis University), **Julie Hayes**, **Brook Kohls** (Internship and Graduate School, Colorado State University), **Laura Roling** (Internship, Missouri Department of Mental Health, Jefferson City), **Heather Sherman**, **Brad St. Louis** (drafted by the Cincinnati Bengals), and **Sandra Wheeler**.

Cell and Molecular Biology majors and their immediate career goals: **Amy Allen**, **Ryan Bailey** (Research Technologist, Mayo Clinic, Scottsdale, AZ), **Scott Butler** (Laboratory Biochemist, Springfield Dairy), **Carrie Edwards** (pharmaceutical sales, AstraZeneca in KC), **Ashley Garner**, **Eun-Young Jeon** (returned to

Korea), **Melissa Melton** (UMKC Dental School), **Wynde Miller** (Missouri State Physical Therapy Program), **Manisha Naran** (Kirksville College of Osteopathic Medicine), **Denise Perkins**, **Corinne Ridens** (U of Health Sciences College of Osteopathic Medicine, KC), and **Grant Young** (working in the Nixa school system as a boys basketball coach and attending Missouri State to complete requirements for a teaching certificate).

Medical Technology majors: **Amy Burroughs** and **Melissa McNeley**.

Masters in Nurse Anesthesia: **Jason Brooks** (St. John's Regional Health Center [SJRHC]), **Chris Green** (SJRHC), **Kimberly Green** (SJRHC), **Richard Bandalan**, **John Middleton**, and **Darcy Schwandt**.

Information about the **[Master of Science in Cell and Molecular Biology](#)** is now available online. The program is accepting applicants for the fall. Assistantships are also available.

### Students/Alumni Accepted into Professional Programs for Fall 2000

- **Matt Bruner**, Spring 1999, has been accepted into the Medical Program at the University of Health Sciences in Kansas City, MO.
- **Jessica McDonnell**, Fall 1999, has been accepted into the University of Kansas Medical School.
- **Melissa Melton**, Spring 2000, will be attending the University of Missouri-Kansas City Dental Program.
- **Wynde Miller**, Spring 2000, has been accepted to the Physical Therapy Program at Missouri State.
- **Teresa Nell**, Spring 1998 CMB graduate, will be attending the Southern College of Optometry in Memphis, TN. Teresa spent more than a year working as a research technician in the physiology laboratory of Dr. Sharon Milgram at the University of North Carolina. Teresa hopes to pursue a career in either vision therapy or pediatric optometry.
- **Aaron Rea**, Spring 1999, has been accepted into the Medical School at the University of Nebraska.
- **Manisha Naran**, Spring 2000, will be attending Kirksville College of Osteopathic Medicine.
- **Corinne Ridens**, Spring 2000, has been accepted to the University of Health Sciences College of Osteopathic Medicine in Kansas City.

### Alumni News

**Daniel Sturdevant**, a fall 1999 MS in Biology graduate who worked with **Dr. Christopher Field**, is now working at the National Institute of Health, National Institute of Allergy and Infectious Diseases, at the Rocky Mountain Laboratories in the Laboratory of Human Bacterial Pathogens, in Hamilton, Montana. Although his official title is molecular biologist, Dan indicates he is called "Dan the Array Man." According to Dan,

"Well I know you would never believe it but I arrive at work every day around 7:30 (yes, a.m.) and leave around 6:00. Sometimes even coming back in at night to finish up...and I am having the time of my life. I am not doing the sequencing that I thought, instead they gave me the microarray robot due to my mathematics and computer skills combined with the genetics. We can put two, three or even more entire GENOMES of different bacterial strains on a single chip and evaluate gene expression. Since being here I have learned how to design primers (1000s of primers), run RT-PCR and Real time PCR along with the programming and array design. Soon we will be tackling the software for analysis of the expression data from all of the scanning. I still can't believe they pay me to learn all of these fun procedures....With all of this going on I can still find some time to play in the mountains with the moose, elk, deer, bears, real mountain lions, and of course the dreaded lime disease carrying tick!"

**Dietetics Internships:** The following Spring and Fall 1999 dietetics graduates were in a variety of internship appointments: **Kristen Billingsley**, St. Louis University; **Judy Carver**, Missouri Department of Health, Jefferson City; **Sherry Diel**, Oklahoma State University, Stillwater; **Joy Procaccio**, University of Medicine and Dentistry of New Jersey, Scotch Plains; and **Bridget Thomason**, Olive View/UCLA Medical Center, Sylmar, CA.

---

### Faculty Retirements and Departures

**Dr. Detri Brech**, Assistant Professor, Biomedical Sciences, has returned to her home state of Arkansas to teach in the fall 2000. Dr. Brech had completed five years teaching in the dietetics program in the BMS Department, including courses in food preparation and preparation for optimum health, nutrition through the life span, and administrative dietetics. Dr. Brech was active in the Missouri Dietetics Association and counseled patients in nutrition at Taylor Health Center and the South Side Senior Center.

**Paul Cameron**, Instructor, Biomedical Sciences, has announced his retirement effective at the end of the summer 2000 semester. Mr. Cameron was one of the original faculty in the Biomedical Sciences Department when it was formed in 1984. His primary teaching responsibilities included BMS 222, Methods and Instrumentation in the Biomedical Sciences, where his expertise in laboratory teaching provided the foundation for acquisition of laboratory skills needed in subsequent BMS and chemistry courses. Mr. Cameron also taught and supervised graduate assistants teaching the BMS 308, Human Physiology, laboratories.

**Dr. Harley Mortensen**, Professor, Biomedical Sciences, retired in December 1999. A "Party for Harley" was held on November 5, 1999, in the renovated Plaster Student Union. Over 65 students, alumni, faculty, friends, and family members attended the event. In addition to a festive banquet, the program included comments by alumni, colleagues, family, and friends. Dr. Mortensen received a book of letters solicited from alumni, students, and colleagues, as well as a plaque commemorating the event. The Founder Scholarship Award was also announced at the banquet. The *Biomedical Sciences Department Founders Scholarship* has been established in the name of Dr. Mortensen and other faculty who were visionary in the formation of the Department of Biomedical Sciences in 1984. Undergraduate and graduate students in the Department of Biomedical Sciences will be eligible to apply for this scholarship, scheduled to be awarded for the first time during the 2000-2001 school year.

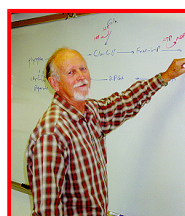
At the banquet Dr. Mortensen was recognized for his 32 years of service to Missouri State, the Student Society of Cell and Molecular Biology, and the Department of Biomedical Sciences. Throughout his career, Dr. Mortensen made significant contributions to his students' education, the biomedical sciences, biochemistry, and medical technology. Beginning in 1984, he served as the first head of the newly formed Department of Biomedical Sciences, a pioneering effort that pulled together faculty with expertise in human biology from a number of academic disciplines.

Members of the planning committee included **Corinne Ridens**, **Manisha Naran**, and **Wynde Miller**, CMB Society; **Ginah Mortensen**, Dr. Mortensen's daughter; and Dr. **Joanne Gordon**, BMS Faculty.

Pictures! (Click on the thumbnail images to view a larger image.)



Harley and his wife Syble.



Dr. Harley at work.

---

**Nurse Anesthesia Program Success Continues:** The National Certification Examination for the second group of MS in Nurse Anesthesia graduates continues to demonstrate the strength of the students and their educational program. Of the five graduates taking the test, all scored above the national average, with one student scoring 600 (maximum possible) and two scoring 596 and 586. In the first graduating class, two students scored 600, with two other graduates scoring 590 and 586. All of the graduates have scored above the national average.

---

### \$\$\$ - Scholarship Opportunities - \$\$\$

The *Advantage Missouri Program* provides loans for students majoring in designated critical need programs in Missouri academic institutions. Biomedical/biotechnology is one of the three programs identified as critical need areas for the first year of the program (advanced manufacturing and computer science are the other two areas). For more information on the Advantage Missouri Program or other student financial assistance programs contact the MOSTARS Information Center at 1-800-473-6757 or check the [Missouri Department of Higher Education](#) Web site. The Missouri State Office of Financial Aid should be able to give full details on the application process and other information about the program.

---

Do you have news you would like to see on the BMS Newsletter? Contact the [newsletter editor](#) with the details.

Links to prior newsletters

- [August 1999](#), Vol. 1, no.1.

[Go to the BMS Home Page](#)

This page was modified on October 6, 2000.

URL: <http://courses.missouristate.edu/jmg230f/newsltr00.html>