



The University of Iowa
Department of Biochemistry

BIOCHEMISTRY FACULTY

Charles Brenner, Head
Lori Wallrath, Vice Chair
Dale Abel
Sheila Baker
Heather Bartlett
John Dagle
Brandon Davies
Kris DeMali
Adrian Elcock
Ernesto Fuentes
Pamela Geyer
Catherine Musselman
Andrew Norris
David Price
Miles Pufall
Peter Rubenstein
Michael Schnieders
Debra Schwinn
Madeline Shea
Maria Spies
M. Ashley Spies
Elisabeth Swain
Eric Taylor
M. Todd Washington
Daniel Weeks
Ronald Weigel

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Theresa Gioannini
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Nancy Stellwagen
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Meng Wu
Liping Yu

EMERITUS FACULTY

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Thomas Conway
John Donelson
Alice Fulton
Rex Montgomery
Bryce Plapp
Arthur Spector
Earle Stellwagen
Charles Swenson

BIOCHEMISTRY STAFF

Karen LeVelle
Julie Lueth
Judy Means
Maren Rogers
Paul Rogers
Rosemary Stratton

BIOCHEMISTRY STORES

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Don Boehme
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BIOCHEMISTRY @ IOWA



Dear Friends of Iowa Biochemistry,

One hundred years of Biochemistry at Iowa!

Though we'll be celebrating the Department's 65th birthday on August 23rd and 24th, 2013, there's really a century of biochemistry at Iowa that is being completed. **Thorsten Ingvaldsen** received his BS in Chemistry and his MS in Medicine with a major in Biochemistry and a minor in Organic Chemistry before earning his PhD in Biochemistry. Work was carried out in University Hospital with Dr. **Louis Baumann**. Ingvaldsen's 1918 PhD was the fifth PhD credited to Chemistry by the Graduate College. Ingvaldsen and Baumann published their work on carnosine and creatinine in *JACS* and *JBC*. We figure that if he finished his PhD in 1918, he must have started making and characterizing beef muscle extracts about a century ago.

After 35 years of Biochemistry functioning as a division of Internal Medicine and/or Chemistry, 1948 is the year that Biochemistry was organized as a Department in the College of Medicine. Fifteen years later, in 1963, the Department organized an "Alumni Meeting in Miniature" to commemorate its accomplishments. We patterned the logo we'll use for the 65th celebration on that used in 1963. It's a steroid, overlaid on a Hawk: Herky on steroids, you might say (see page 3).

When you visit us in August, you will see friends and professors from the old days, and have the opportunity to meet current faculty and trainees. Our department has brought in nine primary and five secondary faculty members since July 1, 2009. We have recruited some of the most creative and original biochemists in the country in the last four years and this has allowed us to substantially strengthen our undergraduate, graduate and post-doctoral programs.

Our program will feature talks by **Gary Firestone** (PhD, 1980, with **Ed Heath**), **Tristram Parslow** (MD/PhD, 1983, with **Daryl Granner**), **Robert Deschenes** (faculty member, 1989-2004), **Debbie Thurmond** (PhD, 1997, with **Alan Goodridge**) and **Catherine Musselman**, our newest faculty member.

Sprinkled into the scientific and social programs will be remarks by **Morey Slodki** (PhD, 1955), **Charles Fishkin** (son of **Arthur Fishkin**, PhD, 1957), **Billy Hudson** (PhD, 1966), **Robert Barker**, **Rex Montgomery**, **Bryce Plapp**, **Arthur Arnone**, **Charles Swenson**, **Earle Stellwagen**, **Daryl Granner**, **Andy Robertson**, and others.

A full schedule is on page 3. For further information visit biochem.uiowa.edu/65.html, or give me a call.

If you come, you will witness the introduction of three new undergraduate awards, the great science that is going on now, and connect with people from the Bull, Vestling and Heath eras to the current day. We hope to see you at the celebration.

Best,

Roy J. Carver Chair and
Head of Biochemistry

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FACULTY HONORS

Peter Rubenstein received the President and Provost Award for Teaching Excellence from the Council on Teaching. This award recognizes his dedication to teaching and his unmatched contributions to graduate, post-graduate, medical and faculty education throughout his career.

Peter is also Chair of FASEB's Science Policy Committee and Vice President for Science Policy.

Todd Washington received the 2012-13 Collegiate Teaching Award from the Carver College of Medicine (CCOM). The award recognizes Todd's ability to make complicated concepts in biochemistry accessible and interesting with his engaging teaching style.

Todd also received a new R01 from the National Institutes of Health (NIH) for his project "SUMOylation and ubiquitylation of PCNA in recombination and translesion synthesis."



Todd Washington and Adrian Elcock at the CCOM Awards Banquet

Charles Brenner was named a 2012 Fellow of the American Association for the Advancement of Science, for distinguished contributions to the field of NAD metabolism. He was also named Chair of the Editorial Advisory Board of *ASBMB Today* after completing his term as chair of the Publications Committee.

Charlie received new funding from the National Science Foundation for his project, "Discovery of an Extracellular Mediator of Glucose Restriction in Yeast."

Miles Pufall was awarded a seed grant from the Holden Comprehensive Cancer Center's Institutional Research Grant through the American Cancer Society for his project on genome-wide, high-coverage shRNA screening to identify targets of treatment resistance in childhood acute lymphoblastic leukemia.

Heather Bartlett was promoted to Associate Professor of Pediatrics and Biochemistry. **John Dagle** was promoted to Professor of Pediatrics and Biochemistry, and his work was featured in a Children's Hospital video (www.uichildrens.org/childrens-content.aspx?id=239033).



Ron Weigel, the E.A. Crowell, Jr. Chair and Head of Surgery has accepted the additional position of Associate Vice President of the University of Iowa Health Alliance, a collaborative effort of Mercy Health Network (Des Moines), Genesis Health System, Mercy-Cedar Rapids and UI Health Care, to improve the scope, quality and cost-effectiveness of Iowa's health care services. Ron will oversee Alliance operations, including primary care, outreach, community-based research and education programs.

Peter Rubenstein and **Dan Weeks** were selected as directors of components of the new CCOM medical student curriculum. Peter will co-direct the Mechanisms of Health and Human Disease strand of the new curriculum, which will roll out in Fall 2014. Dan will co-direct the development of a new keystone course at the conclusion of the third pre-clinical semester.



Madeline Shea receives her award from Dean Debra Schwinn at the CCOM Awards Banquet

Madeline Shea received the 2012 CCOM Faculty Service Award, recognizing her development of the FUTURE in Biomedicine program, now in its fifth summer. The FUTURE program has created a network of long-term research and learning partnerships that extend to all corners of the state of Iowa. The program has mentored 21 faculty members and as many students from 16 primarily undergraduate institutions throughout Iowa.

Bryce Plapp served as Managing Guest Editor of the February 2013 special issue of *Chemico-Biological Interactions*.

WELCOMING NEW FACULTY

The department is pleased to welcome new faculty members for the 5th year in a row. Following last year's recruitment of **Maria Spies**, **M. Ashley Spies**, **Eric Taylor**, **Brandon Davies** and **Michael Schnieders** and the addition of **Andrew Norris** and **Lokesh Gakhar** to our secondary and adjunct faculty rosters, we are pleased to welcome **Catherine Musselman** as a primary faculty member, and **Debra Schwinn** and **E. Dale Abel** as secondary faculty members. We are also pleased to welcome back **Thomas Magin**, who will be a Levitt Visiting Professor with **Lori Wallrath** next year.



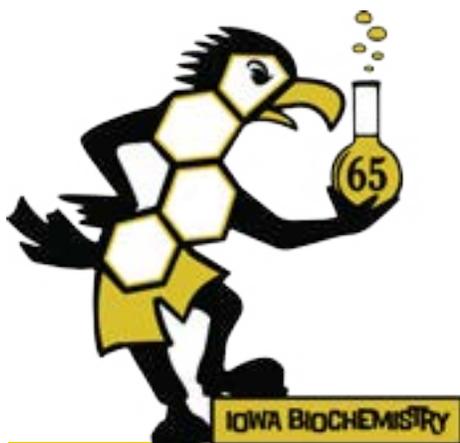
Catherine Musselman was a stand-out in an extremely competitive structural biology faculty search run by **Todd Washington** and colleagues. She will begin on July 31, and plans to focus on deciphering epigenetic mechanisms of gene regulation and how dysregulation of these pathways is associated with disease.

Catherine is a 2005 MS and a 2007 PhD in chemistry from the University of Michigan with Drs. Hashim Al-Hashimi and Ioan Andricioaei. As a graduate student, she used molecular dynamics simulations and nuclear magnetic resonance spectroscopy to elucidate the structural dynamics of TAR, an RNA molecule from the human AIDS virus.

In 2007, she returned to her native Colorado to perform post-doctoral research with Dr. Tatiana Kutateladze at the Colorado Anschutz Medical Campus in Aurora. In Dr.

Continued on page 4

65TH ANNIVERSARY



REGISTRATION INFORMATION

Please register at the following link by the revised deadline of **August 1**:

<http://biochem.uiowa.edu/65.html>

We are also collecting old photos and remembrances of times past on our Facebook event page:

<https://www.facebook.com/events/375910075855380>

Questions? Contact the Biochemistry Office at 319/335-7932 or email biochem@uiowa.edu.

The Department's 65th Anniversary, in conjunction with the 4th Annual Departmental Retreat, will be held on August 23-24. Registration has been extended through August 1, and the schedule of events includes:

Friday, August 23:

- 2:30pm *Registration in the Biochemistry Main Office, 4-403 BSB*
- 3:00-4:00pm *Tour of Department with Graduate Students*
- 4:00-6:00pm *Reception in EMRB Atrium*
- 6:30-9:30pm *Group Dinners, Downtown Iowa City*

Saturday, August 24:

- 9:00am-3:00pm *Scientific Retreat, Levitt Center for University Advancement*. The retreat will feature a poster session and oral presentations from alumni and our newest faculty member, including:

Robert Deschenes, former faculty member and current Chair of the Department of Molecular Medicine at the University of South Florida

Gary Firestone, 1980 PhD with **John Donelson**, currently Professor of Cell Developmental Biology at the University of California, Berkeley

Catherine Musselman, Assistant Professor of Biochemistry at the University of Iowa

Tristram Parslow, 1983 MD/PhD with **Daryl Granner**, and now the William Patterson Timmie Professor and Chair of Pathology and Laboratory Medicine at Emory University

Debbie Thurmond, 1997 PhD with **Alan Goodridge**, currently a Professor of Biochemistry & Molecular Biology at Indiana University

Informal talks will include: **Morey Slodki**, **Charles Fishkin**, **Billy Hudson**, **Robert Barker**, **Rex Montgomery**, **Bryce Plapp**, **Arthur Arnone**, **Charles Swenson**, **Earle Stellwagen**, **Daryl Granner**, **Andy Robertson** and others.

- 6:00pm *Dinner at the University of Iowa Athletics Hall of Fame*

NEW FACULTY, CONT.

Continued from page 3

Kutateladze's laboratory, Catherine characterized epigenetic effector domains using NMR Spectroscopy, X-ray crystallography and other biochemical and biophysical techniques. During her time as a postdoctoral fellow, she was supported by the NIH and the Cancer League of Colorado. Her postdoctoral work produced 16 publications, eight as first author.

As a new faculty member at Iowa, Catherine brings sophisticated questions and techniques to the analysis of protein and nucleic acid associations of the polycomb group 2 complex and the interactions of effector domain proteins with modified nucleosomes. She is described by colleagues as a perfect match with members of the biochemistry department at UI because she integrates interests in gene expression, chromatin, metabolism, and the structural basis of macromolecular function.



The Department is pleased to welcome new CCOM Dean **Debra Schwinn** as a secondary appointee. Debra began her tenure as Dean in October, 2012. She is a nationally known investigator in molecular pharmacology, with a current MERIT award from the NIH. She is also an elected member of the Institute of Medicine of the National

Academies of Science. In addition to her Deanship, she holds a primary appointment in Anesthesia and a secondary appointment in Biochemistry.

A native of Ohio, Deb earned her bachelor's degree from the College of Wooster and her MD from Stanford. She completed her residency at the Hospital of the University of Pennsylvania and did a clinical and research fellowship at Duke University with Nobel Prize winner Robert Lefkowitz before her faculty appointment there and her rise from assistant to full professor of Surgery, Pharmacology and Anesthesiology.

Most recently, Deb served as professor and chair of the Department of Anesthesiology and Pain Medicine, the Allan J. Treuer Endowed Professor of Anesthesiology, and as adjunct professor of pharmacology and genome sciences at the University of Washington in Seattle.

Deb has published more than 180 journal articles and book chapters in her career, and garnered countless awards. She combines a strong interest in beta-adrenergic receptor function with translational interests in drug and trauma sensitivities that arise from human genetic variation.



The Department is also pleased to Welcome **E. Dale Abel** as a secondary member. Dale is the Director of the Fraternal Order of Eagles (FOE) Diabetes Research Center (DRC) and the John B. Stokes III Endowed Chair in Diabetes Research. He is a professor of Internal Medicine and chief of the Division of Endocrinology, in addition to his secondary appointment in biochemistry.

Dale came to us from the University of Utah, where he was a professor of medicine, biochemistry and human genetics, and chief of the division of endocrinology, metabolism and diabetes.

After earning his MD from the University of West Indies in Kingston, Jamaica, Dale was a Rhodes Scholar and Clinical Research Fellow to Professor John G Ledingham at the University of Oxford in Oxford, UK, where he also earned his DPhil in Physiology. He was then an intern and resident in medicine at McGraw Medical Center at Northwestern University Medical School and served as chief resident of Internal Medicine at the VA Lakeside Medical Center there. He was then an instructor of Clinical Medicine at Northwestern, and after that, a clinical research fellow and instructor at Harvard Medical School with Barbara Kahn at the Joslin Diabetes Center.

In the course of his career, Dale has received numerous national honors and awards, has been a lecturer in the US and internationally, and is an author or editor on more than 140 publications. He is actively funded by the NIH and other agencies, and his program has been supported by the American Diabetes Association, the Juvenile Diabetes Research Foundation, and the American Heart Association.

Dale's research focuses on understanding the molecular mechanisms that are responsible for cardiac dysfunction in obesity, type 2 diabetes and type 1 diabetes, and in studies of the role of mitochondrial dysfunction in the pathogenesis of insulin resistance, obesity, and its complications. His laboratory has been a member of the Animal Models of Diabetes Complications Consortium for its 10 year duration, and as such has played an important role in defining and characterizing appropriate mouse models of diabetes cardiovascular complications.

Professor **Thomas Magin**, University of Leipzig, Germany, was awarded the Helen C. Levitt Endowed Annual Visiting Professorship to perform research in the laboratory of **Lori Wallrath**. Professor Magin is an international leader in molecular pathology of human skin blistering diseases and will begin his visiting professorship in the coming year.

PUBLICATION HIGHLIGHTS



Structure, 5 March, 2013

Ernie Fuentes and his research group were featured on the March 5 cover of *Structure* for their article on Tiam1 PDZ domain bound with syndecan1 ligands. The cover image illustrates the syndecan intractome and how a PDZ domain selects its partner protein. The paper is also a recommended article on Faculty of 1000 Prime and is co-authored by current and former Fuentes lab members **Xu Liu** (first author), **Zhen Xu**, **Tyson Shepherd** and **Ann Murray**.

Maria Spies was the editor on a volume from Springer, entitled “DNA Helicases and DNA Motor Proteins.” The book also features chapters written by Maria and members of her lab, including **Colin Wu**, **David Beyer** and **Mohamed Ghoneim**.

Earle and **Nancy Stellwagen** published an article in the June issue of *Biochemistry* entitled “DNA A-tracts are not curved in solutions containing high concentrations of monovalent cations.” The article was highlighted as a feature on the journal’s home page.

POSTDOCTORAL ACHIEVEMENTS

Lawrence Gray (Taylor lab) received fellowship funding from the Iowa Cardiovascular Center to study how the mitochondrial pyruvate carrier is regulated during diabetes. Funding comes from the Cardiovascular Interdisciplinary Research Fellowship, a training grant that has been continuously funded since 1975.

Alexey Soshnev (formerly of the Geyer lab) received a poster award in the postdoctoral category during Health Sciences Research Week. Alexey is now a postdoctoral fellow at Rockefeller University.

GRADUATE STUDENT NEWS

RECENT GRADUATES

Ryan Baxley (Geyer lab)— postdoctoral fellow with Anja Bielinsky, University of Minnesota, Twin Cities (starting August, 2013)

Jennifer Boylston (Brenner lab) — postdoctoral fellow with Elizabeth Murphy, National Heart, Lung and Blood Institute, NIH

Lynne Dieckman (Washington lab)—postdoctoral fellow with **Catherine Musselman**, University of Iowa

John Pryor (Washington lab)—Lineberger Cancer Center postdoctoral fellow with Dale Ramsden, University of North Carolina

Alexey Soshnev (Geyer lab)— postdoctoral fellow with David Allis, Rockefeller University, New York

GRADUATE STUDENT SPOTLIGHT

Xu Liu (Fuentes lab) was named the Sandra H. Barkan Outstanding Graduate Mentor for 2013 by the UI Graduate College • **Xiao Peng** (DeMali lab, 2011 PhD), won the 2012 Clarence Berg Award, given every two years to a student who demonstrates “scholarship, integrity, cooperativeness, consideration, and a willingness to help others • **Lawrence Gray** (Khademi lab, 2012 PhD), won the 2012 Subramanian Thesis Award • **Kyle Powers** (Washington lab), **Mark Miller** (Shea lab) and **Sirisha Ghanta** (Brenner lab) each received funding from the Center for Biocatalysis and Bioprocessing Institutional Training Grant • **Elizabeth Boehm** (Washington Lab) received funding from the Pharmacological Sciences training grant • **Samuel Trammell** (Brenner lab) cycled off the Genetics training grant • **Lacy Barton** (Geyer lab) was recently the first author on a paper in *Developmental Cell*, with her mentor **Pam Geyer**, and **Lori Wallrath**.

UNDERGRADUATE PROGRAMS

A record 13 Biochemistry Honors students presented research at the Ninth Annual **Gene F. Lata** Undergraduate Research Symposium.

James Bullard (Geyer lab) will attend graduate school at UI in biochemistry. **Bhavatharini Kasinathan** (Smolikove lab, Biology) will pursue an MD/PhD at the University of Washington. **Allyson Mayer** (Brenner lab) will pursue her PhD in Biological and Biomedical Sciences at Washington University in St. Louis.

Alexander Crider (Dey lab, Chemistry) will attend the University of Illinois at Chicago College of Medicine.

Atish Dey (Soll lab, Biology), **Johnathan Fagg** (Rubenstein lab), **Irtaza Khalid** (Price lab), **Ryan Marling** (Weeks lab) and **Clayton Oakley** (Davidson lab, Internal Medicine) all plan to attend medical school.



Allyson Mayer with her mentor Charles Brenner

Stephen Siemonsma (Elcock lab) will attend veterinary school.

David Simoens (Wallrath lab) will pursue a Master's of Public Health in epidemiology.

Johanna Uribe (DeMali lab) will pursue a Master's



2013 Lata Symposium Presenters.

*Front (left to right): James Bullard, Alexander Crider, Allyson Mayer, Clayton Oakley, Bhavatharini Kasinathan, Johanna Uribe
Back (left to right): Irtaza Khalid, Atish Dey, Ryan Marling, Stephen Siemonsma, Kyle Strouse, David Simoens, Johnathan Fagg*

of Science in pathology. **Kyle Strouse** (Weeks lab) is planning a second degree in microbiology.

Two new awards were given out at this year's symposium, made possible by a gift from **Alap Subramanian**. The H.G. Wittman Scholar Award was presented to **Stephen Siemonsma** (Elcock lab) and the H.G. Khorana Scholar Award was presented to **Allyson Mayer** (Brenner lab), recognizing their exceptional understanding of biochemistry and its value to society.

UNDERGRADUATE STUDENT PUBLICATIONS

Salah Moghram, a fourth year biochemistry major currently conducting research with Amnon Kohen (Chemistry), co-authored a paper in PNAS, entitled "Folate binding site of flavin-dependent thymidylate synthase," as part of his work in the Kohen lab. Other current or former undergraduates to co-author papers or presentations this year include: **Melissa Palma** (2011 BS), **Chelsea Khaw** (2012 BA), and **Ashley Angell** (2012 BS), all from the **DeMali** lab.

Grant Young, a second year biochemistry student in the Wallrath lab, received funding from the American Heart Association undergraduate student research program to study the molecular pathology of muscle laminopathies this summer. • **Alex Greiner**, former BSURF student in the Rubenstein lab and a rising senior at Luther College, was named a Goldwater Scholar. • Three biochemistry majors were inducted into the Phi Beta Kappa honors organization, including **Kyle Klingbeil**, **Stephen Siemonsma** and **Alexander Starr**. They joined graduating seniors **Alexander Crider**, **Clayton Oakley** and **Garrett Shackleton** as members from biochemistry.

STAFF NEWS

Members of the Wallrath lab celebrate Diane's award



Diane Cryderman of the Wallrath lab was awarded the inaugural Distinguished Research Support Professional award at the UI this spring. The award recognizes Diane's longtime commitment to the Department of Biochemistry as a Research Associate in the Wallrath lab.

The Departmental Office welcomed two new members this summer: **Maren Rogers** and **Judy Means**.

ALUMNI NOTES

UI FOUNDATION

Andrew Petersen, a 2007 BS with **Lori Wallrath**, successfully defended his PhD in Pharmacology at the University of Wisconsin in December, 2012. Dr. Petersen's studies focused on the mechanisms of neurodegeneration associated with Alzheimer's and Parkinson's diseases, using the fruit fly *Drosophila* as a model. His research findings were reported in the *Proceedings of the National Academy of Science* (PNAS, 109: E656-64, 2012).

Andy Robertson, a former faculty member, is the new Chief Scientific and Medical Officer at the National Psoriasis Foundation. He will run the research grants program and a medical education program, and raise awareness about research needs and opportunities in the area of psoriatic diseases. Dr. Robertson says "the attractions of this position include the mission, the opportunity to stay abreast of a lot of interesting research and medicine, and the chance to interact extensively with and, hopefully, to help those who have psoriasis or psoriatic arthritis." He is based in Portland, Oregon and Iowa City, and will be back for this summer's celebration.

David J. Klumpp, a 1985 BA with **Arthur Arnone**, received the Anthony J. Schaeffer, MD, Professorship in Urology at Northwestern University. David and Anthony co-direct the Northwestern Pelvic Pain Center within the NIH Multidisciplinary Approaches to Pelvic Pain research network. David's work focuses on a breadth of benign urologic diseases.



Biochemistry has a new representative at the University of Iowa Foundation, **Anne Barber**. A native Iowan, Anne received her BA at the University of Iowa and her MS at the University of Kansas. Prior to joining the Foundation, Anne worked at Coe College in Cedar Rapids and Pennington & Co. in Kansas City.

Private support, which has always been important for the Department, is critical today. Hundreds of donors have expressed their loyalty to Biochemistry and Iowa through gifts large and small. These gifts support graduate students and postdocs, new equipment purchases, seminar series and lectureships, and make it possible for us to attract and retain outstanding faculty members.

A tax-wise advisor, Anne also encourages conversations with friends of the Department who are thinking about creating an endowment either with an outright gift or by estate planning. The Department is enormously grateful to friends and family of **Eugene Lata**, and to friends and colleagues of **Rex Montgomery**, who have established funds for the annual undergraduate symposium and a new undergraduate research award, respectively. Anne travels extensively, and would be happy to talk with friends of the department by phone (800-648-6973) or by email (barber@uifoundation.org) about contributions to existing funds or new initiatives.

Detach here and return

ALUMNI: WHERE ARE YOU NOW?

Please share your latest comings and goings with us!

Name: _____

Current Position: _____

Email Address: _____

Street Address: _____

City, State, Zip: _____

Degree, Graduation Year: _____

Iowa Mentor: _____

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Or email us at biochem@uiowa.edu

IOWA BIOCHEMISTRY T-SHIRTS

Gold on Black:

*Black t-shirt with gold
Biochemistry screen print*

Sizes: Adult S-XL

Black on Gold:

*Gold t-shirt with black
Biochemistry screen print*

Sizes: Adult S-XL

Biochemistry Polo

Black polo shirt with gold hawk embroidered at the chest

Sizes: Men's M-XXL, Women's S-L

T-shirts are \$10 each and polos are \$18.50. Please add \$2 per order for shipping. Please indicate color, style and size. Make checks payable to The University of Iowa. Email biochem@uiowa.edu with questions.

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