University of Richmond

Department of Chemistry

Annual Report to Alumni

2008-2009

http://chemistry.richmond.edu
804-289-8242

Dear UR Chemistry Alumni and Friends,

It has been a truly amazing year in the department, making it impossible to limit all of the accomplishments of students and faculty/staff to a couple of pages, but I will do my best to hit the high-lights. This year we graduated a very strong class of 26 chemistry and 8 BMB majors. The strength of the class was apparent as the faculty struggled to select individual (rather than multiple) members of the class for departmental and university honors. It was also apparent by the DOD, DOE, and NSF graduate fellowships, acceptances to graduate programs like University of California-Berkeley, University of Pennsylvania, University of North Carolina, and Harvard, as well as the range of jobs, internships, community services, and travels set up. Not only did this graduating class have strength academically, but they bonded as a community which was particularly fun to watch and interact with.

Seniors earning chemistry department awards this year at our end-of-year ceremony included: Miles Johnson and Bobby Day (Garnett Ryland Award), Ben Giglio (ACS Award), Anne Galyean (AIC and Analytical Chemistry Award), Evan Wang and Brian Mahoney (Senior Research Achievement Award), Laura DelGiorno (Academic Award), Evan Wang (Physical Chemistry Award). This year at our ceremony, we were very fortunate to have a number of distinguished guests with us [Catherine Moser (granddaughter of Garnett Ryland), Bill and James Ryland (grandsons of Garnett Ryland), Jack Pierce (son of J. Stanton Pierce), Lynn (granddaughter of J. Stanton Pierce), and Stan and Warren Pierce (grandsons of J. Stanton Pierce), Stu Clough, Bill and Nancy Trout (son and daughter-in-law of Bill Trout), Stran Trout (son of Bill Trout), and Adele Topham (widow of Dick Topham)], which we greatly enjoyed meeting and whom we hope to see again in the near future. Seniors earning BMB program awards this year included: Lizzie Rieck (Senior Research Award), Alex Moore (Academic Award), and Lindsay Ward (Outstanding BMB major). On the University level, Evan Wang was awarded the David Evans Award. On the national level, Miles Johnson and Bryan Der (BMB ’08) won graduate fellowships from the National Science Foundation (NSF GRF) and Evan Wang won graduate fellowships from the Department of Energy and the Department of Defense (and was named an honorable mention for the NSF GRF). These are not easy fellowships to earn and speak volumes about the quality of graduating UR students!

This year’s graduating class did a great deal of research in their 4 years at UR. Anne Galyean, Matt Keough, Brian Mahoney, Bobby Day, Ben Giglio, Kristin Smith, Miles Johnson, Evan Wang, Heather Hollis, and Lizzie Rieck all published peer-reviewed manuscripts as undergraduates. In addition, many of the graduating class traveled to regional and national meetings. Some have opted to spend this last summer finishing up research in the department, joining other UR undergraduates, high school teachers, high school students, post-baccalaureates, and postdocs, about 75 in total.

The faculty and staff in the Department also had a very good year. In August, Mike Leopold was named a UR Distinguished Educator and in April he won one of two A&S Mentor Awards- both very well deserved for the work he is doing with students. Carol Parish was promoted to full professor and was also selected to hold one of two endowed Gottwald Chairs- both well earned for all that she is doing for the UR community. Both Mike and Carol also had major research grants funded this year, from NSF and DOE, respectively. Russ Collins was awarded an Outstanding Service Award for the great job he is doing as one of our laboratory managers. Jon Dattelbaum and Krista Stenger (biology) are the new BMB Program Directors, and we are all thanking Ellis Bell and April Hill (biology) for their work over the past years with the program. This year saw Bill Myers, Chris Stevenson, Wade Downey, and Lisa Gentile on leave, with Mike Leopold and Michelle Hamm on leave next year.

In June the department said goodbye to Tim Smith, our Director of Instrumentation, who took a tenure track position at Christopher Newport University. Tim did a great job with instrumentation in the department over the past 3 years, and we wish him all the best as he embarks on his new career. This spring we got very lucky in a search for a new Director of Instrumentation. Diane Kellogg, an analytical chemist from Altria, joined us in May, and has already helped us considerably in our research efforts. In addition, Kristine Nolin, an organic chemist who did her PhD at the University of California, Berkeley and her postdoc at Harvard, joined us in a tenure track position in August. We are delighted to welcome both Diane and Kristine to our Gottwald family.

A few special events for the year included Mike Summers (UMBC) as our fall HHMI keynote speaker and Timothy Swager (MIT) as our spring Powell lecturer. Looking ahead to next year, we are excited about working with another strong group of majors, bringing in the first class of students that will take the new HHMI integrated quantitative introductory science course (http://iqscience.richmond.edu/), and collaborating with the Science Museum of Virginia to host the first “Nobel Laureate-in-Residence” program, bringing Roald Hoffmann to campus for a couple of weeks to highlight his recent science and artistic endeavors.

We hope this annual report finds you well. As time permits, please stop by, give us a call, or send an email letting us know how you are doing. We would love to hear from you. For those of you that are financially supporting our program, we are very grateful. We rely on those funds to help our summer undergraduate research program, to recognize deserving students with end-of-year awards, and to support community building activities. Thank you.

Lisa Gentile, 8/09

2009 Chemistry Graduates

Odamea Akomah – Brooklyn, NY. Odamea worked with Dr. Downey for 3 semesters and 1 summer on a project, "Characterization of N-Nitrone-Diphenyl Groups". She will be entering a 2 year fellowship with U.S. PIRG (Advocacy group for public interest).

Jason Barnes – Warrenton, VA. Jason did research with Dr. Gentile during his sophomore and junior years, including one summer. He worked on a project titled, "Purification and binding studies of the AMPA GluR2 S1S2 domain". He has plans to teach after graduation.

Sarah Burd – Pittsburgh, PA. Sarah worked with Dr. Goldman for 1 academic year, and 1 summer. She worked on, "Explorations in Heterogeneous Reaction Chemistry". Her post graduation plans are to teach ESL in China with WorldTech.

Robert Day – Lexington, KY. Bobby researched with Dr. Leopold for 5 semesters and 2 summers. He had two projects, "Optical Responses of Functionalized Hollow Gold Nanoshells", and "Polyelectrolyte-Linked Film Assemblies of Nanoparticles and Nanoshells: Growth, Stability, and Optical Properties". In the fall, he will be attending Harvard to pursue a Ph.D. in Chemistry.

Laura DelGiorno – Eldersburg, MD. Laura did research with Dr. Hamm for 1 ½ years and 1 summer. The title of her project was, "Studies on the effect of C8 steric bulk in the replication of 8-oxo-2'-deoxy-guanosince by Klenow Fragment-exo". She will be working with Teach for America, teaching chemistry in inner city Baltimore for the next 2 years.

Matthew Fanelli – Danville, PA. Matt worked in Dr. Myer's research lab for 7 semesters, and 1 summer. He had two projects, "Pd-Catalyzed Cross-Coupling of Non-Aromatic Systems", and "The Synthesis and Isolation of Michael-Addition and Ring-Closed Derivatives from a Pyrrole". He is currently working in Dr. Parish's lab on a 1 year post-baccalaureate research fellowship. His future plans include attending medical school.

Claire Gahm – Greenwood Village, CO. Immediately after graduation, Lauren hopes to travel to Ecuador to work in a health clinic for a few months. She eventually plans to attend medical school.

Anne Galyean – Idaho Falls, ID. Anne has worked in Dr. Leopold's lab every semester and summer beginning with the summer of 2006. Her project was titled, "Stable, multi-layer film assemblies of aqueous nanomaterials with polymeric linking mechanisms for metal ion biosensors". Anne will be attending graduate school at UNC-Chapel Hill in the fall. She was awarded an NSF Alliance for Graduate Education & the Professoriate (AGEP) fellowship to support her graduate work.

John (Kris) Gerig – Drums, PA. Kris worked in Dr. Leopold's lab 4 academic semesters, and 2 summers. His project was titled, "Atomic Force Microscopy Analysis of Nanoparticle Platforms". He plans on taking some time off and going on a "walk-about" in New Zealand.

Nicole Gianfrancesco (12/08) – Manalapan, NJ. Nicole worked in Dr. Myers' lab on her project, "Reactions of Tungsten-bound Pyrroles and the Quest for Free Ligands" during her junior and seniors years. She will be attending veterinarian school at Saint Georges University, Grenada.

Ben Giglio – Richmond, VA. Ben did research for 5 semesters and 3 summers with Dr. Gupton. His projects were, "The application of vinylogous iminium salt derivatives and microwave accelerated Vilsmeier-Haack reactions to efficient relay syntheses of the polycitone and storniamide natural products", "The application of vinylogous iminium salt derivatives to efficient formal syntheses of the marine alkaloids lamellarin G trimehtyl ether and ningalin B". Ben will also be attending graduate school at UNC-Chapel Hill in the fall.

Chris Gulka – Medway, MA. Chris did 3 semesters and 1 summer of research with Dr. Leopold. The title of his project was, "Distance Dependence of Biological Electron Transfer: Azurin at Self-Assembled Monolayers Versus Nanoparticle Films". He will be pursuing a Ph.D. in chemistry at Vanderbilt.

Heather Hollis – Florence, AL. Heather worked on 3 projects while working in Dr. Parish's lab for 5 semesters and 1 summer. Her main project was, "Quantum Mechanical Studies of Aromatic Substituted Enediynes". She hopes to attend pharmacy school in the future.

Miles Johnson – Akron, OH. Miles did research with Dr. Dattelbaum his first summer. For the remaining 7 semesters and 2 summers he worked in Dr. Downey's lab. His most recent project was, "One-Pot Enol Silane Formation-Mukaiyama Aldol and Mukaiyama Aldol-Type Reactions Mediated by TMSOTf". He will be attending Berkeley in the fall.

Matthew Keough – Mendham, NJ. Matt worked in Dr. Gupton's lab for 1 summer and 5 semesters. The title of Matt's research project was, "The application of vinylogous iminium salt derivatives to efficient formal syntheses of the marine alkaloids lamellarin G trimethyl ether and ningalin B". He plans on working for a pharmaceutical or biotechnical company for awhile before going to graduate school.

Ncamiso Khanyile – Mbabane, Swaziland. J.B. has conducted research with Dr. Stevenson every semester since the spring of 2006, including 1 summer. His project was titled, "Integrating fiber optic sensors to Semi-Permeable Membrane Devices for Sampling Hydrophobic pollutant". He spent the summer of 2008 at Caltech conducting research with Dr. Geoffrey Blake. He is going to Georgia Tech to pursue a Ph.D. in Chemistry, concentrating on Physical Chemistry.

Jacklyn Lee – Ridgewood, NJ. Jackie worked in Dr. Parish's lab for 7 semesters and 2 summers. Her project was, "Conformational Analysis of Selected HIV-1 Protease Inhibitors". Jackie is still applying to graduate schools, and has not yet made a decision.

Brian Mahoney – Glenmoore, PA. Brian worked in Dr. Downey's lab from the second semester of his freshmen year until graduation, including 2 summers. The title of his paper was, "Trimethylsilyl Trifluoromethanesulfonate – Accelerated Addition of Catalytically Generated Zinc Acetylides to Aldehydes". He will be studying chemistry at Penn State this fall.

Daniel Muller – Stamford, CT. Daniel will be attending Emory University in the fall. He is pursuing a Masters in Public Health, with a concentration in Global Environmental Health.

Gordon Myers – Cincinnati, OH. Gordon worked on, "The Application of Chloroenoic Acids to the Synthesis of Ningalin C Precursors" in Dr. Gupton's lab. He is planning on eventually attending medical school.

Brendan Parr – Reading, MA. Brendan researched from Fall 2007 through Spring 2009 in Dr. Myer's lab. His project was titled, "Asymmetric Michael Additions and Ring-Closing Reactions with 2,5-dimethylpyrrole via Activation of the Nucleophile through η2-coordination to Tungsten (0) and Subsequent Isolation of the Free Ligands". Brendan will be attending Emory University in the fall.

Melissa Pham – Downingtown, PA. Melissa did research with Dr. Lisa Gentile for 3 academic semesters, and 2 summers. Her research project was, "Differentiating the regulation and neurosteroid binding domains of the ionotropic glutamate receptors".

Kristin Smith – Hampton, VA. Kristin worked in Dr. Gupton's lab for 5 semesters and 2 summers. Her project was, "A Combination Strategy for the Preparation of Rigidins B,C, and D and Bioactive Analogs". She is taking a year off before going to medical school.

Andrew Vincent – (12/08) Hockessin, DE.

Evan Wang – Fairfax, VA. Evan did 8 semesters and 3 summers of research with Dr. Parish. His latest project was, "Quantum Mechanical Studies of Five, Seven, and Eight Membered Enediynes". Evan was selected to receive a National Defense Science & Engineering Graduate Fellowship. He will be going to UC Berkeley in the fall to continue his studies in chemistry.

Eric Worrall – Hamilton, NJ. Eric's project while in Dr. Gupton's lab for 5 semesters was, "The [2,3]-Sigmatropic Rearrangement of Vinamidinium Salt Reduction Products and The Application of Sonogashira Cross-Coupling to the Synthesis of Ningalin C Type Alkaloids." Eric will be doing research next year in Research Triangle Park, NC at the National Institute of Environmental Health Sciences. He plans to attend medical school the following year.

2009 Biochemistry and Molecular Biology Graduates

Rachel Dillon – Lancaster, PA. Rachel worked with Dr. Hamm for 4 semesters and 1 summer on a project titled, "Insight into substrate recognition by MutY, a DNA repair glycosylase". She is staying in Richmond, completing paramedic school, and looking for a job.

Andrew Feltzin – Philadelphia, PA. Andy researched with Dr. Bell for nearly 3 years. His research focused on, "A Glycine motif found in a transmembrane protein of the HIV-1 virus". He plans on attending either BU or Drexel next year.

Margaret Gustafson – Pennington, NJ. Maggie worked on, "The replication of the damaged DNA base 8-oxo-2'-deoxyguanosince by a polymerase from a thermophilic bacteria" in Dr. Hamm's lab. She plans to attend graduate school after working for a few years.

Sophonie Jean – Stamford, CT. Sophonie worked in Dr. Bell's lab for 2 summers and a semester. Her project title was, "Defining the Role of Second Sphere Residues in the Activity of Glyoxysonal Malate Dehydrogenase". This fall she will be attending VCU in the Intergrative Life Sciences Program.

Alexander Moore – Chesapeake, VA. Alex worked with Dr. Knight from the Biology Dept. for 6 semesters and 3 summers on, "Understanding the role of RNA interference in homeotic gene regulation". He will be attending medical school at the University of Pittsburgh in the fall.

Elizabeth Rieck – Salisbury, MD. Lizzie worked with Dr. Gupton for 2 years and summers. She did an honors thesis for the BMB program titled, "The Application of Vinylogous Iminium Salt Derivatives to the Efficient Syntheses of Ningalin B, Rigidin C, and Bioactive Analogs". She plans on taking some courses at Ohio State University in preparation for entering medical or veterinarian school.

Thomas Ross – Cohasset, MA. Tom did research with Dr. Bell his junior and senior years, and 2 summers. His project was, "Defining the role of interface residues in glyoxosomal malate dehydrogenase". He plans on getting a job, and eventually attending medical or graduate school.

Lindsay Ward – Lancaster, PA. Lindsay worked with Dr. Krista Stenger from the Biology department for 3 years. Her research project was titled, "Adrenergic Receptor Expression in RAW2647 Macrophages". She will be attending graduate school at Penn State in the fall.

2008-09 Student Awards

Chemistry:

Garnett Ryland Award – A cash prize awarded to the best graduate in Chemistry.

Miles Johnson, Robert Day

ACS Award – A one year membership in ACS, and recognition at the last meeting of the Virginia section of ACS. Awarded to a graduating senior deemed outstanding. Generally given to a senior heading to graduate school.

Ben Giglio

AIC Award – A certificate and one year membership in American Institute of Chemists. Awarded to a senior who is probably headed to a career in industry.

Anne Galyean

Senior Research Achievement Award – Awarded to the senior chemistry major who has shown the most impressive research achievements.

Evan Wang, Brian Mahoney

Academic Award – Awarded to a senior who has excelled in Chemistry.

Laura DelGiorno

J. Stanton Pierce Award – A cash prize given to the junior chemistry major who will most likely reflect credit on the University and Chemistry Dept.

Morgan Vargo, Lauren Firich

Analytical Chemistry Award – Subscription to *Analytical Chemistry* and honorary membership in the Division of Analytical Chemistry for 9 months. Awarded to a chemistry major who demonstrates an interest and an aptitude for a career in analytical chemistry.

Anne Galyean, Maria Lindell

Physical Chemistry Award – Award for student showing outstanding ability in the field of Physical Chemistry.

Evan Wang

Junior Research Achievement Award – Awarded to the junior chemistry major who has shown the most impressive research achievements.

James Eaton, Greg Springsted, Diomedes Saldana-Greco

VAS Award – A small cash prize and recognition at a dinner during the annual meeting of the Virginia Academy of Science. Awarded to a returning student who is probably headed to a career as a scientist.

Kendra Cunningham

Stuart Clough Organic Chemistry Award – Award for achievement in Organic Chemistry.

Anna Parker, Andrew Massaro

Sophomore Research Achievement Award – Awarded to the sophomore who has shown the most impressive research achievements.

Samaranda Craciun, Anna Parker, Heather Robinson

William Trout Award – CRC Handbook presented to the best student in general chemistry.

Diana Iovan

Biochemistry and Molecular Biology:

BMB Sophomore Research Award – Awarded to a sophomore who demonstrates outstanding research potential.

Gabriela Timoney

BMB Junior Research Award – Awarded to a junior who demonstrates outstanding research performance and dedication.

Katie Nicholas

BMB Senior Research Award – Awarded to a senior who has demonstrated outstanding research performance and dedication.

Elizabeth Rieck

Most Outstanding BMB Major Award – Awarded to the overall best senior BMB major in research, academics, and service.

Lindsay Ward

BMB Academic Award – Awarded to the senior BMB major with the highest academic aptitude in the major.

Alex Moore

Gamma Sigma Epsilon

Gamma Sigma Epsilon is the national chemistry honor society.

Class of 2009	**Class of 2010**
Clayton Alexander	Tran Doan
Victoria Cimino	Callie Dowdy
Stephanie Corsi	Lauren Firich
Bobby Day	Hersh Gupta
Erin Fields	Chris Manieri
Anne Galyean	Adrian Pickar
Kris Gerig	Brian Sacchetta
Sarah Hilt	
Lizzie Rieck	
Caroline Trapeni	

Student Organizations

Student Affiliates of the American Chemical Society

Current Officers:

President:	Tran Doan
Vice President:	Kendra Cunningham
Secretary:	Samaranda Craciun
Treasurer:	Lauren Firich
Webmaster:	Dalsher Nagra
Faculty Mentors:	Fall 08: Emma Goldman, Spring 09: Rob Miller

Meetings and Activities (2008-2009):

Planning and Organization
Magic Show
Spring Picnic
Election of New Officers

Academic year 2008-2009 Research Students

Abrash:
John Pinski
Diomedes Saldana Greco

Donald:
Matthew Bober
Chad Crigger
Alan DeLorenzo
Matt Guarino
John Stewart
Bernard Wittmaack

Goldman:
Sarah Burd
Kristen Jobes
Heather Robinson

Gupton:
Peter Barelli
James Eaton
Kara Finzel
Lauren Firich
Ben Giglio
Mona Hovaizi
Matt Keough
Gordon Myers
Lizzie Rieck
Kristin Smith
John Stafford
Eric Worrall
Xin Jia

Bell:
Farren Blue
Dana Carr
Rachel Chikowski
Parris Doolittle
Brad Falk
Andrew Feltzin
Hugo Guterres
Shannon Hedrick
Sophonie Jean
Virzhiniya Lekova
Kelly McDaniel
Tom Ross
Carolyn Scheel
Leander Sinanan
Sandhya Talluri
Latosha Urquhart
Autumn Wrenn

Hamm:
Kelly Crowley
Laura DelGiorno
Rachel Dillon
Maggie Gustafson
Claire Ligon
Maria Lindell

Parish:
Kendra Cunningham
Sally Fisher
Reggie Gooden
Heather Hollis
Jenna Landers
Jackie Lee
John Mancini
Anna Parker
Greg Springsted
Tyler Steele
Evan Wang
Angela Xie
Hao Zhong

Dattelbaum:
Kaila Arnold
Hilbert Billones
Spencer Harris
Angela Manglitz
Chris Manieri
Katie Nicholas

Downey:
Stephanie Corsi
Smaranda Craciun
Miles Johnson
Brian Mahoney
Jimmy Rague
Megan Venable
David Widmayer

Leopold:
Bobby Day
Tran Doan
Callie Dowdy
Anne Galyean
Kris Gerig
Chris Gulka
Morgan Vargo

Stevenson:
J.B. Khanyile

Dominey:
Bryn Allen
Natalie Eisenach
Stephen Wilson

Gentile:
Chelsea Aunerheimer
Brian Borkowski
Krasi Cameron
Brandon Cieniewicz
Serena Ding
Murside Jean
Joon Kim
Melissa Pham
Sarah Rhoads
Monica Rocha
Anna Rued

Myers:
Matt Fanelli
Nicole Gianfrancisco
Dalsher Nagra
Brendan Parr

Summer 2009 Research Students

Abrash
Kaleigh Rae

Donald :
Matt Bober
Matt Guarino
John Stewart
Bernard Wittmaack

Hamm:
Kelly Crowley
Claire Ligon
Maria Lindell

Myers:
Dalsher Nagra

Gentile:
Brian Borkowski
Lizzie Barnett
Jaya Burse
Krasi Cameron
Gray Cassada
Brandon Cieniewicz
Joon Kim
Natalie Lewis
Carrie Puryear-Wilson
Sarah Rhoads
Monica Rocha
Anna Rued
Meredith Weck
Ian Winters

Gupton
Peter Barelli
James Eaton
Lauren Firich
Ben Giglio
Mona Hovaizi
Xin Jia
John Stafford

Downey:
Smaranda Craciun
Alan Fleisher
Miles Johnson
Jimmy Rague
David Widmayer

Leopold:
Bobby Day
Callie Dowdy
Tran Doan
Anne Galyean
Kris Gerig
Chris Gulka
Morgan Vargo

Goldman
Kristen Jobes

Dattelbaum:
Hilbert Billones
Lindsay Deacon
Spencer Harris
Katie Nicholas

Dominey:
Bryn Allen
Natalie Eisenach
Stephen Wilson

Parish:
Sarah Booth
Justin Cook
Erin Dahkle
Sally Fisher
Matt Fanelli
Reggie Gooden
Jenna Landers
Jackie Lee
John Mancini
Anna Parker
Diomedes Saldana Greco
Greg Springsted
Tyler Steele
Angela Xie
Hao Zhong

Bell:
Sam Asante
Farren Billue
Dana Carr
Tria Coles, 10th grade, Richmond Comm. H.S.
Barbara Gray, Science Teacher, Richmond Comm. H.S. (Supported by a Research Experience for Teachers Award from NSF)
Rachel Gruner, Science Teacher, Robious M.S.(Supported by grant from Amer. Soc. for Biochemistry & Molecular Biology K12 Teachers program)
Hugo Guterres
Shannon Hedrick
Chelsea Hopson, 10th grade, Richmond Comm. H.S.
Rachel Jones, 7th grade, Robious M.S. (Supported by grant from Amer. Soc. for Biochemistry & Molecular Biology K12 Teachers program)
Virzhiniya Lekova
Kaitlin Markoja
Leander Sinanan
Latosha Urquhart, Virginia State University
Joseph Waters, Virginia State University
Autumn Wrenn, Virginia State University

Course Enrollments 2008-2009

Fall	Spring	Course
27	30	110-Pollutants in the Environment
27		112- Biochemistry in the Real World
99	52	141- Introductory Chemistry
31	76	205- Organic Chemistry I
75	32	206- Organic Chemistry II
25		300 – Measurement Statistics
25		301- Chemical Analysis
	4	302 – Spectroscopy & Instrumentation
	12	303 – Separations
30		309- Physical Chemistry I
	15	310- Physical Chemistry II
4		316- Environmental Chemistry
	64	317- Inorganic Chemistry
11	12	322- Junior Seminar
19	20	326- Biochemistry
12	13	327-Biochemistry with Lab
7	3	329- Proteins
12		341- Advanced Organic Chemistry
31	30	421-422- Senior Seminar

Faculty/Staff Activities

Wade Downey
This year I helped induct almost twenty new students into Gamma Sigma Epsilon, the chemistry honor society. We published a paper in the Journal of Organic Chemistry and bid adieu to several seniors who have contributed mightily to our research program, including Odamea Akomah, Stephanie Corsi, Miles Johnson, and Brian Mahoney. This spring I experienced my first research leave, and had a good time puttering about in the lab. In the fall, I taught the Advanced Organic course with Dr. Gupton's help for the first time, and it was a lot more work. We had a good time and the students really contributed a lot to the course. I'm looking forward to resuming my teaching duties this fall, when we will welcome a new organic colleague, Dr. Kristin Nolin. Wade and Eileen were happy to welcome their son Finn Patrick to the world on July 20.

Michelle Hamm
Paul and I welcomed our second child, Megan, on August 3rd. She joins her big brother Ryan who turned two in April. We are very lucky that my Mom has recently moved to Richmond and will be taking care of both kids so Paul and I can continue working at jobs we both love. Since I will be on parental leave in the fall and sabbatical in the spring, I will not be teaching this year; I am happy to be able to get into the lab and (hopefully) finish up a few projects as well as write a few papers.

Robert Miller
I presented a poster titled 'Radial Chromatography in the Undergraduate Organic Chemistry Laboratories' at the 2008 Southeast Regional Meeting of the American Chemical Society in Nashville, TN. I received many contacts and compliments regarding the poster and my future ideas. I have published the 3rd Ed of my organic chemistry laboratory manuals. This summer I began exploring my research interests in synthetic organic methodologies. I am excited about some of the data I collected thus far. I am the faculty advisor to the American Chemical Society Student Affiliates Club and enjoying every minute of it. When I get free time I enjoy mountain biking, climbing, hiking and camping in the Appalachian Mountains. I frequently make trips to Grand Rapids, MI to see my parents and to Naples, FL to visit my sister.

Bill Myers
Bill Myers spent the first half of this past year as chair of the department and the second half on sabbatical. He says the second half was more enjoyable. This was his wife, Barbara's first year in retirement, and she enjoyed spending more time with their grandson who was in kindergarten this year. Bill continues to collaborate with the Harman group at UVa, publishing 4 papers this year from this work. Bill took two students to UVa last summer and another this summer, and all three are co-authors on a paper being prepared for submission. A December trip to Chattanooga to watch the Spiders win their national championship in football was a highlight of the year. A return to a regular teaching schedule awaits this fall, and Bill expects to be ready.

Faculty Awards:

University of Richmond Distinguished Educator Award (2008): Mike Leopold

University of Richmond Arts & Sciences Outstanding Mentor Award (2009): Mike Leopold

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Student Awards:

Denoon Scholarship: Justin Walter (BIOL), Lauren Folgosa (BMB), Morgan Vargo (CHEM)

Cole Scholarship: Serena Ding (BIOL), Kelly Crowley (BMB), Lauren Firich (CHEM)

2009 Departmental Summer Fellowships: Matthew Bober, Claire Ligon, Kaleigh Rae, Leander Sinanan, Greg Springsted

A&S Summer Fellowships: Callie Dowdy

The May L. Keller Scholarship, Westhampton College: Morgan Vargo

Jane N. Brown Scholarship, Health Professions Advisory Committee: Morgan Vargo

Class of 1964 Scholarship: Morgan Vargo

Beckman Scholar: Benjamin Giglio

GlaxoSmithKline Summer Research Fellowship: Lauren Firich

Seminars (2008-2009)

"*Real-time Simulations of Protein-Protein and Peptide-Protein Interactions*", Dr. Michael Peters, Virginia Commonwealth University

"*New insights into the mechanisms that retroviruses use to assemble and package their genomes*", (HHMI Symposium), Dr. Mike Summers, University of Maryland

"*The Discovery and Commercialization of Indoxacarb*", Charlie Harrison, INVISTA

"*Surprises in Ionic Reactions and Their Uses in Top-down and Bottom-Up Fabrication*", Dr. Stoyan Smoukov, North Carolina State

"*The Magic of Dirhodium*", Dr. Mike Doyle, University of Maryland

"*New Synthetic Approaches to Biologically Active Nitrogen Heterocyles*", Dr. Erin Pelkey, Hobart & William Smith Colleges

"*Evaluating density-dependent binding of proteins on a carbohydrate microarray*", Dr. Oyindasola Oyelaran, National Cancer Institute

"*Multi-Scale Modeling of DNA and Chromatin*", Dr. Garegin Papoian, University of North Carolina

"*The chemical synthesis of glycoproteins: studies toward homogeneous erythropoietin*", Dr. Cindy Kan, Memorial Sloan Kettering Cancer Center

"*Relating Molecular Structure to Biological Function*", Dr. Bob Volkmann, Pfizer

"Investigating New Modes of Catalysis Using Transition-Metal Complexes and Small-Molecule Hydrogen-Bond Donors", Dr. Kristine Nolin, Harvard University

"The Broad Applicability of Organic Synthesis: From Biology-Inspired Materials to Functionalized Potassium Organotrifluoroborates", Dr. Wilma Febo-Ayala, University of Pennsylvania

"*Hybrid Quantum/Classical Approaches to Unraveling Cytochrome P450 Catalysis*", Dr. John Hackett, Virginia Commonwealth University

"Functional Membrane Active Receptors", Dr. Vladimir Sidorov, Virginia Commonwealth University

"Polymer Electronics for Chemical & Biological Sensors" (**Powell Lecture**), Dr. Timothy Swager, MIT

"*Crowded Bonds are Weaker: A New View of Bond Dissociation Energies*", Dr. Scott Gronert, Virginia Commonwealth University

"*From Antibiotics to Fuels: The Peculiar Metabolism of Streptomyeces Bacterias*", Dr. Jason Sello, Brown University

"*Investigations in Natural Products: Synthesis and Isolation*", Dr. Kevin Minbiole, James Madison University

"*Insights into the Bioactivity of the Promutagenic DNA lesion, 8-Oxo-2'-deoxyguanosine*", Michelle Hamm, UR

"*Beyond Linus Pauling: Conformation dependence of ideal geometry in protein*", Donald Berkholz, Oregon State University

Current Funding
2008-2009

NSF-RUI, "The Role of Protein Dynamics in Catalysis and Subunit Cooperativity" (Bell)

NSF-RUI, "Stability and structure of temperate tropical marine sponge symbiont communities in response to climate change," 3/1/07 to 3/1/10, (co-PI) Dattelbaum

NSF-MRI, "Acquisition of instrumentation for creation of a regional undergraduate biophysical chemistry research cluster" 2008-2010, (co-PI) Dattelbaum

Research Corporation Cottrell College Science Award. "A Tandem Enol Silane Formation-Mukaiyama Aldol Reaction: Controlling Cationic Silicon" (Downey)

American Chemical Society Petroleum Research Fund, "Synthesis of Chiral Carboxylic Acid Derivatives via Three-Component Coupling Reactions with Ynoate Electrophiles" (Downey)

Merck-AAAS Summer Undergraduate Science Research Program, 2007-2010, $60,000. (Gentile, Co-PI, Program director)

NSF MRI, October 2007-2010, $309,737. "MRI: Acquisition of Instrumentation for Creation of a Regional Undergraduate Biophysical Chemistry Research Cluster" (Gentile, PI)

Howard Hughes Medical Institute, Undergraduate Science Education Award, 2008-2012, $1.4 million. (Gentile, Co-PI, Associate Director)

NSF CAREER. June 2005-2010, $650,926. "Macromolecular recognition and differential ion channel functioning." (Gentile)

National Institutes of Health/NCI (AREA Program), $202, 555; 2/1/08-1/31/11; "The Synthesis and Biological Evaluation of Pyrrole Containing Marine Natural Products" (Gupton)

Henry Dreyfus Teacher-Scholar Award, "Studies into the base pairing, repair and replication of the prominent promutagen 8-oxo-2'-deoxyguanosine using modified nucleotides" (Hamm)

National Science Foundation, Research in Undergraduate Institutions (RUI), **"**Nanoparticle Film Assemblies: Interfacesfor Controlling the Nanoscale Adsorption Environment and Electrochemical Behavior of Immobilized Redox Proteins", $85,000 over three years or $255K (05/09 – 05/12). (Leopold)

Faculty Research Grant, College of Arts & Sciences, Faculty Research Committee, University of Richmond, *Electrochemical Properties of Azurin as a Function of Nanoparticle Film Thickness*, $3025 (5/19/2009–11/30/2010) (Leopold)

Department of Energy, "A Theoretical Investigation of the Structure and Reactivity of the Molecular Constituents of Oil Sand and Oil Shale", 2009-2012, (Parish)

National Science Foundation Research at Undergraduate Institutions Program, "A Theoretical Investigation of Multireference Diradical Systems", 2008-2011, (Parish)

National Science Foundation, Research Opportunity Award – Supplement to Research at Undergraduate Institutions award, "A Theoretical Investigation of Multireference Diradical Systems", 2008-2009 (Parish, co-PI with Erin Dahkle, Loras College)

The Camille and Henry Dreyfus Foundation, Henry Dreyfus Teacher-Scholar award, 2005-2010 (Parish)

American Chemical Society Petroleum Research Fund Type B Program, 2003-2009 (Parish)

National Science Foundation Major Research Instrumentation Program, "Acquisition of a High Performance Computer for the Molecular Education and Research Consortium in Undergraduate Computational ChemistRY (MERCURY)", 2009-2012, $229,000 (Parish, jointly with faculty at Connecticut, Hamilton, Mount Holyoke, Truman State, Westminster, Rhode Island, Wheaton, Rhodes, University of Central Arkansas and Queensborough Community College).

Publications

*(*undergraduate author)*

Paul O. Momoh, Enli Xie, **Samuel A. Abrash**, Michael Meot-Ner (Mautner), and M. Samy El-Shall, "Gas Phase Reactions between Acetylene Radical Cation and Water. Energies, Structures and Formation Mechanism of $C_2H_3O^+$ and $C_2H_4O^{+\bullet}$ Ions", J. Phys. Chem. A. **2008,** *112*, 6066-6073.

"The Biochemistry and Molecular Biology Major and Liberal Education", Trevor R. Anderson, University of KwaZulu-Natal (South Africa); **J. Ellis Bell**, University of Richmond; Judith S. Bond, Penn State College of Medicine; Rodney Boyer, Hope College; Robert A. Copeland, EpiZyme, Inc.; Barbara Gordon, ASBMB; Nicole Kresge, ASBMB; Peter A. Rubinstein, University of Iowa Carter College of Medicine; and Adele J. Wolfson (chair), Wellesley College.

J. Ellis Bell: Liberal Education, 2009, Vol 95.2 pages 6-13.
ASBMB Today, June 2009, "Education at the Annual Meeting", p22-23.
January 2009, "Vision and Change in Biology Undergraduate Education", p22-23.
February 2009, "Edward J Wood: Supporter of Biochemistry and Molecular Biology Education" p23.
March 2009, "What's Going on in New Orleans", p23-24.
April 2009, "Thoughts about Education and Professional Development: Part I", p25.
Dec 2008, "ASBMB Targets Secondary Education", p23.
November 2008, "Student Centered Education in the Molecular Life Sciences", p24.
August 2008, "The Changing Face of Education in the Molecular Life Sciences", p24.

Case, W., W**.** Myers, W. & Goldman. E. Chemistry 141 Laboratory Manual. **2008**, Academx Publishing.

Dattelbaum, J.D. (2009) "Genetically engineered proteins as recognition receptors" in *Recognition receptors in biosensors*. M. Zourob (editor), Springer Press, New York, NY.

Olga A. Pinchuk†, Steven R.Aubuchon‡, Carolyn Marks§, **Raymond Dominey**§, Furkan Dundar, Omer F.Deniz, Ali Ata, Kenneth J. Wynne*,†,; "Thermally Pretreated 46% Pt/Vulcan XC72: Characterization by TGA/DSC/TEM and Cyclic Voltammetry", *Fuel Cells*, **2009**, 9, 0000.

Group 12 Dihalides: Structural Predilections from Gases to Solids. **K.J. Donald**, M. Hargittai, R. Hoffmann *Chemistry – A European Journal*: 2009, 15(1), 158-177.

Influence of Endohedral Confinement on the Electronic Interaction between He atoms: AHe2@C20H20 Case Study. E. Cerpa, A. Krapp, R. Flores-Moreno, **K. J. Donald**, G. Merino *Chemistry – A European Journal*: 2009, 15(8), 1985 – 1990.

Radical Bonding: Structure and Stability of Bis(Phenalenyl) Complexes of Divalent Metalsfrom across the Periodic Table. S. Craciun*, **K. J. Donald** *Inorganic Chemistry,* 2009, 48(13), 5810-5819.

C. Wade Downey, Brian D. Mahoney*, Vincent R. Lipari*, "Trimethylsilyl Trifluoromethanesulfonate-Accelerated Addition of Catalytically Generated Zinc Acetylides to Aldehydes", *Journal of Organic Chemistry* **2009**, *74*, 2904-2906.

R. Raabe* and **Gentile, L.N**. "Thermal and chemical denaturation of *Bacillus circulans* xylanase: a biophysical chemistry laboratory module." *Biochemistry and Molecular Biology Education*, 2008, 36, 6, 428.

R. Raabe* and **Gentile, L.N**. "Antidepressant interactions with the NMDA NR1-1b subunit", *Journal of Biophysics*, Article ID 474205, 8 pages, **2008**. doi:10.1155/2008/474205.

Hoke, K, and **Gentile, L.N.** "Early involvement in undergraduate research at the University of Richmond", *CUR Quarterly*, **2008**, 29, 1, 18.

J. Gupton, B. Giglio*, J. Eaton*, E. Rieck*, K. Smith*, M. Keough*, P. Barelli*, L. Firich*, J. Hempel*,T. Smith and R. Kanters, "The Application of Vinylogous Iminium Salt Derivatives to Efficient Formal Syntheses of the Marine Alkaloids Lamellarin G trimethylether and Ningalin B", *Tetrahedron,*65, 4283-4292 (2009).

J. Gupton, "Undergraduate Research in Organic Synthesis: From Vinylogous Iminium Salts to Marine Natural Products" (CUR Fellows Award Address), Council on Undergraduate Research Quarterly, 29 (#1), 71-75 (2008).

A.A. Galyean*, R.W. Day*, J. Malinowski*, K.W. Kittredge, and **M.C. Leopold**, "Polyelectrolyte-Linked Film Assemblies of Nano*particles* and Nano*shells* : Growth, Stability, and Optical Properties", *J. of Colloid and Interface Science,* **2009**, *331*, 532-542.

G.W. Kosturko, D.P. Harrison, M. Sabat, **W.H. Myers**, W.D. Harman, "Selectfluor™ Mediated Dialkoxylation of Tungsten η2-pyridinium Complexes", *Organometallics*, **2009**, *28*, 387-389.

D.P. Harrison, K.D. Welch, A.C. Nichols-Nielander*, M. Sabat, **W.H. Myers**, W.D. Harman, "An Efficient Synthesis of an η2-Pyridine Complex and a Preliminary Investigation of the Bound Heterocycle's Reactivity", *Journal of the American Chemical Society*, **2008**, *130*, 16844–16845.

E. Lis, R. Salomon, M. Sabat, **W.H. Myers**, W.D. Harman, "Synthesis of 1-Oxadecalins from Anisole Promoted by Tungsten", *Journal of the American Chemical Society*, **2008**, *130*, 12472-12476.

G.W. Kosturko, P.M. Graham, **W.H. Myers**, T.M. Smith, M. Sabat, and W.D. Harman, "Tungsten-Promoted Diels-Alder Cycloaddition of Pyridines: Dearomatization of 2,6-Dimethoxypyridine Generates a Potent 2-Azadiene Synthon", *Organometallics*, **2008**, *27*, 4513-4522.

Sarah Remmert*, Heather Hollis*, and **Carol Parish**, "Conformational Analysis of Trimeric Maleimide Substituted 1,5,9-triazacyclododecane HIV Fusion Scaffolds", *Bioorganic and Medicinal Chemistry,* **2009** *17,* 1251-1258.

Sarah Remmert* and **Carol Parish**, "Energetic Analysis of Chair and Boat Conformations of Maleimide Substituted Cyclohexane Derivatives", *Journal of Computational Chemistry,* **2009** *30,* 992-998.

Evan Wang*, **Carol Parish** and Hans Lischka, "An Extended Multireference Study of the Electronic States of para-benzyne", *Journal of Chemical Physics,* **2008** *129*, 44306:1-44306:8.

Matthew M. Lauer*, James W. Leslie*, Ashley Mynar*, Shelly A. Stamper*, Anthony D. Martinez*, Adrian J. Bray*, Senai Negassi*, Kevin McDonald*, Eric Ferraris*, Aaron Muzny*, Shawn McAvoy*, Keith Walters, Keith C. Russell, Evan Wang*, Betsy Nuez* and **Carol Parish**, "Synthesis, Spectroscopy and Theoretical Calculations for a Series of Push-Pull [14]-pyridoannulenes", *Journal of Organic Chemistry,* **2008**, *73*, 474-484.

External Presentations

(**UR undergraduate researcher)*

2008 MERCURY Conference in Computational Chemistry, July 2008, Clinton, NY

"Structure and Bonding in Bisphenalenyl complexes of divalentmetals from across the periodic table", Smaranda Craciun* and **Kelling Donald**.

"Analysis of Competing Bonding Parameters in Heavy Atom Analogues of Carbon Compounds (the Case of Sn and Pb)", Bernard Wittmaack*, Chad Crigger*and **Kelling Donald**.

"Strained Rings and Sandwiches: Theoretical Analysis of Sandwich Substituted Benzene complexes", Matthew Bober*.

"Configuring Glide Docking Algorithms using HIV-1 Protease Inhibitors", Jeanice Brown* and **Carol Parish**.

"Glide/Ligand Docking of Inverse Designed HIV-1 Protease Inhibitors", Kendra Cunningham* and **Carol Parish**.

"Experimental and Computational Modeling of Kinesin Light Chain Tetratricopeptide Repeats", Sally Fisher*, **Joe Gindhart** and **Carol Parish**.

"Quantum Mechanical Studies of Aromatic Substituted Enediynes", Heather Hollis* and **Carol Parish**.

"A Molecular Dynamics Study of the Structure of a Tetratricopeptide Repeat Protein", Jenna Landers*, **Joe Gindhart** and **Carol Parish**.

"Energetic Analysis of Base-Pair Stability and DNA containing 7,8-dihydro-8-oxogaunine", Tyler Steele*, Anna Parker*, **Michelle Hamm** and **Carol Parish**.

"Conformational Analysis of Selected Substrate Envelope HIV-1 Protease Inhibitors", Yajing Xie*, Heather Hollis*, Kendra Cunningham* and **Carol Parish**.

Southeastern Regional Meeting of the American Chemical Society, November 12-15, 2008, Nashville, TN

"Protein Monolayer Electrochemistry of Copper Blue Protein Azurin at Self-Assembled Monolayers - A System for Comparison to Protein Adsorption at Nanoparticle Film Assemblies", M.L. Vargo*, C.P. Gulka*, J.K. Gerig*, C.M. Manieri*, **Jonathan D. Dattelbaum**, and **Michael C. Leopold**.

"In Situ Silylation as an Accelerant in Reactions of Enolate and Acetylide Nucleophiles", **C. Wade Downey**, Miles W. Johnson*, Brian D. Mahoney*, Kathryn J. Tracy*, Vincent R. Lipari*.

"In Situ Enol Silane Formation-Mukaiyama Addition to Dimethyl Acetals", Miles W. Johnson*, Kathryn J. Tracy*, **C. Wade Downey.**

"ZnBr2-Catalyzed Addition of Alkynes to Aldehydes with TMSOTf as an Accelerant", Brian D. Mahoney*, Vincent R. Lipari*, **C. Wade Downey.**

"Differentiating the regulation and neurosteroid binding domains of the ionotropic glutamate receptors." M. Pham*, J. Kim*, R. Raabe*. M. Kahlson*, and **L. Gentile.**

"Vinylogous Iminium Salt Based Approaches to the Synthesis of Rigidin C and Related Bioactive Analogs", Lizzie Rieck*, **John Gupton**, Kristin L. Smith*, Peter J. Barelli*, Mona Hovaizi*, and Anastasia Kharlamova*.

"Vinylogous Iminium Salt Based Approaches to the Synthesis of Lamellarin Alkaloids and Related Bioactive Analogs", Ben Giglio*, **John Gupton**, James E. Eaton*, Jonathan E. Hempel*, and Matthew J. Keough*.

"Polyelectrolyte-Linked Assemblies of Nanoparticles: Growth, Stability, and Optical Properties", A. Galyean*, R. Day*, C. Dowdy*, and **M.C. Leopold**.

"Distance Dependence of Biological Electron Transfer: Azurin at Self-Assembled Monolayers Versus Nanoparticle Platforms". C. Gulka*, J. Gerig*, M. Vargo*, N. Lawrence*, C. Marks, M. Trawick, and **M.C. Leopold**.

"Protein Monolayer Electrochemistry of Copper Blue Protein Azurin at Self-Assembled Monolayers, - A System for Comparison to Protein Adsorption at Nanoparticle Film Assemblies", M. Vargo*, C. Gulka*, J. Gerig*, C.M. Manieri*, **J. Dattelbaum** and **M.C. Leopold**.

"Optical Responses of Functionalized Hollow Gold Nanoshells", R. Day* and **M.C. Leopold**.

Poster presentation: *Radial Chromatography in Undergraduate Organic Chemistry Teaching Laboratories,* **Robert Miller**.

"The Synthesis and Isolation of Michael-Addition and Ring-Closed Derivatives from a Pyrrole", (Paper #ORGN-573, **W.H. Myers**, M. Fanelli*, B. Parr*, N. Gianfrancesco*, E. Hejazi*, W.D. Harman, and K.D. Welch.

"Conformational Analysis of Selected Substrate Envelope HIV-1 Protease Inhibitors," Yajing Xie*****, Heather Hollis*, Kendra Cunningham*, and **Carol Parish**.

"Molecular Dynamics Study of the Structure of a Tetratricopeptide Repeat Protein," Jenna Landers*****, **Joe Gindhart** and **Carol Parish.**

"Stochastic Dynamics Analysis of Polyoligomeric Silsesquioxane (POSS) as a Potential Inhibitor of the HIV-1 Protease," Greg Springsted* and **Carol Parish.**

"Using Quantum Mechanics to Compare Base Pair Stabilities of 8-Oxo-2'-Deoxyguanosine and Similar Damaged DNA Nucleotides," Anna Parker*, **Michelle Hamm,** and **Carol Parish**.

"Quantum Mechanical Studies of Aromatic Substituted Enediynes," Heather Hollis* and **Carol Parish**.

"Experimental and Computational Determination of the 3D Structure of Kinesin Light Chain Tetratricopeptide Repeats," Sally Fisher***,** Joe Gindhart and **Carol Parish**.

American Chemical Society National Meeting, March 2009, Salt Lake City, UT

"Sustaining Research at a Predominantly Undergraduate Institution: Faculty, Departmental, and Institutional Strategies for Success", ACS National Meeting, March 2009, **Gentile, Lisa N.**

National Meeting of the American Society for Biochemistry & Molecular Biology, April 2009, New Orleans, LA

"The Effects of Serine on Local Motions in 3-Phosphoglycerate Dehydrogenase", Bradley Falk*, Jimmy Marion, and **Ellis Bell**.

"Effects of Nucleotides on Changes in Flexibility & Allosteric Interactions in Glutamate Dehydrogenase", Carolyn Scheel* and **Ellis Bell**.

"The Regulation of Malate Dehydrogenase by Citrate", Jimmy Marion and **Ellis Bell**.

"The Mechanism of Zinc Inhibition of Glutamate Dehydrogenase Involves Disruption of Subunit Interctions", Leander Sinanan* and **Ellis Bell**.

"The Effect of Glutamine Insertions on the Structure and Function of gMDH", Rachel Chikowski*, Jessica K. Bell, and **Ellis Bell**.

"Using Research in a First Year Biology Class to Promote Critical Thinking", **Ellis Bell**.

"Effective Testing of Knowledge and Critical Thinking Skills", **Ellis Bell**.

National Protein Society Annual Meeting, July 2009, Boston, MA

"The Role of Methionine Residues in Activity and Subunit Communicatin in Malate Dehydrogenase", Farren Billue* and **Ellis Bell**.

"Binding analysis and characterization of the NMDA NR2D ionotropic glutamate receptor", B. Borkowski*, M. Rocha*, S. Rhoads*, and **L. Gentile.**

"Neurosteroid binding domains of the NMDA receptor NR2B subunit", K. Cameron*, J. Kim*, G. Cassada*, and **L. Gentile.**

American Chemical Society National Meeting, August 2009, Washington D.C.

"Conformational Analysis of Selected Substrate Envelope HIV-1 Protease Inhibitors," Yajing Xie* and **Carol Parish**.

"Energetic Analysis of base-pair stability and DNA containing 7,8-dihydro-8-oxogaunine," Tyler Steele* and **Carol Parish**.

"Molecular Dynamical Analysis of POSS as an HIV-1 Protease Inhibitor," Greg Springsted* and **Carol Parish**.

"Computational and Theoretical Chemistry for Design of Fluorescent Receptors," John Mancini* and **Carol Parish**.

"Density Functional and Correlated Approaches to the Electronic Structure of Diradicals," Diomedes Saldana-Greco* and **Carol Parish**.

"Pyrolysis of Asphaltenes," Justin Cook* and **Carol Parish**.

"Conformational Study of Adenine-based Fluorescent Receptors," Hao Zhong* and **Carol Parish**.

"Using quantum mechanics to compare base pair stabilities of 8-oxo-2'-deoxyguanosine and similar damaged DNA nucleotides," Anna Parker* and **Carol Parish**.

Other Meetings or Invited Talks:

"Marine Heterotrophic Bacteria Associated with Larvae from the Chesapeake Bay Sponges *Halichondria bowerbanki* and *Clathria prolifera*", O. Harriott, B. West*, M. Dancho*, B. Jones*, J. White*, G. Heussler*, G. Thomson*, **April Hill**, **Jon Dattelbaum**, and **Malcolm Hill**, American Society of Microbiology, Philadelphia, PA, May 18-21, 2009.

"Response of carotenoid profiles to environmental stressors in temperate sponges from the Chesapeake Bay", C. Manieri*, G.

Thomson*, B. West*, **Malcolm Hill**, and **Jonathan Dattelbaum**. American Society of Microbiology, Philadelphia, PA, May 18-21, 2009.

"Preferences across Phases: Structural Preferences in Metal Dihalide Monomer, Dimers, and Solids", **K.J. Donald**, Dept. of Chemistry, Old Dominion University, Norfolk, VA, October 24, 2008.

"Utility of Polarized-Ion Models and Quantum Chemical Methods in Rationalizing Structural Preferences in Molecules and Solids: Groups 2 and 12 Metal Halides. (Or, More Opportunities for QTAIM Application in Structural Chemistry)", **K.J. Donald**, Richard Bader Symposium, Canadian Society of Chemistry, Department of Chemistry, McMaster University, Hamilton, May 30 – June 5, 2009.

"Carbonyl Attack by Enolate and Acetylide Nucleophiles in the Presence of Trimethylsilyl Trifluoromethanesulfonate" **C. Wade Downey**, College of William & Mary, March 27, 2009.

"Regulation of Ionotropic Glutamate Receptors", **Lisa N**. **Gentile,** VCU Department of Biochemistry Seminar, November 17, 2008.

"The Power of Teaching." **Lisa N. Gentile,** The Science Museum of Virginia, J. Sargeant Reynold's 5th Annual Education Conference. February 2009, keynote address.

"HHMI: Integrated quantitative sciences", **Lisa N**. **Gentile, A. Hill,** and **K. Hoke**, UR's Board of Trustees March 2009 meeting.

"Is an academic position at a primarily undergraduate institution the right choice for me"?, **Lisa N. Gentile**, University of Wisconsin-Madison, May 1, 2009,

"The design of a first year quantitative integrated science/math course", **Lisa N. Gentile**, University of Wisconsin- Madison, May 1, 2009.

"Securing our Energy Future – Next Generation Photovoltaics and Solar Fuels", **Raymond N. Dominey**, **Emma W. Goldman**, Ryan Sutherland, Carrie Forstmann*, Lindsay Drennan*, Sarah Burd*, "Rational Development of Electrocatalysts and Photocatalysts for Reduction of CO_2", First Annual Research Symposium, UNC-Chapel Hill, NC, January 2009.

"Heterogeneous Reactions", Kristen Jobes*, Heather Robinson*, **Raymond Dominey**, and **Emma Goldman,** Virginia Academy of Sciences Annual Meeting; May 2009.

"Vinylogous Iminium Salt Based Approaches to Lamellarin and Ningalin Type Akaloids", **John Gupton**, Gordon Research Conference on Heterocyclic Compounds, June 16, 2008, Newport, RI.

"Undergraduate Research in Organic Synthesis: From Vinylogous Iminium Salts to Marine Natural Products", **John Gupton**, Council on Undergraduate Research National Conference, 2008 CUR Fellows Award Address, June 21, 2008, College of St. Benedict, St. Josephs, MN.

"Vinylogous Iminium Salts as Building Blocks in Organic Synthesis", **John Gupton**, Dept. of Chemistry, Ohio State University, invited speaker, Oct. 9, 2008, Columbus, OH.

"Vinylogous Iminium Salts as Building Blocks in Organic Synthesis", **John Gupton**, Dept. of Chemistry Penn. State University, invited speaker, Oct. 31, 2008, University Park, PA.

"Undergraduate Research in Organic Synthesis: From Vinylogous Iminium Salts to Marine Natural Products", **John Gupton**, Virginia Section American Chemical Society Meeting, Jan. 5, 2009, invited speaker, Chester, VA.

"From Vinylogous Iminium Salts to Marine Natural Products", **John, Gupton**, Big South Undergraduate Research Symposium (hosted at UNC-Asheville), invited plenary speaker, March 28, 2009, Asheville, NC.

"Insights into the Bioactivity of 8-Oxo-2'-deoxyguanosine", **Michelle Hamm**, Wake Forest University Chemistry Department. September 24, 2008.

"Nanotechnology Research in the Undergraduate Laboratory: Nanoparticle Film Assemblies as Platforms for Protein Adsorption and Functional Components of Biosensor Strategies", **M.C. Leopold**, Longwood University, Keynote Speaker, Chemistry & Physics Award Ceremony, April 16, 2009.

"Stochastic Dynamics Analysis of Polyoligomeric Silsesquioxane (POSS) as a Potential Inhibitor of the HIV-1 Protease," 2008 PIRE Symposium, University of Vienna, Austria, Greg Springsted* and **Carol Parish**, (talk).

"Quantum Mechanical Studies of Five, Seven, and Eight-membered Enediynes," 2008 PIRE Symposium, University of Vienna, Austria, Evan Wang* and **Carol Parish**, (talk).

"Conformational Analysis of a Model for the Trans-Fused FGH Ether Rings in Brevetoxin A", 2008 Beckman Scholars Conference, Irvine, CA, Evan Wang* and **Carol Parish**.

"Stochastic Dynamics Analysis of Polyoligomeric Silsesquioxane (POSS) as a Potential Inhibitor of the HIV-1 Protease," 2008 Virginia Tech – University of Richmond Theory Summit, Virginia Tech, Blacksburg, VA, Greg Springsted* and **Carol Parish**, (talk).

"Quantum Mechanical Studies of Five, Seven, and Eight-membered Enediynes," 2008 Virginia Tech – University of Richmond Theory Summit, Virginia Tech, Blacksburg, VA, Evan Wang* and **Carol Parish**, (talk).

"Conformational Analysis of a *Trans*-fused Model for the FGH Ether Rings in Brevetoxin A," 2008 Schrodinger User Group meeting, Portland, OR, Evan Wang* and **Carol Parish**.

"Stochastic Dynamics Analysis of Polyoligomeric Silsesquioxane (POSS) as a Potential Inhibitor of the HIV-1 Protease," 2008 Schrodinger User Group meeting, Portland, OR, Greg Springsted* and **Carol Parish**.

"Energetic analysis of base-pair stability and DNA containing 7,8-dihydro-8-oxoguanine," 2008 Schrodinger User Group meeting, Portland, OR, Tyler Steele***, Michelle Hamm** and **Carol Parish**.

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Summer 2009 research students and faculty.

Chemistry Alumni Questionnaire

We are continuing to set up a chemistry alumni database and would appreciate it if you would complete this questionnaire and return to: Chemistry Dept., Gottwald Center for the Sciences, University of Richmond, VA 23173. If you prefer, you can go to: http://chemistry.richmond.edu/contact/alumni.html and submit the form online.

Name: _____

Year of Graduation: _____

Address: _____

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Phone: _____

Email address: _____

Family Information:

Career Information:

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Dick Topham

This September marks the 10th anniversary of the loss of our friend and colleague, Dick Topham. He served UR from 1971, until his death in 1999. In his 28 years at UR, he undoubtedly had a positive effect on hundreds of science students. If you wish, please include any recollections/memories that you might have of Dick.