Welcome back for what is sure to be an exciting 2014-2015 academic year! Over the summer, the Fisher College had plenty to celebrate. Here are a few examples:

Dr. Wei Yu in Computer and Information Sciences received a very prestigious National Science Foundation CAREER award for five years and $436,453. This NSF program evolved from the former NSF Presidential Young Investigator awards. To obtain a CAREER award, one must have a strong research program and an innovative, holistic plan to integrate research, teaching and service. CAREER grants are mostly awarded to high-research universities, and Towson is the only comprehensive institution in the state to have a CAREER awardee. In fact, we now have four – Vera Smolyaninova and Jennifer Scott in Physics, Astronomy & Geosciences; Matthew Hemm in Biological Sciences; and now, Wei Yu. Congratulations!

Dr. Pamela Lottero-Perdue’s paper, presented at the 2014 Annual Meeting of the American Society for Engineering Education, was selected "Best Paper" for the whole conference. Entitled, "Perspectives on Failure in the Classroom by Elementary Teachers New to Teaching Engineering," the paper points out that in engineering, failure happens all the time, and it is actually a very useful part of the engineering design process.

Dr. Elana S. Ehrlich, Assistant Professor of Biological Sciences, was selected as the 9th Jess and Mildred Fisher Endowed Chair, and Dr. Rajeswari Kolagani was named a Wilson H. Elkins Professor by the University System of Maryland. Again, congratulations!

Finally, we celebrate the arrival from Texas Tech University of Dr. Chris Salice, our new Director of the Environmental Science and Studies program. Chris is a toxicologist and his faculty appointment is in the Department of Biological Sciences. He is a successful research scientist and he has great ideas for carrying on the tradition of excellence in Environmental Science begun by Dr. Jane Wolfson. Welcome, Chris!

It’s a pleasure to be back in the swing of an exciting fall semester. I invite you to check out our newsletter and think about ways you can keep connected with the Fisher College.

David A. Vanko
Dean
Manuscripts Reviewed

Dr. Barry Margulies reviewed a manuscript for *Infection, Genetics, and Evolution*.

Dr. Peko Tsuji reviewed a manuscript for *Biological Trace Element Research* in September 2014.

Dr. Matthew Hemm reviewed manuscripts for *PLoS Biology* and *Genetica*.

Dr. Harald Beck reviewed a manuscript for *Biotropica* and one for *Tropical Conservation Science*.

Dr. Christopher Oufiero reviewed a manuscript for the *Biological Journal of the Linnean Society*.

Dr. Jay Nelson reviewed a manuscript for the *Journal of Fish Biology* and another for the *Journal Physiological and Biochemical Zoology*.

Dr. Jay Nelson reviewed a grant proposal to the NSF Physiological and Structural Systems Cluster Division of Integrative Organismal Systems Directorate for *Biological Sciences Organism* and another proposal to the Canada Foundation for Innovation.

Research Presentations

*The following presentations were made by Dr. Barry Margulies' lab*  
[ * denotes an undergraduate student and ** denotes a graduate student ]


**The following presentations were made by Dr. Tsuji’s lab**

Tsuji PA. Dietary bioactive molecules and the 15kDa selenoprotein in cancer prevention and promotion. Invited seminar at the USDA Beltsville Human Nutrition Research Center, Beltsville, MD (August 27, 2014)

Canter JA, Sheckells SE, Saylor CV, Carlson BA, Gladyshev VN, May M, Davis CD, Hatfield DL, and Tsuji PA. Effects of dietary selenium and 15kDa selenoprotein expression on intestinal microbiota and inflammatory colon cancer. (Graduate student J. Canter presented talk) 15th Trace Elements in Man and Animals meeting, Orlando, FL (June 2014).

Rosso LE, Galinn SE, Carlson BA, Tobe R, Naranjo-Suarez S, and Tsuji PA. Effect of flavonoids on thioredoxin reductase 1 and the 15KDa selenoprotein in colon cancer cells. 15th Trace Elements in Man and Animals meeting, Orlando, FL (June 2014). (Poster presented by L Rosso)

Foster R, Carlson BA, Onyewu C, Saylor CV, Tobe R, Seifried HE, Gladyshev VN, Davis CD, Hatfield DL, and Tsuji PA. Potential role of the 15kDa selenoprotein in colorectal inflammation. 15th Trace Elements in Man and Animals meeting, Orlando, FL (June 2014). (Poster presented by P Tsuji)

**The following presentations were made by Dr. Matthew Hemm’s lab**

Aqsa Jamil (Hemm Lab) presented a poster titled "Investigation of Essential Amino Acids Using Site-Directed Mutagenesis and Directed Evolution of the Small Protein CydX" at the 2014 Colonial Academic Alliance Undergraduate Research Conference.

Matthew Hemm presented a poster titled "Characterizing the Role of Small Transmembrane Proteins in Cytochrome bd Oxidase Activity" at the 2014 Gordon Research Conference on Microbial Stress.

**The following presentation was made by Dr. John Weldon’s lab**


**The following presentations were made by Dr. Richard Seigel’s lab**

The following TU undergraduate and graduate students presented posters or oral presentations at the 2014 Joint Meeting of Ichthyologists and Herpetologists (JMIH) in Chattanooga, Tennessee:

Anderson, Kaite. Impacts of Human Recreation and Hydroelectric Flow Regime on Basking Behavior in Northern Map Turtles, Graptemys geographica


**The following presentations were made by Dr. Jay Nelson’ lab**

Jay A. Nelson and his students gave the following presentations at the International Congress on the Biology of Fish, August 2014 in Edinburgh Scotland:

“Intraspecific variation in locomotor efficiency, hypoxia tolerance and ecological performance in European sea bass: implications for and increasingly hypoxic world” (Jay A. Nelson oral presentation with co-authors Guy Claireaux, and Felix Mark).
“Do social status or predation threat influence air-breathing behavior of a facultative air breather, *Panaque maccus*?” (oral presentation by Towson undergraduate student Cheyenne Owens with fellow Towson undergraduate Molly Fisher and Jay A. Nelson as co-authors).

**The following presentations (oral and/or poster) were made by Dr. Vonnie Shields’ lab**
[* denotes an undergraduate student and ** denotes a graduate student*]

Huynh*, Kimberly A. and Shields, Vonnie D.C. (2014) From molecules to motion: assessing the attractiveness of volatile plant compounds on crickets using a behavioral paradigm. Undergraduate and Graduate Student Research and Performance Expo. Towson University, April 23. This research was also presented at the Retirement Luncheon Towson University Provost Office, June 1, in the form of a hands-on workshop and poster presentation at Towson University’s 5th Field Station Open House, Monkton, MD, May 3, and at an MB3 Club Seminar, Towson University, April 4.


**Peer-Reviewed Research Publications**


Grants & Awards (Students)

Jessica Hobson (Hemm Lab) was awarded the Wilfred B. Hathaway Award for Outstanding Graduate Student in Biology.

Allyson Genson (Hemm Lab) was awarded the Towson University Student Employee of the Year Award.

Matthew Hemm was awarded an Honorable Mention for the 2014 Council on Undergraduate Research (CUR) Biology Mentor Award (Early Career category).


Grants & Awards (Faculty)

Vonnie Shields was awarded an FCSM School of Emerging Technology research grant supplement ($22,739.54).

Other Professional outreach

Dr. Jay Nelson co-organized the symposium “Climate change and prevalence of dead zones: Bad news for Fishes?” at the International Congress on the Biology of Fish, August 2014 in Edinburgh Scotland.

Dr. Jay Nelson made two presentations to the Hackerman Academy Saturday Morning Science series, February, 2014.

Dr. Barry Margulies gave a seminar at the Park Upper School: "Fire and forget: single dose, controlled release delivery of antivirals for the long-term suppression of human and animal herpes virus infections."

Dr. Harald Beck's project “Where Peccaries Wallow, Other Animals Follow” was highlighted by the National Geographic Online Journal:  

DEPARTMENT OF CHEMISTRY

New Faculty

The Department is pleased to welcome one tenure-track Assistant Professor and one full-time Lecturer in Fall 2014. Dr. Keith Reber, Assistant Professor of Organic Chemistry, received his B.S. in Chemistry and Mathematics from the Pennsylvania State University and his Ph.D. in Synthetic Organic Chemistry from Princeton University. He was a Postdoctoral Fellow in the Department of Chemistry at the University of California, San Diego for the last two years. Keith’s research interests are in the area of total synthesis of natural products of pharmaceutical interest. Dr. Lawrence (Larry) Sein, our new Lecturer, received his B.S. in Chemistry from Charter Oak State College, his M.A. in Chemistry from Temple University and his Ph.D. in Physical and Inorganic Chemistry from Temple University. Dr. Sein has taught at several institutions, including Cabrini College, Cedar Crest College and Eastern University and serves as Editor at BioSprings Laboratory LLC. This year he is teaching General Chemistry and Inorganic Chemistry.
Publications

Ryan Casey was a coauthor on the following manuscript submitted for publication:


Kelly Elkins, TU Department of Chemistry Lecturer Danniebelle Haase, two TU Chemistry undergraduate research students and Kelly’s colleagues at Metro State University submitted the following manuscript:


Another paper written by Kelly and undergraduate and Masters in Forensic Science research students is in press:

Eychner, A.M.*., Lebo, R.J.*. and Elkins, K.M. Comparison of proteases in DNA extraction as assessed by quantitative PCR. *Analytical Biochemistry, in press.*

Kathryn (Beth) Kautzman; her University of North Carolina, Chapel Hill collaborator, Dr. Surratt; and two of their undergraduate research students coauthored a paper that has been accepted for publication:


Lev Ryzhkov coauthored the following paper with collaborator Dr. Lectka at the Johns Hopkins University:


Grants

Tim Brunker submitted a $60,000 proposal to the Henry-Dreyfus Teacher-Scholar Award program of the Dreyfus Foundation.

Kelly Elkins submitted the following proposal:

Development of New Genetic Assays for Plant Drug Species Differentiation using Real-time PCR, Forensic Science Foundation Acorn Grant program, $993.

Beth Kautzman submitted the following proposal:

Constraining Contributors to Climate Change: Determining the Optical and Chemical Properties of Atmospheric Aerosol Produced from Biomass Burning of Wood Pellets, Marion Milligan Mason Award for Women in Chemical Sciences, American Association for the Advancement of Science, $50,000.

David Ownby is the Principal Investigator on the following contract with the Maryland State Highway Administration to study best practices for road salt run-off management in 19 states:


John Sivey was awarded the following research grant from the American Chemical Society Petroleum Research Fund:

Sivey, J., Kinetics of Electrophilic Aromatic Substitution by Aqueous BrCl, BrOCl, and Br₂O: Catalysis of Alkylbenzene Bromination, ACS-PRF, $55,000.

John Sivey and three fellow analytical chemistry faculty members in the Department of Chemistry received the following Fisher General Endowment grant:

Ana-Maria Soto submitted the following proposal:

Conformation and Stability of Model Riboswitches, National Institutes of Health, R15 AREA grant, $270,688.

Research Presentations

Tim Brunker gave a presentation on “Borenium Cations Stabilized by Azaferrocene Lewis Bases” at the Boron in the Americas XIV conference, Rutgers University-Newark, June, 2014.

Beth Kautzman gave a poster presentation at the 248th American Chemical Society National Meeting, San Francisco, CA in August, 2014:

Kautzman, K., “Light-absorbing carbon formation in secondary organic aerosol from heterogeneous reactive uptake of isoprene epoxydiols.” Her poster was selected for the special "hot topics" SciMix poster session.

John Sivey and undergraduate research student Mark Bickley also presented at the San Francisco meeting. John gave the following platform presentation:

Sivey, J., Victor, D.*, Bickley, M.* and Sapienza, N.* “Catalysis of Disinfection By-Product Precursor Halogenation by Halides and Hypohalous Acids.”

Mark Bickley gave the following poster presentation:

Bickley, M.*, “Reactivity of Phenylalanine with Brominating Agents: Quantifying Regiospecific Rates of Brominated Phenylalanine Formation.”

Faculty Professional Development and Service

Tim Brunker attended the NSF-sponsored cCWCS (Chemistry Collaborations, Workshops and Community of Scholars) Workshop on “Active Learning in Organic Chemistry” June 7-9 in Denver, CO.

Kelly Elkins served on a National Institute of Justice review panel in Arlington, VA in June.

Kelly Elkins reviewed a manuscript for the Journal of Chemical Education in September.

Ryan Sours reviewed a grant proposal for the Research Corporation for Science Advancement.

Summer Undergraduate Research

Mr. Mark Bickley was awarded a Ronald and Linda Raspet Research Fellowship for Summer 2014. He worked under the mentorship of John Sivey on "Reactivity of phenylalanine with brominating agents: Quantifying regiospecific rates of brominated phenylalanine formation."

Tim Brunker mentored Sarah Krause and David Szymanik in research on Azaferrocene-stabilized borenium cations funded by Tim’s ACS-PRF grant.

Forensic Programs

2014 MSFS graduates Zoe Krohn and Jessica Siler were recently hired as Crime Scene Technicians at the Baltimore City Police Department Crime Laboratory. They are the latest additions to the growing list of alumni of the Masters in Forensic Science program who have found employment in over 40 different positions at public and private laboratories within a year of graduating.
DEPARTMENT OF
COMPUTER AND INFORMATION SCIENCES

Publications and Presentations

Jonathan Lazar published a paper titled "Engaging in Information Science Research that Informs Public Policy" in the journal Library Quarterly.

Jonathan Lazar, Brian Wentz (Shippensburg University), Michael Stein (Harvard Law School), and three undergraduate students from Frostburg State University (Oluwadamilola Gbenro, Edwin Holandez, Andrew Ramsey), published a paper titled "Danger, Danger! Evaluating the Accessibility of Web-Based Emergency Alert Sign-Ups in the Northeastern United States" in the journal Government Information Quarterly.

Recent doctoral graduate Abiodun Olalere, Professors Jonathan Lazar and Heidi Feng, and Tim Brooks (DECO/DIAR), published a paper titled "Investigating the Effects of Sound Masking on the Use of Audio CAPTCHAs" in the journal Behaviour and Information Technology.

Jonathan Lazar, and Mega Subramaniam, Paul Jaeger, and John Bertot (all 3 from the iSchool at the University of Maryland), published a paper titled "HCI Public Policy Issues in U.S. Libraries" in ACM Interactions.

Robert Hammell and doctoral student John Auten had their paper entitled "Predicting the Perforation Capability of Kinetic Energy Projectiles using Artificial Neural Networks" accepted for publication and presentation at the IEEE Symposium Series on Computational Intelligence (SSCI) to be held 9-12 December 2014 in Orlando, Florida.

Marius Zimand has published a paper "Counting dependent and independent strings," in Fundamenta Informaticae, 131(3-4): 485-497 (2014).

Marius Zimand gave a presentation, "Linear list-approximation for short programs (or the power of a few random bits)" (joint work with Bruno Bauwens) at the 29-th IEEE Conference on Computational Complexity, June 2014, Vancouver, Canada.


Xinkai Li and Chao Lu have a paper "Overflow Detection in Multiple P-adic Parallel Implementation" accepted by ACM- RACS 2014.

Marcel-Titus Marginean and Chao Lu have a paper "A Multi-Paradigm Object Tracker for Robot Navigation Assisted by External Computer Vision" accepted by ACM- RACS 2014.


Subrata Acharya along with Doctoral Student Reza Sarraf published a paper titled “Pro-Care: Proactive Real-time Solution for Asthma Management” at the IEEE 14th International Conference on Bioinformatics and Bioengineering, Boca Raton, USA, November 10-12, 2014.

Subrata Acharya and Doctoral Student Reza Sarraf published an abstract titled “AsthmaCare: A Comprehensive Approach towards Effective Asthma Management” at the Academy of Business Research International Conference, Atlantic City, New Jersey, USA, September 24-26, 2014.

Services to the Discipline

Blair Taylor was a panelist for “Academia and Security Curriculum: A Need for Future Developers” at the Intel Developers Forum (IDF 2014) in San Francisco, CA.

Gabriele Meiselwitz has been named the program chair for the 7th International Conference on Social Computing and Social Media, to be held in the context of HCII International, to be held in Los Angeles, August 2015.

ACM- RACS 2014 (Research in Adaptive and Convergent Systems) will be hosted by Computer and Information Sciences Department, October 5-8, 2014.

Subrata Acharya represented the CAA Undergraduate Research Journal as Managing Editor at the CAA Undergraduate Research Coordinator Meeting, Towson University, April 12, 2014.

Subrata Acharya was appointed to the Editorial Board of the Academy of Business Journal from June 2014 onwards.

Subrata Acharya was invited as a Panel Review Member for the Cyber Physical Systems Proposal Review at National Science Foundation during July 2014.

Grants & Awards

Dr. Wei Yu received a prestigious National Science Foundation Faculty Early Career Development (CAREER) award, titled “CAREER: Towards Secured and Efficient Energy-based Critical Infrastructure.” With a total $436,453 in funding, Dr. Yu will spend the next five years researching how to make the national smart electrical grid secure and efficient.

Awards

Ming Tomayko has been selected to receive the 2014 Maryland Council of Teachers of Mathematics (MCTM) Excellence in Teaching Award as a College Mathematics Educator. She will receive her award at the MCTM annual banquet on October 16.

Grants Awarded

Felice Shore and Raouf Boules received a grant from the Bill & Melinda Gates Foundation through the University System of Maryland (USM) and Ithaka S+R ($18,700). The grant is to coordinate a study to look at the effect a summer online remediation offering has on improving placement in mathematics courses for new TU students.
Ming Tomayko and Diana Cheng received funding from the National Security Agency’s 2014 Mathematics and Engineering Partnership Grant Program (MEPP) to conduct a week long summer professional development institute. The grant was submitted in collaboration with Baltimore County Public Schools. The Summer Institute for Common Core Number and Quantity took place on campus from July 21-25. Twenty-one public secondary school teachers from various counties in Maryland participated in this professional development. During the institute, teachers were engaged in activities and discussions reflective of the Standards for Mathematical Practice. Teachers gained familiarity with the Partnership for Assessment of Readiness for College and Careers (PARCC) test and worked in teams to create and present lesson plans addressing a standard in the Common Core Number and Quantity strand.

Papers Published or Accepted for Publication

Diana Cheng and graduate student Nicole Horner wrote an article entitled “Word Numbers Fortified by Universal Design for Learning” which was accepted for publication in the MathMate, the South Carolina Council of Teachers of Mathematics journal.

Russell Hendel's paper "Quasi-Periods for the Hofstadter Q Function" was accepted for publication by the Fibonacci Quarterly.

Russell Hendel's contribution A244608, was published on the Online Encyclopedia of Integer Sequences, at http://oeis.org/A244608.


A graduate of the secondary mathematics education program, Brendan Reilly, had a letter published in the Reader Reflections section of the latest issue of the Mathematics Teacher, September 2014, p. 87, published by the National Council of Teachers of Mathematics. He suggests another way to help students learn the definitions of the trigonometric functions.

Mircea Voisei's paper "Lipschitz-Convex Optimization Problems Governed by Multi-Valued Affine State Equations" was accepted for publication in Advances in Mathematical Sciences and Applications.

Undergraduate Student Research

Breanna Borror*, Allison Morris* and Michelle Tarr*, The strong symmetric genus spectrum of abelian groups, submitted to Rose-Hulman Undergraduate Math Journal. This research was funded by a Fisher Endowment grant and directed by Coy L. May and Jay Zimmerman.

Conference and Seminar Presentations

Diana Cheng co-presented a workshop at the 2014 BRIDGES Math and Art conference with Tetyana Berezovski (St. Joseph’s University, Philadelphia, PA) calculus, algebra, and trigonometry activities related to the pairs figure skating death spiral. The title of the workshop was “The Mathematics behind the Art of the Death Spiral” and the conference took place in Seoul, Korea in August 2014.

Russell Hendel's invited plenary address, "A Discipline Independent Approach to a Higher Cognitive Pedagogy", delivered at the 2014 World Multiconference on Systemics, Cybernetics and Informatics held in Orlando Florida on June 30 to July 16, 2014, was published on the website for the International Institute of Informatics and Systemics at http://iiis.org/Videos2014.asp

Alexei Kolesnikov gave an invited talk “The Hanf number for amalgamation in coloring classes” at the Workshop on Classification Theory, a satellite meeting for the International Congress of Mathematicians in South Korea in August 2014.
Alexei Kolesnikov’s joint work with J. Goodrick and B. Kim was presented in an invited lecture at the International Congress of Mathematicians by B. Kim. Their joint paper “Amalgamation functors and homology groups in model theory” has appeared in the proceedings of the Congress.

Angel Kumchev visited the Morningside Center for Mathematics at the Chinese Academy of Sciences, in Beijing, China, July 20-28, 2014. He gave a series of four lectures on “Sieve methods and exponential sums” as a part of the 2014 Number Theory Workshop, organized at MCM.

Lawrence Shirley served on the International Program Committee for the Fifth International Conference on Ethnomathematics in Maputo, Mozambique, July 7-11, 2014. At the conference, he made a plenary presentation entitled, ’Mathematics of Students’ Culture: A Goal of Localized Ethnomathematics’ and met as a member of the Board of Directors of the International Study Group on Ethnomathematics.

Martha Siegel attended the R.L. Moore/Inquiry-Based Learning Conference in Denver, CO in June. She was supported by a grant from the Educational Advancement Foundation and the Mathematical Association of America (NSF funding).

Martha Siegel attended MAA’s MathFest, held in Portland, OR, August 6-9 and led focus groups for the Board of Governors on the proposed “cognitive and content” principles brought to the Board by the Committee on the Undergraduate Program in Mathematics (CUPM) in connection with its 2015 Curriculum Guide to Majors in the Mathematical Sciences. The principles ultimately were approved by the Board. She is the Co-PI on two NSF grants for preparation and distribution of the Guide.

Workshops and Seminars

Gail Kaplan and Michael Krach led a one week workshop in July, 2014, to provide professional development activities for teachers of secondary school algebra from around the state. The workshop provided opportunities for teachers to learn how to implement the Standards for Mathematical Practice and the Common Core State Standards in Algebra. During a significant portion of each day, the teachers were challenged with authentic activities that enabled them to experience what their students should be doing in the classroom. Teachers also created and shared activities to help students master algebraic concepts. An online community will continue throughout the year. These activities are supported by a partnership with the Baltimore County Public Schools in a NSA grant.

Gail Kaplan organized a week long workshop in August, 2014 for Advanced Placement Calculus teachers from several counties in Maryland. This workshop is part of a yearlong program to improve student performance on the national examination. Workshops throughout the academic year to support these teachers begin in the fall. These activities are supported by a grant from the College Board for which Dr. Kaplan is the principal investigator.

Gail Kaplan organized a two week Boot Camp for high school students in Baltimore County from July 14 - 25 to help them prepare for Advanced Placement Calculus. This boot camp is part of a yearlong program to improve student performance on the national examination. Students will continue to receive extra help throughout the year with after school and Saturday sessions. These activities are supported by a grant from the College Board for which Dr. Kaplan is the principal investigator.

Felice Shore facilitated a professional development workshop for middle school teachers at Tench Tilghman Elementary Middle School in Baltimore City on August 21. The topic was Ratio and Proportion standards in the Common Core and their presentation in Baltimore City’s Agile Mind curriculum.

Martha Siegel was an invited participant in the workshop, “Transforming Post-Secondary Education (TPSE) – Mathematics,” held in June at the University of Texas at Austin. TPSE is supported by the Sloan Foundation and the Carnegie Foundation. A report will be published soon.

Refereeing, Reviewing, and Panel Service

Diana Cheng reviewed an article submitted for possible inclusion in the National Council of Teachers of Mathematics Journal, Mathematics Teaching in the Middle School.

Russell Hendel was asked to review a paper for the Fibonacci Quarterly.
Russell Hendel's book review of *Closing The Achievement Gap from an International Perspective: Transforming STEM for Effective Education*, Julia V. Clark, Editor, ([http://www.maa.org/publications/maa-reviews/closing-the-achievement-gap-from-an-international-perspective](http://www.maa.org/publications/maa-reviews/closing-the-achievement-gap-from-an-international-perspective)) was published by the *Mathematical Association of America*.

**Other Professional Activities**

Mostafa Aminzadeh has been appointed as Associate Editor of the *Journal of Mathematics and Statistics*.

Russell Hendel was invited to continue his membership on the Program Committees for The 6th International Multi-Conference on Complexity, Informatics and Cybernetics, IMCIC 2015, to be held in March 2015 in Orlando, Florida and The 6th International Conference on Education, Training and Informatics, ICETI 2015.

Gail Kaplan accepted an invitation to take part in the 2014 Advanced Placement Calculus reading in Kansas City.

As a member of the Board of Examiners of CAEPNCATE, Gail Kaplan accepted an invitation to serve on a team to evaluate the program of a university.

Todd Moyer served as a table leader for the fourth year at the College Board's AP Calculus Reading of the free response questions in Kansas City during June. This year, there were almost 425,000 exams to be graded.

Lawrence Shirley spoke to two classes at the Bryn Mawr School on April 8, about Mathematics in West African Culture.

Lawrence Shirley was interviewed on the internal television system of Oak Crest retirement community on March 17, about “Pi Day”.

**CoSMiC Scholarship Program**

Alexei Kolesnikov has joined the leadership of the CoSMiC Scholarship program as the representative of the Mathematics Department. Martha Siegel, who directed the program and was the Mathematics Department representative since its inception in 2002, stepped down in August. Dr. Gabrielle Meiselwitz, Computer and Information Sciences, is the new director. Dr. Gail Gasparich continues to represent MB3 students as part of the leadership team. The CoSMiC Scholarship program is funded by the National Science Foundation under its S-STEM program. Since its inception in 2002, the program has distributed about $1.5 million in scholarships to Towson students majoring in mathematics, MB3, or the computing sciences.

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**DEPARTMENT OF PHYSICS, ASTRONOMY & GEOSCIENCES**


**Proposals**

Vera Smolyaninova submitted a white paper to DoE entitled “Enhancement of superconducting critical temperatures via a metamaterial route.”

Dr. Jia-An Yan submitted a proposal to Cottrell College Science Award in August: “Structural stability and spin-orbit coupling in two-dimensional group IV materials: from silicene to stanene.” Budget: $55,000.
Raj Kolagani and Grace Yong received seed funding from the School of Emerging Technologies, Towson University, for their project on developing oxide thin films for renewable energy applications.

Publications
[* denotes an undergraduate student co-author and ** denotes a graduate student co-author ]

Ron Hermann submitted a manuscript entitled "Elementary education majors’ views on evolution: Awakening the dialogue on elementary education models" to the peer-reviewed journal *Science Education*.


Presentations and abstracts


V. N. Smolyaninova and I. I. Smolyaninov, “Is There a Metamaterial Route to High Temperature Superconductivity?” CLEO/QELS 2014, San Jose, CA.


Joel Moore gave an invited plenary talk at the *Urban Geochemistry Working Group Meeting*, Columbus, OH entitled “Stable isotopes of CO₂ as a method to quantify anthropogenic and natural sources of carbon in an urban setting."

Joel Moore gave a seminar talk in the Geology Department at Kent State University entitled “A high salt diet: How stormwater management ponds affect road salt impacts on soils, groundwater, and streams.”
The Transformational Electronic Materials (TEM) research group supported by the FCSM General Endowment fund and led by PAGS faculty members Jia-An Yan, Jeffrey Simpson, Rajeswari Kolagani, Gary Pennington, Grace Yong, David Schaefer and Abdellah Lisfi (Morgan State University) commenced activities in July 2014. Undergraduate and graduate student researchers have been presenters alongside faculty members in several meetings of the group (photo below).

**Community Engagement and Professional Service**

Ron Hermann reviewed conference proposals for the 2015 ASTE International Conference and the 2015 NARST International Conference.

Ron Hermann reviewed a manuscript for the journal *Science Education*.

Ron Hermann, Rommel Miranda, Cindy Ghent and Sarah Haines submitted a proposal to host the 2018 ASTE International Conference in Baltimore, MD.

Vera Smolyaninova reviewed a paper for Physical Review Letters and a paper for JOSA B.

Joel Moore reviewed two manuscripts for *Geochimica et Cosmochimica Acta*.

Rommel Miranda, Jennifer Scott, and Karen Schaefer held the 7th Annual Baltimore Project ASTRO workshop at the Maryland Science Center on August 1. Over 45 teachers and astronomer from around the Baltimore region attended the day long workshop for building partnerships to implement astronomy activities in schools. Nobel Laureate John Mather from Goddard Space Flight Center was the keynote speaker.

Jennifer Scott gave two planetarium presentations on the Autumn Sky for the monthly planetarium series and for Family Weekend activities.

Dr. Jia-An Yan reviewed a manuscript for the Journal of Physics: Condensed Matter.

**Student News**

Zoey Warecki (undergrad physics major, pictured right) did her summer internship at the Functional Oxides group at Brookhaven National Laboratory. Zoey also attended the International Conference of Physics Students (ICPS 2014) held at Heidelberg Germany during Aug 10-17, 2014. As a winner of the “Outstanding Student Award for Undergraduate Research, Zoey was one of the two U.S representatives at the conference.

Three other students performed summer research. Nathan Prins (pictured left) worked at the Max Planck Institute, Kielan Wilcomb worked at Johns Hopkins University, and Daniel Zile worked at the University of South Dakota.
The Fisher College of Science and Mathematics welcomes Dr. Chris Salice, as the new program director.

The Environmental Science and Studies Student Club had their first meeting of the academic year on September 22. Lee Ackerman, Jessica Krebs, Shelby Conrad and Ameera Rahman are the current student officers; Dr. Chris Salice is the current faculty advisor. The club is planning seminars, volunteer opportunities and other activities to improve environmental awareness and quality on the TU campus and beyond. One of the first events will be a stream clean up of Towson Run!

Recent ENV S M.S. graduate student, Carly Dean, was lead author on a paper accepted for publication in the journal Ecological Indicators. The work was a result of her collaboration with the Beijing Development Area in Beijing, China in 2013:


On September 12th, two MB3 students presented the results of their research at the biweekly MB3 seminar series. Their research was conducted during the summer as interns in competitive external internships. Neta Shwartz reported on her work titled “Identifying interaction partners among membrane-associated proteins of the BMP signaling pathway in Caenorhabditis elegans.” Marika Boruszczak talked about her work titled “BET inhibitors: Promising New Therapeutics in the Fight Against MYC Dependent Cancers.”

On September 26th two other MB3 students presented the results of their summer research internships. Ashlie Feldman gave a talk entitled “Glutamine metabolism as a determinate of cell proliferation, aberrant 2-hydroxyglutamate accumulation and patient survival in breast cancer.” Oluwaseun Durojaye presented her work titled “Effect of Hugh Fat Diet on the Neuronal Nitric Oxide Synthase in the Jejunum of Mice.”

Two MB3 students, Maria Richey and Thammy Etienne were selected to receive Women of Color Student Leadership Awards. Thammy won her award in the research category and Maria in the scholarship category. They will receive their awards at a conference in Detroit this October.
TOPS (Towson Opportunities in STEM)

Staff

TOPS is excited to welcome Dr. Sharlene Roberson to campus as the STEM Program Director. Dr. Roberson is responsible for broadening STEM student success efforts within FCSM and increasing CHP student success in STEM courses. Beginning September 29, she may also take over a portion of the TOPS Program following the departure of Program Director Annie McMahon.

Programming

2014 marked the sixth year of the TOPS Summer Experience. During the week of August 10th, twenty incoming freshmen experienced a taste of college life. This week-long, on-campus program exposed these incoming Towson University students to the rigor of academic life, the challenges of living in shared spaces, and the joys of being part of a diverse community. The introduction to their future academic experience consisted of lectures, labs, and projects prepared and delivered by Dr. Peko Tsuji (BIOL), Dr. Cindy Ghent (BIOL) and Dr. Ryan Casey (CHEM), along with summer program veterans Dr. Roland Roberts (BIOL), Dr. Tatyana Sorokina (MATH), Dr. Alex Storrs (PAGS), and Dr. Blair Taylor (CIS). Students completed assignments and were involved in workshops intended to refine their skills in note taking, studying, test taking, and meta-cognition. Dr. Jane Wolfson (ENVS) facilitated numerous career exploration activities and welcomed the parents and families of these students. Additional support from Barry Evans (Enrollment Management) provided students with the opportunity to contemplate their personal and professional goals at the beginning of the week, connecting the upcoming college experience with students’ long-term goals; and Laksamee Putnam (Library, Reference) introduced the program participants to research resources and the library facilities.

The annual trip to the TU Challenge Course took place on Friday, September 26. TOPS students from all years participated in teambuilding, communication, and problem solving activities facilitated by Campus Recreation staff. This activity has become a tradition that provides the opportunity for students to meet others in their major rather than just those in their cohort year and incorporates the new students into the larger group.
The Bioscience Education and Outreach team within Towson University's Center for STEM Excellence had a busy summer! The SciTech Student Learning Lab was open for summer learning for Maryland students in grades 3-12. While summer is traditionally a slower time for SciTech since K-12 schools are not in session, several classes from Stratford University participated in our SciTech activities. Stratford University offers culinary certificates and degrees and SciTech activities provide them an opportunity to learn about the science behind their cooking.

Professional development for in-service teachers is a big part of our summer work and we offered a week-long summer workshop for 17 in-service science teachers titled NGSS in Your Classroom: Engaging Students in the Scientific and Engineering Practices. NGSS in Your Classroom is designed to introduce secondary science teachers to the new 3-Dimensional vision for science teaching and learning as outlined in A Framework for K-12 Science Education. The Framework is the foundation for the new Next Generation Science Standards (NGSS) that will be implemented in classrooms throughout Maryland in the 2017-2018 school year. Much attention was given to the Scientific and Engineering Practices that make up Dimension 1 of the NGSS, as students are expected to learn the disciplinary core ideas of science while they, themselves are actively engaged in the Scientific and Engineering Practices. In addition, teachers were given opportunities to explore and discuss the nature of how scientific knowledge is developed. A final, follow-up meeting of this cohort of teachers will meet October 25th to present the results of their Course Project, which required them to modify two lessons to increase student engagement in the Practices, as well as provide explicit opportunities for students to learn about the nature of science.

SciTech staff also engaged in some professional development for themselves! Our two SciTech instructors, Natalie Dussourd and Christina Romano, spent a week at the MADE CLEAR Climate Change Academy held in Lewes, Delaware. MADE CLEAR stands for Maryland and Delaware Climate Change Education Assessment and Research and is a collaborative NSF-funded grant that includes teachers from both Maryland and Delaware. The goals of the workshop included learning more about climate change science, as well as how to teach this topic at K-12 level. Natalie and Christina will continue meeting with their summer cohort throughout the upcoming school year as they work to incorporate the latest in climate change education into our SciTech activities.

The SciTech Student Learning Lab is still accepting reservations for class visits for the 2014-2015 school year. For more information on all our programs, and to make a reservation for SciTech or the Maryland Loaner Lab, please visit our website at www.towson.edu/cse/beop.