A Message from the Dean

We embark on a new academic year by welcoming, officially, Dr. Vonnie D. Shields as the college's new Associate Dean. Vonnie replaces Gail Gasparich, who last spring became the Dean of Arts and Sciences at Salem State University in Massachusetts. We also welcome Dr. Siddharth Kaza as the new department chair in Computer and Information Sciences (CIS), replacing Dr. Chao Lu who served in that role for many years. In addition, Dr. Nadim Alkharouf has replaced Dr. Larry Wimmers as the Director of the Molecular Biology, Biochemistry & Bioinformatics Program. Finally, we welcomed our new and returning students, including the STEM Residential Learning Community students in Richmond Hall and our Towson Opportunities in STEM (TOPS) students. We look forward to a successful year for all.

I would like to mention three accolades of note for FCSM faculty members. Dr. Wei Yu (CIS) was named an Elkins Professor by the University System of Maryland – a very high honor. Dr. Jinjuan Heidi Feng and Dr. Ziying Katherine Tang, both in CIS, along with Dr. Sonia Lawson from the College of Health Professions, were named 2016 Innovators of the Year by the Daily Record, recognizing their ARMStrokes mobile app for people recovering from a stroke. And Dr. Martha Siegel, Professor Emerita in the Department of Mathematics, will receive the 2017 Award for Distinguished Service to the Mathematical Association of America, recognizing her many years of high-level professional service at the national level. Congratulations to all!

Sincerely,

David A. Vanko
Dean

Memorial Gifts... from the Development Office - Gifts benefiting The Jess and Mildred Fisher College of Science and Mathematics or any of the departments mentioned in this newsletter, may be made to Towson University Foundation in honor of a birthday, anniversary or other special occasion, or simply as a thank you for a special favor. Gift acknowledgements will be sent to the donor as well as the individual being honored. For more information, contact the Towson University Development Office at 410-704-3375 or 1-866-301-3375 or write to the Towson University Foundation, 8000 York Road, Towson, MD 21252-0001.
Major Research Instrumentation NSF Grant

Vonnie Shields (PI, Biological Sciences), Mary Sajini Devadas (Co-PI, Chemistry), Rajeswari Kolagani (Co-PI, Physics, Astronomy, and Geosciences, PAGS), Vera Smolyaninova (Co-PI, PAGS), Amy Williams (Co-PI, PAGS), Kathryn Kautzman (Senior Personnel, Chemistry), and Ellen Hondrogiannis (Senior Personnel, Chemistry) were awarded a Major Research Instrumentation Grant (MRI) from the National Science Foundation (NSF), Division of Materials Research ($530,545.00; 2016-2019), entitled “MRI: Acquisition of a field emission scanning electron microscope with STEM and EDS capabilities for interdisciplinary research and education at Towson University”. The proposal supports the purchase of a state-of-the-art low vacuum field emission scanning electron microscope (FESEM) capable of obtaining images of various materials and biological specimens with extremely high (nanoscale) resolution. It will be used to analyze the chemical composition of materials with high precision and to advance research in several areas of biological, chemical, geological and physical sciences in the Fisher College of Science and Mathematics (FCSM).

This ultrahigh resolution, imaging, and chemical analysis, offered by this microscope, will enable breakthrough discoveries that will impact the fundamental science in these diverse disciplines and meet the needs in ongoing and future research projects in inorganic, electronic, photonic, environmental, forensic, entomological and geobiological material. In addition, it will make a decisive impact in generating advanced scientific understanding, increased speed of research turn-around, and technological innovation by researchers at Towson University and its committed users from neighboring institutions, namely Loyola University of Maryland and Goucher College.

Projects will enhance our understanding of how and what chemosensory information is detected, analyzed, encoded, and responded to by the insect nervous system, exploring and manipulating the behavior of materials at extremely small size limits that underlie nanotechnology, harnessing the power of ‘meta materials’ to achieve superconductivity at high temperatures with the potential of revolutionizing many technologies including power transmission and quantum computing, developing catalyst materials that are essential for achieving viable renewable and clean energy technologies, and understanding the mineral biosignature preservation in geological systems, which is the key to finding life forms in extraterrestrial habitats. These projects will provide unique hands-on opportunities for undergraduate and master’s students and collaborating institutions who will be trained and supervised by the faculty members on the use of this advanced instrument for interdisciplinary research. In addition, this instrument will enhance classroom and laboratory instructions in several undergraduate and master’s level courses offered in FCSM.
The Department of Biology welcomed several new faculty this fall. **Dr. Jaqueline Doyle** is a new Assistant Professor with expertise in conservation genetics of vertebrates, most recently of raptors including golden eagles. She will be teaching courses in ecology, evolution, and molecular genetics. **Dr. Elizabeth O’Hare** is a new Clinical Assistant Professor with a research background in genetics. She will be teaching and coordinating our large introductory biology course for students in the health professions. We also welcomed a new lecturer, **Ms. Angela Cox**, who will be teaching in the same course as Beth. **Dr. Steve Kimble** is a Visiting Assistant Professor teaching courses in genetics and molecular ecology.

**Faculty Publications**


Oufiero, C.E., T. Nguyen, A. Sragner and A. Ellis. Patterns of variation in feeding strike kinematics of juvenile ghost praying mantis (Phyllocrania paradoxa): are components of the strike stereotypic? The Journal of Experimental Biology. 219: 2733-2742 (includes TU undergraduates)


Faculty Publications


Presentations / Workshops


Professional Conferences


Nelson, Jay A., Kelly J. Rieger (TU graduate student) and Christopher M. Fish (TU undergraduate student). Thermal tolerance of swimming fishes: what can it tell us about adaptation to climate disruption and oxygen-and capacity-limited thermal tolerance? Oral presentation at The International Congress on the Biology of Fish (ICBF), June 2016, San Marcos, Texas.


Dr. John Weldon presented a poster entitled “Refolding and Purification of Unmodified Human Elongation Factor 2” at the 30th Anniversary Symposium of The Protein Society, held in Baltimore, MD July 16-19 2016.

Brian Fath made the following presentations at conferences:

Using regenerative economics to flourish within the limits to growth. EcoSummit 2016. Montpellier, France. 31 August 2016.

Ecological and social system bioenergetics: open loop or autocatalytic. EcoSummit 2016. Montpellier, France. 31 August 2016.


Trophic transfer efficiency: origins, justifications, and applications in ecological models. International Society for Ecological Modelling Global Conference. Towson University. Towson, Maryland. 8 –12 May 2016.

Flourishing within the limits (with Dan Fiscus). International Society for Ecological Modelling Global Conference. Towson University. Towson, Maryland. 8 –12 May, 2016.

Grants

Laura Gough received a five-year research award from the Division of Polar Programs at the National Science Foundation entitled “Collaborative Research: Adding animals to the equation: linking observations, experiments, and modeling approaches to assess herbivore impacts on carbon cycling in Northern Alaska.” The project, in collaboration with researchers at Columbia University, University of New Hampshire, University of Texas-El Paso, and the Marine Biological Laboratory, was funded for $2.7 million with approximately $340,000 coming to Towson to support Gough’s research.

Vanessa Beauchamp, Joel Moore (PAGS), Ryan Casey (CHEM) and Chris Salice were awarded a grant for approximately $200,000 through the Chesapeake Bay Trust Restoration Research Program. The project is “Determining the effects of legacy sediment removal and floodplain reconnection on ecosystem function and nutrient export.”

Vonnie Shields was awarded a new U.S. Department of Agriculture (USDA)- Research, Education, and Economics Cooperative award entitled “Identification of volatile chemicals based on plant origin to manage brown marmorated stink bug populations” ($154,699.88) for 2016-2018.

Reviews

Manuscripts

Dr. Steve Kimble: BMC Genomics

Dr. Richard Seigel reviewed a manuscript for the journal Conservation Biology

Dr. Chris Oufiero: Two manuscripts were reviewed for Proceedings of the Royal Society of London, B; One manuscript for the American Naturalist; one manuscript for Biology Letters.

Jay Nelson reviewed manuscripts being considered for publication in the following journals: Biology Letters, The Journal of Experimental Biology, The Journal of Fish Biology and Physiological and Biochemical Zoology

Vonnie Shields reviewed manuscripts for Zoology, Scientific Reports, Dove Medical Press, and Journal of Insect Physiology.

Vonnie Shields served as a reviewer for the Fulbright Specialist Program Discipline and reviewed two applications.

Books

Sarah Haines: Reviewed a book proposal for National Science Teachers Association on schoolyard classrooms

Reviewed children’s science trade book “The Big Book of Nature Activities” for NSTA Recommends

Journals

Laura Gough continued to review manuscripts at Oecologia in her role as Handling Editor.
Student Achievements

Presentations


Awards

Dr. Jay Nelson’s graduate student Krista Kraskura received a $500 research award from the GSA.

Dr. Brian Fath: Prigogine Medal 2016. The Medal is awarded annually by the University of Siena and the Wessex Institute of Technology to a leading scientist in the field of ecological systems. Alicante, Spain, July 2016.

Community Outreach

Dr. Richard Seigel presented an invited talk to visitors to Susquehanna State Park on 10 September 2016. The talk was entitled “Reptiles and Amphibians of Maryland”.

What began as an assignment in an advanced writing course turned into a community service project for senior Biology/Chemistry double major and Physics minor Alexandra Vlk. Alexandra, along with her parents, and faculty mentor Dr. Colleen Winters, built and installed eight bat houses on four local nature preserves: Glen Woods, TU Field Station in Monkton, Piney Run Park in Carroll County, and Loch Raven Reservoir. Each four chambered house can provide shelter for up to 100 bats. Introduction of bat houses can help reduce mosquito populations; little brown bats can eat over 1000 mosquito-sized insects in an hour (Tuttle 2013). Funding for the project was provided by FCSM, the Department of Biological Sciences, and the TU SGA Civic Engagement Fund.
The Department of Chemistry would like to announce Cindy Wolfe as our new Administrative Assistant II. Cindy comes to us from the College of Health Professions where she served as the sole administrative assistant in the Department of Interprofessional Health Studies. Cindy joined us in August and has hit the ground running, quickly learning a lot of Chemistry lingo while putting her depth of TU experience to work in support of our faculty and students. Welcome, Cindy!

**Faculty Publications**

Meade, L.E., Riva, M., Blomberg, M.Z., Brock, A.K., Qualters, E.M.,


**Presentations / Workshops**

Tim Brunker gave a presentation at the ACS National Meeting, Philadelphia, PA on “Stereoisomerism in Ruthenium complexes of chiral, linear tetratentate aminosulfoxide ligands”.

John Sivey co-organized a symposium at the 252nd American Chemical Society National Meeting in Philadelphia, PA. The symposium was entitled, “Advancing Teaching and Learning in Environmental Chemistry Courses: Innovative Tools and Techniques”.


**Grants**


Smolyaninova, V; Devadas, M.S. (Co-PI) “Metamaterial nanocomposites for superconducting critical temperature increase” School of Emerging Technologies $ 16,000. (FY 2016-2018)

Menon, D; Devadas, M.S. (Co-PI); Cheng, D “3-Dimensional Approach to the Energy Lesson: Preparing STEM Teachers at TU” Faculty Development Research Committee $6,000. (FY 2016-2017)

**Reviews**

Tim Brunker reviewed a manuscript for Chemical Science.

Ryan Casey reviewed a manuscript for the journal Landscape and Environmental Planning.

John Sivey reviewed manuscripts for Chemosphere and Environmental Science and Technology Letters.

John Sivey served as a panel reviewer for the National Science Foundation.
Reviews
Kelly Elkins reviewed two papers for Journal of Chemical Education, two papers for Electrophoresis, two papers for Journal of Inorganic Biochemistry, and one paper for Forensic Science, Medicine and Pathology.

Student Achievements

Presentations


Cassidy Stout gave a poster presentation at the ACS National Meeting, Philadelphia, PA on Stereosomerism and the S-aryl group in Ru(II) dichloride complexes of tetradeutate aminosulfoxide ligands.

A Meola, V Thanthirige, K Reber, MS Devadas, “Electronic Behavior of Fluorophore Labelled Magic Number Gold Clusters.” 19th Annual Undergraduate Research Symposium in the Chemical and Biological Sciences, Baltimore, MD, United States, October 2016. (Poster)

A Meola, V Thanthirige, K Reber, MS Devadas, “Electronic behavior of Coumarin labelled quantum sized Au clusters” APS Mid-Atlantic Meeting, Baltimore, MD, United States, October 2016. (Poster)

S Weatherbee, MS Devadas, “Graphene oxide: Metal nanoparticle system for dual sensing applications” 252nd American Chemical Society National Meeting, Philadelphia, PA, United States, August 2016. (Poster)


**Student Achievements**

**Awards**

Ms. Shelby Weatherbee (Research Mentor: Dr. Mary Sajini Devadas) was awarded the ACS Travel Award to attend the ACS National Meeting in Philadelphia in August 2016

Ms. Shelby Weatherbee’s (Research Mentor: Dr. Mary Sajini Devadas) abstract was selected for the special SCI-MIX session at the ACS National Meeting in Philadelphia in August 2016

Ms. Shelby Weatherbee (Research Mentor: Dr. Mary Sajini Devadas) was awarded The Ronald and Linda Raspet Endowed Summer Fellowship for GOx – Metal hybrid project

Ms. Emmanuelle Nzouatcham Talsa (Research Mentor: Dr. Mary Sajini Devadas) was awarded the The Alan and Eileen Wingrove Endowment for Chemistry Scholars

Ms. Sarah Talamantez-Lyburn (Research Mentor: Dr. Mary Sajini Devadas) was selected as one of ten students to present at the Colonial Academic Alliance held at the College of William and Mary

Thomas Boise won an ACS – Maryland Chapter Student Travel Grant to present his work at the ACS meeting. Internally he was supported by FCSM and TOUR research grants to perform the project.

**Community Outreach**

Dr. Mary Sajini Devadas had two high school students Ms. Kathleen Miller and Ms. Elizabeth Baummer from Notre Dame Preparatory High School complete a Summer Research Internship as part of their WinScience program.

Dr. Mary Sajini Devadas has also developed a science lesson based on energy and nanoscience along with Dr. Deepika Menon in PAGS which is currently being implemented at TU.
The CIS department welcomes two new faculty – Behrooz Etesamipour and Jungkyo Rho. Behrooz has joined the department as a lecturer for 2016-17. He is an excellent teacher and his classes are primarily in the Information Technology program. Behrooz had a B.S. from University in Maryland- Baltimore County and a M.S. from Towson University and is currently a candidate in the D.Sc. Information Technology Program. Jungkyo Rho – Dr. Rho is a visiting scholar from Seokyeong University, Seoul, Korea. He works on distributed computing, human computer interaction, and software engineering. While at Towson Dr. Rho will be working with the several research groups in the department. Welcome!

Faculty Publications

Robert Hammell and doctoral student Allison Newcomb had their paper entitled “Effective Prioritization of Network Intrusion Alerts to Enhance Situation Awareness” accepted for presentation and publication as part of the upcoming IEEE Intelligence and Security Informatics Conference (ISI 2016) to be held 27-30 September 2016, in Tucson, AZ.

Robert Hammell and doctoral student Allison Newcomb had their paper entitled “FLUF: Fuzzy Logic Utility Framework to Support Computer Network Defense Decision Making” accepted for presentation and publication as part of the upcoming North American Fuzzy Information Processing Society Conference (NAFIPS 2016) to be held 31 October-4 November 2016, in El Paso, TX.

Robert Hammell and doctoral student Chuck Smith had their paper entitled “An Experimental Exploration of the Impact of Sensor-Level Packet Loss on Network Intrusion Detection” accepted for presentation and publication as part of the upcoming International Conference for Military Communications (MILCOM 2016) to be held 1-3 November 2016, in Baltimore, MD.

Robert Hammell and doctoral student Chuck Smith had their paper entitled “Proposal for Kelly Criterion-Inspired Lossy Network Compression for Network Intrusion Applications” accepted for presentation and publication as part of the upcoming Conference on Information Systems Applied Research (CONISAR 2016) to be held 6-9 November 2016, in Las Vegas, NV.


Joyram Chakraborty, Suranjan Chakraborty, Josh Dehlinger and Joseph Hertz (undergraduate student) had their paper entitled "Designing Video Games for the Blind – Results of an Empirical Study" accepted to appear as a Long Paper in the special section on "Inclusive Designing: Joining Usability, Accessibility, and Inclusion" of the international journal "Universal Access in the Information Society", published by Springer.

Joyram Chakraborty, Sujan Shrestha and Mona Mohamed (doctoral students) presented their paper entitled “A comparative pilot study of historical artifacts in a CAVE automatic virtual reality environment versus paper-based artifacts” at the 18th International Conference on Human-Computer Interaction with Mobile Devices and Services Adjunct held on September 6-9, 2016 in Florence, Italy.

Suranjan Chakraborty’s paper with Thomas Matheus of Northumbria University titled MULTIPLE DIMENSIONS OF POWER INFLUENCING KNOWLEDGE INTEGRATION IN SUPPLY CHAINS was published in R&D Management Journal.

**Faculty Publications**

Jonathan Lazar, Heidi Feng and Harry Hochheiser (formerly a professor at Towson University, now a professor at the University of Pittsburgh) submitted their chapters for their upcoming 2nd edition of the popular "Research Methods in Human-Computer Interaction" book, to be published by Elsevier/Morgan Kaufmann Publishers in April 2017.

Jinie Pak and Yeong-Tae Song had their paper entitled "Health Capability Maturity Model: Person-centered Approach in Personal Health Record System." Published in Americas Conference on Information Systems (AMCIS) 2016.


**Community Outreach**

Suranjan Chakraborty served in the Editorial board of the Journal of the Association for Information Systems.

Suranjan Chakraborty served as an Associate Editor for the Information Systems Development and Project Management track for the International Conference for Information Systems, 2016.

In August, Jonathan Lazar was a scholar-in-residence for a week at the Oslo and Akershus University of Applied Sciences in Oslo, Norway, where he gave presentations including, "Research Methods for Working with Participants with Disabilities" (for graduate students), and " How I Developed a Love for Human-Computer Interaction, Accessibility, and Inclusive Design" (for undergraduates).

Chuck Dierbach served as an ABET program evaluator of the computer science program of a major state university in the midwest in September.

Siddharth Kaza is serving on the ACM Joint Task force on Computing Education charged with publishing the guidelines on an undergraduate degree in Cybersecurity.
DEPARTMENT MATHEMATICS

CHAIRPERSON: DR. MICHAEL O’LEARY

Joining the Department of Mathematics as a full Professor and our new director of the Actuarial Science and Risk Management program is Dr. Min Deng, who comes to us from Maryville University where she managed their actuarial science program. The department also recruited three new assistant professors. Dr. Christopher Comwell is an expert in Knot Theory who comes to us from a postdoctoral position at Centre de Recherches Mathematiques. Dr. Melike Kara studies mathematics education, especially the area of hypothetical learning trajectories, and comes to us from a postdoctoral position at New York University. Dr. Vince Guingona’s research is in mathematical logic and its relationship to combinatorics and algebra, and comes to us after postdoctoral positions at Notre Dame, Ben Gunon, and Wesleyan. Ed Nolan joins the department as our newest Master Teacher; he has extensive experience in Maryland schools and in 2005 he won the Presidential Award for Excellence in Mathematics and Science Teaching. The department also welcomes three new lecturers, Dr. Seth Chart from the University of Victoria, Maureen Honeychuck from York College of Pennsylvania, and Cris Packard from Howard Community College.

Faculty Publications

Angel Kumchev’s paper “On the Waring-Goldbach problem for seventh and higher powers” (joint with T.D. Wooley) was accepted for publication by the Monatshefte fur Mathematik.


Diana Cheng and alum David Thompson will have an article published in the November 2016 issue of the Mathematics Teacher, a publication of the National Council of Teachers of Mathematics. Their manuscript is entitled, “From blueprints to labyrinths.”

Diana Cheng, Asli Sezen-Barrie (PAGS), Alexander Barrie (University of Colorado – Boulder), Timothy Akers (Morgan State University), and Kevin Peters (MSU) wrote a manuscript entitled, “Forces in the pairs death spiral: A mathematics and physics modeling activity.” This manuscript was accepted for publication in the North Carolina Council of Teachers of Mathematics journal, The Centroid.

Diana Cheng and Tetyana Berezovski (St. Joseph’s University) wrote an article entitled, "Modeling Figure Skating Upright Spins: A Secondary Geometry & Trigonometry Activity.” It was accepted for publication in the South Carolina Council of Teachers of Mathematics’ journal, the MathMate.

Coy L. May and Jay Zimmerman had their paper, “The Symmetric Genus of Large Odd Order Groups” accepted for publication by the Houston Journal of Mathematics.


Nathan McNew’s paper “Numbers divisible by a large shifted prime and large torsion subgroups of CM elliptic curves” (joint with P. Pollack and C. Pomerance) was accepted for publication by International Math Research Notices.

Nathan McNew’s paper “Infinitude of k-Lehmer numbers which are not Carmichael” (joint with T. Wright) was published in the International Journal of Number Theory.

Russell Hendel's chapter, "Leadership for Improving Student Success through Higher Cognitive Instruction," was accepted for publication pending final editorial review. The chapter is part of a book, "Comprehensive Problem-Solving and Skill Development for Next Generation Leaders," Dr. Ronald and Jennifer Styron editors, to be published by IGI publishing.
Presentations / Workshops

Angel Kumchev presented a talk on “Sums of powers of almost equal primes” to the Number Theory Seminar at Shandong University at Weihai (Weihai, China) during his visit to SDU-Weihai, July 6-11, 2016.

Angel Kumchev gave a series of lectures on “The role of sieves and exponential sums in the Waring–Goldbach problem” to the Number Theory Seminar at Shandong University (Jinan, China) during his visit to SDU, June 25-July 5, 2016.

In August 2016, Diana Cheng presented a workshop at the Bridges 2016: Mathematics, Music, Art, Architecture, Culture conference in Jyväskylä, Finland. The workshop was entitled, “Spinning Arms in Motion: Exploring Mathematics within the Art of Figure Skating.”

Gail Kaplan led 2 one week intensive Advanced Placement Summer Institutes in Maryland and Virginia for AP Calculus teachers from around the country.

Gail Kaplan attended the Advanced Placement Annual Conference in Anaheim, California in July. As a member of the Academic Assembly she was part of open meeting, leading one table in the discussions.

Gail Kaplan and Dr. Michael Krach led a one week Algebra Institute for Baltimore County teachers.

Jay Zimmerman presented his paper, “Portraits of Groups on Bordered Surfaces”, at the Bridges Conference in Finland on August 10, 2016.


Russell Hendel’s paper, “Proof and Generalization of the Simpson-Catalan-Tagiuri-Gould Identities,” was presented at the International Fibonacci Conference held in Caen, France in June 2016 and was submitted to the Proceedings for publications.


Nathan McNew presented a talk on “Numbers divisible by a large shifted prime” at the Combinatorial and Additive Number Theory Conference at the City University of New York, May 24-27, 2016.

Nathan McNew presented a talk on “Random Multiplicative Walks on the Integers Modulo n” at the meeting of the Canadian Number Theory Association held at the University of Calgary, Alberta June 20-24, 2016.
**Grants**

Angel Kumchev, Yunwei Cui and Xiaoyin Wang were awarded a $30,000 contract by Constellation Energy for an AY 2016-2017 Applied Math Lab project “Methodology for forecasting natural gas demand”. Nathan McNew (PI) and Angel Kumchev (co-PI) were awarded a $1,000 grant from the Number Theory Foundation to sponsor the First Mid-Atlantic Seminar On Numbers (MASON I).

Honi Bamberger and Diana Cheng were awarded $1000 from the Pepsi Foundation to expand a project with the Afya Public Charter School that they began in the last academic year. The title of the proposal is “Inspiring Middle School Students through STEM Education.” They will be providing workshops to middle school students attending the Afya Public Charter School, both at their school during an after-school program and on Towson University’s campus during a field trip day held in the spring 2017 semester.

**Student Achievements**

**Presentations**

Casee Callaghan presented “How taking care of polar bears involves math: Incorporating literature into fraction lessons” at the September 17th, 2016 Early Career Teaching Conference hosted by the Association of Maryland Mathematics Teacher Educators. Her faculty mentor helping her to prepare these presentations is Diana Cheng, who supervised her independent study project in Spring 2016.

**Community Outreach**

Angel Kumchev and Nathan McNew, jointly with John Webb and Cassandra Williams (James Madison University) are organizing the First Mid-Atlantic Seminar On Numbers (MASON I)—a regional research conference on number theory that is scheduled to take place at TU on October 29, 2016.

Dr. Gail Kaplan participated in the AP Calculus reading in Kansas City. During the week of the reading student examinations from around the world were evaluated.
Community Outreach

Dr. Gail Kaplan was invited a panelist in a national webinar for parents about the value of AP.

The Mathematics Education Club (MEC) is advised by faculty members Honi Bamberger, Diana Cheng, and Nicole Winner this academic year. The MEC will be hosting Dr. John W. Staley, Baltimore County Public School administrator, to speak on the Common Core State Standards – Mathematics / Standards for Mathematical Practice on September 21. The MEC is supported by the PepsiCo Foundation, which provides beverages for its meetings.

Nathan McNew was selected as a Project NExT (New Experiences in Teaching) Fellow for 2016-2017, and participated in the Project NExT program at Mathfest in Columbus Ohio, August 2-6, 2016.

Russell Hendel sent out four dozen letters of acknowledgement to the university, college and high school instructors who participated in the Greater New York Math Fair, held in Brooklyn New York on April 3, 2016. The Greater New York Math Fair is a friendly High School competition, in which students at the High School level from the greater New York area, meet and present math papers on research they have been doing. Russell Hendel is the coordinator of judges for this fair. Close to 100 students from a variety of High Schools in the New York area came and presented to about 50 judges who came from High Schools and Universities. The day climaxed with the awards ceremony in which students were awarded gold, silver and bronze medals.
Faculty Publications


Presentations / Workshops


H. Ali* (presenter) and J.M. Overduin, “Extra dimensions and violations of Lorentz symmetry,” poster, 7th Meeting on CPT and Lorentz Symmetry, Bloomington, IN, June 23 (2016)


Amy Williams attended the New Faculty Workshop for Chemistry Faculty, Cottrell Scholars Collaborative, August 2016.
Presentations / Workshops


Grants

Amy Williams was co-I on an NSF Major Research Instrumentation proposal entitled “MRI: Acquisition of a Field Emission Scanning Electron Microscope with STEM and EDS Capabilities for Interdisciplinary Research and Education at Towson University”. The proposal was funded through NSF’s Major Research Instrumentation program. PI Vonnie Shields (Towson University), Co-I’s Mary Sajini Devadas (Towson University), Vera Smolyaninova (Towson University), Rajeswari Kolagani (Towson University). ($530,545 to TU).


Wendy Nelson was a co-PI on an NSF proposal entitled “Collaborative Research: Constraining the temporal evolution of mantle plume contributions to magmatism in the Turkana Depression.” The project was funded through NSF’s GeoPRISMS program. Collaborators are Tyrone Rooney (PI, Michigan State), John Kappelman (co-PI, UT-Austin), and Barry Hanan (co-PI, San Diego State University). ($39,089 to TU).

Community Outreach

Vera Smolyaninova has become a member of Editorial Board of Scientific Reports (Nature Publishing Group).
Faculty Publications


Rohr, J., C.J. Salice, and R.M. Nisbet. 2016. The pros and cons of ecological risk assessment based on data from different levels of biological organization. Critical Reviews in Toxicology. Published online June 22, 2016.

Presentations / Workshops

Joel Moore gave an invited presentation entitled “Road salt and water quality” at the “Salt management in the Washington region: environmental and transportation perspectives” workshop sponsored by the Metropolitan Washington Council of Governments, Washington, DC. The presentation was based, in part, on research conducted in TU’s Urban Environmental Biogeochemistry Laboratory.

Chris Salice co-chaired a working group supported by NSF’s National Institute for Mathematical and Biological Synthesis (NIMBioS) focused on developing a mathematical modeling framework to predict effects of chemical stressors on ecosystem services. The weeklong working group brings together researchers from across the country and Europe.

Grants

Joel Moore is co–PI on a Chesapeake Bay Trust grant award for $199,992 along with Vanessa Beauchamp, Ryan Casey, and Chris Salice. The grant is entitled “Determining the effects of legacy sediment removal and floodplain reconnection on ecosystem function and nutrient export.”

This grant will fund 2 MS students, one from Biology/Environmental Science and one from Environmental Science.

Student Achievements

Publications

ENVS Graduate Student, Kasey Bolyard, successfully submitted a manuscript to Environmental Toxicology and Chemistry based on her M.S. thesis research:

Bolyard, K., Gresens, S., Sivey, J., and Salice, C. Are safeners safe? An assessment of the toxicity of benoxacor, mono-chlorinated benoxacor, S-metolachlor, and a mixture to Chironomus riparius within benthic microcosms.
Student Achievements

Presentations—Defenses

Over the summer, two ENVS M.S. students successfully defended their theses:

Kasey Bolyard “Are safeners safe? An assessment of the toxicity of benoxacor, mono-chlorinated benoxacor, S-metolachlor, and a mixture to Chironomus riparius within benthic microcosms”

Larry (Eddie) Meade “Seasonal variations of fine particulate matter derived from biogenic and anthropogenic sources”

And two ENVS MS student successfully defended their thesis proposals:

Darcy Bird “Major Ions in Urban Streams: A Look at Concentrations over Time and Across Land Cover/Use”

Matthew Wilfong “Performance of commercially available soil amendments for enhanced copper removal in bioretention media”

ENVS Graduate Student, Darcy Bird, is presenting some of her work at the upcoming GSA Meeting.


Darcy was also successful in obtaining travel support and received $500 from the Towson Graduate Student Association and $90 from the Geological Society of America and $350 from the ENVS program. Congratulations, Darcy!

Awards

ENVS Undergraduate Researcher, Veronica Pereira received a travel award from the Society of Environmental Toxicology and Chemistry for the upcoming conference in Orlando, FL.

ENVS M.S. Student, Laina Lockett received a travel award from the Society of Environmental Toxicology and Chemistry for the upcoming conference in Orlando, FL.

Community Outreach

Over the 10 week summer session, 12 Towson University students attended Urban Food Systems, a brand new Core 10 course offered through the Department of Health Science. This course provided students the opportunity to learn about the local Baltimore food system. Students discussed topics related to food production, distribution, access, and the environmental and health implications of our current food system. Students also completed 20 service-learning hours at one of two service-learning sites; the Towson University Urban Farm and Moveable Feast (www.mfeast.org). The intent of the service-learning was to immerse students in the local food system, allowing them to witness and participate in the topics and activities we discussed in class. Overall, students contributed over 200 service hours with organizations that work to improve access to healthy food.

Joel Moore presented on “Effects of road salt on groundwater and stream chemistry” at the Science Professionals Day for Baltimore County Public Schools. The talk was based, in part, on research conducted at the UEBL.
Faculty Publications

Zane May (former MB3 student), Omar Darwish (CIS) and Nadim Alkharouf (CIS\MB3), published a paper titled: “A searchable database for the genome of Phomopsis longicolla (isolate MSPL 10-6)” that appeared in the journal Bioinformation.

Student Achievements

Alec Ahearn investigated the effectiveness of some complex tertiary amine catalysts on the Baylis-Hillman reaction with Dr. Brunker (Chemistry).

John Biondo interned for professor Tami Imbierowicz, a biology professor at Harford Community College, and a TU Alumni. They measured the amount of Enterococci bacteria before and after rainfall, to use as an indicator of water quality based upon EPA guidelines. Study was done through the Chesapeake Bay Foundation (CBF). A press release on the findings can be found here: http://www.cbf.org/how-we-save-the-bay/in-our-communities/bacteria-testing-2016

Maresha Milyavsky worked with Dr. Renee Dickie (Biology) over the summer to develop a quantitative Methylene blue exclusion assay to assess the time course for re-epithelialization in the regenerating zebrafish fin and axolotl tail.

Jill Taylor interned at the National Institute on Drug Abuse in Baltimore in the lab of Dr. Marisela Morales (her mentor was Dr. David Barker). She conducted research to determine the functional role of the GABAergic and Glutamatergic projections from the Lateral Preoptic Area to the Lateral Habenula in mice. She used Optogenetic Stimulation of these projections and Real Time Place Conditioning to behaviorally test the mice.
The Towson University Center for STEM Excellence (TUCSE) is taking the lead on climate literacy. TUCSE began by developing two new activities for the Maryland Loaner Lab (MDLL) program. It’s a Gassy World! explores the connections between CO₂ and warming oceans, immersing students in the scientific practices of planning and conducting investigations and engaging in argument from evidence. Looking Backwards, Looking Forward (LBLF) allows students to explore how scientists use proxy data to learn about Earth’s past climates and why current changes in climate are of concern.

Each activity was piloted with groups of 20 middle and high school teachers, who received in-depth training on both the scientific content in each lab, as well as on the pedagogy of how to effectively engage students in the practices of science. Both activities will be published in future editions of the NSTA journal Science Scope, allowing TUSCE to share these activities with teachers across the nation.

Most recently, TUCSE collaborated with MADE CLEAR to increase climate literacy in the next generation of science teachers. On September 24, a group of pre-service teachers from Towson University took part in a day-long workshop that provided them with training in facilitating the It’s a Gassy World! activity in their future classrooms. A guest lecture by Dr. William Dennison from the University of Maryland Center for Environmental Science provided information on the scientific concepts covered in the lab, as well as the importance of effective communication in science. A select group of workshop participants will be given the opportunity to deliver the activity in a middle school classroom under the mentorship of an experienced classroom teacher. This experience is preparing Maryland’s future science teachers to hit the ground running when it comes to climate literacy when they begin teaching in their own classrooms.

This work has been a collaborative effort with input with funding provided by the NSF-sponsored Maryland and Delaware Climate Change Education Assessment and Research Initiative (www.madeclear.org). Dr. Jane Wolfson, a recently retired Biology professor from Towson University contributed substantially to the development and writing of the new activities. Dr. Asli Sezen-Barrie, a science education professor in the Physics, Astronomy, and Geosciences department at Towson, is researching the effectiveness of the new activities in middle school classrooms.

TUSCE is committed to continuing to increase climate literacy in both teachers and students. It’s a Gassy World! is currently being taught in the SciTech Student Learning Lab and climate literacy workshops for Maryland teachers will continue to be offered.
The Jess and Mildred Fisher College of Science & Mathematics

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