

COLLEGE OF NATURAL SCIENCE and MATHEMATICS

Minutes of Council of Chairs Meeting - April 17, 2017

A meeting of the Council of Chairs of the College of Natural Sciences and Mathematics was held on Monday, April 17, 2017. Stephen Addison presided, members present: Ginny Adams, Jeff Allender, Emre Celebi, Pat Desrochers, Carl Frederickson, Ramesh Garimella, Uma Garimella, and Brent Hill.

Agenda Items:

- Brandon Combs, Director of Assessment, introduced his office and new plans for assessment that will replace the current CIP's. He introduced chairs to the PAWS webpage and platform for documenting events and hopes to have new assessment plans developed by the end of the Fall 2017 semester.
- Dean Addison led a discussion on Start-Up Junkie and the Conductor workshops and asked chairs to encourage faculty to get involved. Discussion followed regarding policies on external funding and intellectual property if faculty do get involved with this project.
- Minutes from March 6, 2017 meeting approved with minor revisions.
- Jeff Allender, Chair of Geography, led a discussion on the development of Community College courses.

Other Items:

- Dean Addison informed council that one-year position decisions have been made and he will send out information to the Chairs.
- Dean Addison informed council that Higher Education is no longer under the Office of Personnel Management (OPM) and he expects Staff raises to go into effect July 1st and Faculty could get COLA and Equity starting January 1st.

Chair Reports:

Biology

Dr. Hill reported:

- Biology faculty and students presented at the 101st Arkansas Academy of Sciences meeting:
 - Dr. Kari Naylor had 2 undergraduates present posters.
 - Dr. Brent Hill had 2 undergraduates and 1 graduate student present posters.
 - Dr. Ben Rowley had 2 undergraduates present posters.
 - Dr. Sally Entekin had 3 undergraduates present posters – Ashton Brass and Billy Huggins won first place in Ecology Poster. Sally was the keynote speaker.
 - Graduate Students, Geoff Spooner and Stephanie Stoughton, won 2nd Place for Graduate Oral Presentation.

- Chris Robinson was awarded the best oral presentation in Biology.
- Dr. Sally Entrekin's student, Deion Everhardt was awarded a travel grant for the Society for Freshwater Science through the Instars program that supports minority students in freshwater science. He will be presenting at the upcoming Raleigh meeting. Also, Sally co-authored 3 new papers on the effects of Unconventional oil and Gas on aquatic ecosystems in the U.S.:
 - Unconventional natural gas development did not result in detectable changes in water chemistry (within the South Fork Little Red River), BJ Austin, E Scott, L Massey, MA Evans-White, S. Entrekin, BE Haggard. *Environmental Monitoring and Assessment* 189 (5), 209.
 - Unconventional oil and gas spills: Materials, volumes, and risks to surface waters in four states of the US. KO Maloney, S Baruch-Mordo, LA Patterson, JP Nicot, SA Entrekin, ...*Science of the Total Environment* 581, 369-377
 - Patterson, L.A., Kongschnik, K.E., Wiseman, H., Fargione, J., Maloney, K.O., Kiesecker, J., Nicot, J.P., Baruch-Mordo, Entrekin, S., Trainor, A., and Saiers, J.E., 2017. Unconventional Oil and Gas Spills: Risks, Mitigation Priorities, and State Reporting Requirements. *Environmental Science & Technology*.
- Dr. John Choinski: Resubmission of thesis work by past M.S. student, Harold Owiti, to the international journal, *Physiologia Plantarum*. The article is entitled, "Leaf ontogeny alters fatty acid desaturase and heat shock protein gene expression in *Gossypium hirsutum* and *G. barbadense* while strongly affecting thermotolerance."
- Reid Adams and Geoff Spooner published, "New Distributional Records of the Ohio Shrimp, *Macrobrachium ohione* in Arkansas", in the *Journal of the Arkansas Academy of Science*.
- Former M.S. student of Dr. Matt Gifford, Ian Clifton, had his first publication (from his thesis) posted as online early in the *Journal of Zoology*.
- Dr. Matt Gifford served on an NSF pre-proposal panel last week.
- Dr. Vicki McDonald: Funding request for a new migratory bird project has made it through all levels of review except final budget approval (where it can be axed, but not likely). This will begin after completion of current bird monitoring on Indiana hardwood wetlands, ca. July 2017. Title of new grant proposal: Habitat Use by Migratory Birds – Advancing Bioacoustical Monitoring Techniques for Determining Restoration Habitat Use By Birds During Spring Migration. Funding requested - \$63,469.34.

Chemistry

Dr. Pat Desrochers reported:

- Rachel Haislip was honored with an ACS Division of Analytical Chemistry Undergraduate Award. Rachel will be notified in October and is graduating in Spring 2018.
- This week we are interviewing our two finalists for the lab coordinator position, replacing Ben Scheuter who was only temporary.
- Kristin Dooley earned an AR Space Grant – "Determination of multicomponent aerosol optical properties" begins August 2017.
- Greg Naumiec and Lei Yang each earned URC awards.
- Greg Naumiec and Kristin Dooley each earned URC summer stipend awards.

- Bill Taylor and Melissa Kelley are faculty excellence award finalists.
- 25 students and 5 faculty attended ACS National Meeting in San Francisco, CA.
- Rick Tarkka was nominated for a student involvement award for his work with SGA.
- Tori Dunlap earned a summer award from INBRE – “Investigation of the Impace of Environment on PEP-19’s Conformational Ensemble.”
- Nathan Meredith was recognized for his Distinctive Growth in On-Ground Teaching through CTE participation. (Reception 4/20/17).
- Prince 201 is nearly ready for use as a wet research lab. Powers has to calibrate hood face velocity flow before handing over the system.

Computer Science

Dr. Emre Celebi reported:

- Sinan Kockara and Tansel Halic submitted a \$300K proposal to the NIH AREA program.
- Emre Celebi gave a colloquium speech entitled, “Eluding Local Minima in K-Means Clustering Using Hierarchical Initialization” in Baylor University’s Department of Computer Science.
- Vamsi Paruchuri and Emre Celebi took two programming teams composed of Computer Science junior/seniors to the Fifteenth Annual Consortium for Computing Sciences in Colleges Mid-South Conference (CCSC: Mid-South 2017), held in Batesville, AR.
- Emre Celebi co-organized a challenge entitled, “Skin Lesion Analysis Towards Melanoma Detection”, at the IEEE International Symposium on Biomedical Imaging (ISBI 2017), held in Melbourne, Australia. The challenge attracted dozens of submissions from top researchers around the world.

Geography

Dr. Jeff Allender reported:

- Brooks Pearson presented, “Evaluating the Effects of CCTV Cameras on Crime Distribution in Baltimore City”, at the Southwest Decision Sciences Institute Annual Conference in Little Rock, AR.
- Michael Yoder present, “Cargo Transport and Economic Development in the Chihuahua-Albuquerque Corridor: An Emerging Binational “Megapolitan” Area?”, at the Western Hemisphere Trade Conference in Laredo, TX.
- Will Flatley presented, “Linking Climate Change, Wildfire, and Forest Management to the Conservation of Water in the Southwest”, at the American Association of Geographers annual conference in Boston, MA. He also completed the CTE Recognition for Achievement in Teaching Excellence program.
- Steve O’Connell presented, “Second Homes, Recreation Development, and the Creation of Leisure Landscapes” at the American Association of Geographers annual conference in Boston, MA.
- Matt Connolly co-presented, “A Preliminary Analysis of the Role of Fire Ants in Grapevine Health”, at the American Association of Geographers annual conference in Boston, MA. He also co-paneled a session, “The Academic Job Market for Geographers: Strategies for Improving Career Preparation.

- Matt Connolly presented, “Beach Erosion Trends and Community Concerns along Treasure Beach, South Coast Jamaica”, at the American Association of Geographers annual conference in Boston, MA.
- Ellen Hostetter organized and chaired a session: Landscape Backstories, and she gave a paper in that session, “Automobile Inspections and Stop Signs: A Backstory from New Jersey’s Department of Motor Vehicles”, at the American Association of Geographers annual conference in Boston, MA.
 - She also organized and ran a paper session on Material Culture.

Mathematics

Dr. Ramesh Garimella reported:

- 2017 Student Awards:
 - Cyrus Koch, A BS STEMteach Applied Mathematics student received the 2017 O.L. Hughes Award. The award is annually presented to an outstanding senior mathematics major based on their math achievement, GPA, and leadership. It is given in memory of late Professor O.L. Hughes, who was the chair of the Math Department at UCA from 1945 to 1967. Cyrus, who was a Noyce Scholar at UCA, has accepted a teaching position at North Garland High School in Garland, TX.
 - Andrea Weaver, a BS STEMteach Applied Mathematics student received the 2017 Dorothy Long Award, annually presented to an outstanding female junior. The award is given in honor of late Professor Dorothy Long, who was a mathematics faculty member and the Dean of Women at UCA in the 60’s. Andrea received a Noyce Scholarship last year and presented, “Nonlinear Elliptical PDEs” at the 2017 AMS/MAA joint Mathematics Meeting. She attended the 2017 Oklahoma-Arkansas MAA Section Meeting and participated in the Math Jeopardy Contest. Also, Andrea is a recipient of a SURF grant and will begin research on “Nonclassical Symmetries of Dispersion Equations” this summer with Dr. Danny Arrigo.
 - Katie Burden, an MA Mathematics Education student, received the 2017 Outstanding Graduate Student Award. She has worked with Dr. Jason Martin on her thesis, “Case Studies of Virtual Manipulative and Static Derivative Images” and presented her research at the 2017 Oklahoma-Arkansas MAA Section Meeting. Beginning in Fall 2017, Katie will teach at Little Rock Central High School.
- STEM Fair with the Conway Symphony – On March 11th, the Math Club and Ms. Loi Booher, Math Lecturer, hosted a booth at the STEM Fair before the Conway Symphony’s presentation of The Planets. Emily Tran, Media Tech for the Math Club, organized four other students to present mathematical curiosities and games to the local middle school students.
- Faculty and Student presentations during Spring 2017:
 - MAA OK-AR Sectional Meeting – The Math Department sent three faculty members (Drs. Ramesh Garimella, Jason Martin, and Jeffrey Beyerl) and six students (Azaryah Wilson, Connor Wilson, Lindsey Hazeslip, Andie Weaver, Katie Burden, and Kayla Waters) to the Mathematical Association of America sectional meetings on April 6-8th at the University of Oklahoma. Dr. Garimella chaired the meetings. The undergraduate students competed in Math Jeopardy and the Integration Bee. The competition team did not take home any prizes, but Azaryah came extremely close having lasted 7 out of the 9 rounds in the

Integration Bee. The MA graduate students, Ms. Katie Burden and Ms. Kayla Waters (both mentored by Dr. Martin) and Dr. Beyerl presented talks.

- Dr. Nesrin Sahin and Ms. Loi Booher attended 2017 NCTM Annual Meetings in San Antonio, TX between April 5-8th.
- Dr. Jeff Beyerl, Assistant Professor of Math, presented at the 48th Southeastern International Conference on Combinatorics, Graph Theory & Computing – held on March 6-10th at the Florida Atlantic University. Cameron Sharp, an undergraduate math major, mentored by Dr. Beyerl, also presented at the conference.
- Drs. Jimmy Fetterly, Carolyn Pinchback, and Nesrin Sahin presented papers at the 44th Annual Conference of the Research Council of Mathematics Learning held in Fort Worth, TX between March 2-4th.
- Dr. Jason Martin presented at the 20th Annual Research in Undergraduate Education Conference in San Diego.
- Hiring – Dr. Kansas Conrady of University of Oklahoma has accepted the second tenure-track position in Math Education. Including this position, this spring, the Math Department has filled three tenured track positions – one in numerical analysis and two in mathematics education. The other two faculty members are Dr. Todd Abel of Appalachian State University (Math Ed) and Mr. Yinlin Dong, a doctoral student in numerical analysis at University of Texas Arlington, expected to finish his Ph.D. by the end of this spring.

Physics

Dr. Carl Frederickson reported:

- Drs. Frederickson, Mehta, Slaton, Menon, and Walker along with 8 students; Brandon Miller, Zachary Brawley, Russell Jeffery, Nicholas Scoles, Hayley Heacox, Jordan Burajas, Sidney Freyaldenhoven, and Jeffery Anderson, attended the APS March meeting in New Orleans, LA, March 13-16th. Brandon Miller and Zachary Brawley gave oral presentations and both received outstanding presenter awards for their sessions. The rest of the students presented research posters:
 - “Conservation laws for waves on a string from isometries and conformal isometries of the Minkowski metric,” B. Miller, B. Menon
 - “Characteristics of Au nanowire arrays on GaAs photodetectors for optimal optical enhancement at near-infrared wavelengths,” Z. Brawley, S. Bauman, G. Abbey, A. Darweesh, A. Nusir, O. Manasreh, J. Herzog
 - “Student-Built High-Altitude Balloon Payload with Sensor Array and Flight Computer,” R. Jeffery, W. Slaton
 - “Design and Development of an Acoustic Field Scanner,” N. Scoles, C. Frederickson
 - “Effect of Hind-Lim Suspension and X-Ray Irradiation on the Mechanical and Chemical Properties of Rat Femur and Tibia Bones,” H. Heacox, J. Barajas, S. Freyaldenhoven, B. Hill, R. Mehta, M. Dobrestov, P. Chowdhury
 - “Using a Photon Beam for Thermal Nociceptive Threshold Experiments,” J. Anderson, S. Sherwood, A. Walker
- Zach Brawley, a graduating senior physics major, has published a paper along with his mentors and collaborators at UA Fayetteville. This is research that he started in a summer research program and continued as his senior capstone.

- Zachary T. Brawley; Stephen J. Bauman; Grant P. Abbey; Ahmad A Darweesh; Ahmad I Nusir, et al. “Modeling and optimization of Au-GaAs plasmonic nanoslit array structures for enhanced near-infrared photodetector applications”, J. Nanophoton 11(1), 016017 (March 23, 2017); <http://dx.doi.org/10.1117/1.JNP.11.016017>
- 31 UCA students presented 21 research posters at the Arkansas Academy of Science annual meeting, April 8th. There were 8 faculty mentors working with these students.
 - Charles Bertram won 1st Place Poster in Physics and Garrot Granholm won 2nd Place Poster in Physics.

STEM Institute

Dr. Uma Garimella reported:

- Received NCLB \$57,780 grant. “Blending Mathematics and Science: Grade 5-7”. Jerry Mimms, Charles Watson and Debbie Dailey are the faculty working with STEM Institute.
- STEM Leadership for Girls: hosted on March 8 in Brewer Hegeman– We had 165 students from several school districts. Tim Griffin, Wal-Mart representative and several local industries presented.
- Working with Dr. Ginny Adams to use grant funds to support GPS that is on April 28, 2017.
- Conferences
 - Presented at the SITE Conference, March 8, 2017
 - Presented at the National Science Teachers Association, March 30-April 2, Los Angeles.
 - Attended MAA regional meeting at Norman OK
- Collaboration with College of Education:
 - Working with Jeff Whittington to add STEM track to their Advanced Studies in Teacher Leadership (ASTL) at the elementary level. No new courses are added but trying to cross-list SCI 4410/5410 to satisfy the graduate requirement.
- PD and class support:
 - Conducted:
 - Middle School PD Designing lesson to integrate Engineering and Science (45 participants Number -down due to storm and school closures)
 - Elementary PD Designing lesson to integrate Engineering and Science (45 participants)
- Worked with Mayflower Elementary Engineering fair through development, planning, judging
- Working with state science specialist (Both coop and STEM Centers) to development of state and area PD for middle and high school teachers.
- New projects/Ideas:
 - Increase support to UCA faculty by providing “Broader Impact” section in writing state and federal (NSF/NIH//DOE) proposals.
 - Offer “Content Boot Camp” for Elementary, middle and high school teachers by collaborating with UCA faculty.

Development Officer

Aimee Poynter reported:

- Thank you to everyone who helped with the Wilbur Owen reception.
- Will be traveling to Kentucky the 2nd week in May and Houston the 3rd week in May. Let her know if there is anyone you would like her to visit.