

COLLEGE OF NATURAL SCIENCE and MATHEMATICS

Minutes of Council of Chairs Meeting - November 21, 2016

A meeting of the Council of Chairs of the College of Natural Sciences and Mathematics was held on Monday, November 21, 2016. Stephen Addison presided, members present: Ginny Adams, Jeff Allender, Emre Celebi, Pat Desrochers, Carl Frederickson, Ramesh Garimella, Uma Garimella, and Brent Hill. Guests: Aimee Poynter - CNSM Development Officer.

Agenda Items:

- Minutes from October 17, 2016 approved with minor adjustments.
- Aimee Poynter announced that Micah Abrams has pledged \$75,000 over the next five years to the Advancement Undergraduate Research Scholarship (AURS) fund. She would like to start recognizing and cultivating alumni relations by forming a committee to work on plans for Homecoming week and by publishing a newsletter twice a year.
- Dean Addison led a discussion on the completion of the Risk Assessment Forms and how they fit into the internal audit process.
- Dean Addison reminded chairs to look at both freshman enrollment and upper division course needs when planning for future staffing needs.
- Dean Addison asked chairs to let him know of any funding issues related to adding additional courses for the spring semester.
- Dean Addison reminded chairs that with Beryline Temples leaving in December it is very important to get grant proposals submitted early to allow for the expected delays in Sponsored Programs as they transition to new staff. He also announced that Steve Beal is also leaving in December so IRB's and IACUC's may also be delayed. Discussion followed.
- Dean Addison reported that the HLC visit went well and we are expecting a good report.
- Dean Addison encouraged chairs to attend the two upcoming gift announcements:
 - Southwestern Energy Endowed Fund will be announced on December 5th at 2 p.m. in CCCS 112. This is a \$300,000 gift to support research in Geography, Physics, and Environmental Science and will fund travel, materials, and supplies.
 - Charles D. Morgan gift for Computer Science will be on December 7th at 10 a.m. at Blue Sail Coffee.
- Brent Hill led a discussion on changes to the Continuous Enrollment Policy and would like to develop a proposal to support the need for students to maintain an active student status even if not enrolled in the summer so they have access to UCA resources.

Chair Reports:

Biology

Dr. Hill reported:

- UCA hosted the state Envirothon on November 20-21st. Laurie Warren organized the event and there were 11 teams this year.
- Dr. Nita Puri has accepted the Neuroscience position in Biology and will start in January.

Chemistry

Dr. Pat Desrochers reported:

- Two candidates were selected for campus interviews for the TT-Physical Chemist position. Both have an emphasis in computational chemistry. Campus interviews are set for the week before finals.
- Melissa Kelley, and Tori Dunlap and six of their students attended the AR INBRE meeting in Fayetteville, October 21-22, 2016. Dr. Kelley was an invited faculty speaker. Her talk was titled “Wisdom from a Fortune Cookie: Retinoid Regulation of Cellular Adhesion and Proliferation in K562 Cells”. Dr. Kelley’s students, Madison Lee, Tori Niedzwiedz, and Rachel Mayo presented a poster entitled “Retinoic Acid Receptor Gamma Reciprocally Regulates Cellular Adhesion and Proliferation in K562 Cells” (this poster earned an Honorable Mention). Dr. Dunlap’s student, Danica Ordonez, presented a talk “Conformational Protein Ensemble of the Calmodulin Ligand PEP-19”. Additional student coauthors were Nick Rathke and Christian Mitchell.
- The department participated in a joint Laney-Manion/Prince fire drill on November 10th. This was the first full-scale test of the joint fire alarm system recently installed across the Laney-Manion/Prince complex.
- Only two UCA posters for STEM Posters at the Capitol, second call sent out November 21st. Need more posters from our students.

Computer Science

Dr. Emre Celebi reported:

- Mahmut Karakaya, Bernard Chen, and Victor Sheng each submitted a grant proposal to the NSF.
- Sinan Kockara, Tansel Halic, and Emre Celebi submitted a joint grant proposal to the Harry J. Lloyd Charitable Trust.
- Mahmut Karakaya received \$7,653 research funding from the University Research Council.
- Mahmut Karakaya published a paper in the 15th International Conference of the Biometrics Special Interest Group (BIOSIG 2016).
- Vamsi Paruchuri published a paper in the Journal of Computer Science Applications and Information.
- Vamsi Paruchuri and Yu Sun’s paper has been accepted for publication in the Journal of Communication and Computer.

- Bernard Chen's paper has been accepted for publication in the proceedings of the Southwest Decision Sciences 48th Annual Meeting (SWDSI 2017). This paper is co-authored by two graduate students.
- Tansel Halic and Sinan Kockara's paper has been accepted to the International Journal of Medical Robotics and Computer Assisted Surgery. This paper is co-authored by two undergraduates and one graduate student.
- Tansel Halic has been invited to serve on the editorial boards of two journals: Insights in Biomedical Engineering and Journal of Surgery & Patient Care.
- Tansel Halic received a grant as a Co-PI from the NIH. The UCA budget will be \$149,540.
- Yu Sun and a graduate student presented two papers in the International Conference on Intelligent Automation and Robotics (ICIAR 2016).
- Two of Yu Sun's undergraduate students gave a chalk talk at the CNSM Student Research Seminar.
- Karen Thessing, Yu Sun and her research students organized a science night at the Bob Courtway Middle School.
- ABET commissioner Chenyi Hu led a team visit a CS program at a Research I University for its ABET reaccreditation.
- Sinan Kockara received a \$70,000 grant from Rock-Pond Solutions.
- Sinan Kockara, Tansel Halic, and their students published a paper in the journal of BMC Bioinformatics.
- Emre Celebi's paper has been accepted for publication in the proceedings of the 2016 IEEE International Conference on Big Data (IEEE BigData 2016). This project was led by researchers from Japan.
- Emre Celebi's paper has been published in the journal of Computer Vision and Image Understanding. The lead author of this paper is a PhD student from Portugal.

Geography

Dr. Jeff Allender reported:

- ESRI, the world's largest GIS software company, announced a national competition for high school and middle school students, and opened the announcement with: "In the spring of 2016, Minnesota and Arkansas each ran successful in-state ArcGIS Online competitions." This referenced the contest that Dr. Steve O'Connell had developed and ran and will run again next spring. Arkansas is also mentioned on their website: <http://esriurl.com/agoschoolcomp2017>.
- Steve O'Connell was also referenced and interviewed in an article in the October 28th edition of NW Democrat Gazette: *Sonora student maps haunted sites in Arkansas*. The young man featured in the article was one of the finalists of the State National Geographic Bee last spring that we host on our campus.
- Steve O'Connell presented a session at the Arkansas Curriculum Conference on November 5th titled: *Interactive Student Created Maps using ArcGIS*.
- Steve O'Connell and Jeff Allender presented a session at the Arkansas Curriculum Conference on November 5th titled: *Connecting Current Events to Arkansas using Google Earth*.
- Jeff Allender presented two sessions at the Arkansas Curriculum Conference on November 4-5th titled: *Understanding the Physical/Geographic Regions of Arkansas*.

- At the Southwest American Association of Geography conference in Denton, TX:
 - Dr. Matthew Connolly chaired the Graduate Student Paper Competition and presented a poster: *Modeling Land Acquisition Priorities for Drinking Water Protection in a Peri-urban Watershed Using Multi-Criteria Decision Analysis and GIS.*
 - Dr. Stephen O'Connell chaired a session on Parks and Recreation and presented a paper: *What Makes a Park? Landscapes of Success and Failure in National Park Service Site Proposals.*
 - Dr. Will Flatley presented a paper: *Are Historical Fire Regimes Compatible with Future Climate? Implications for Forest Restoration at the Grand Canyon.*
 - Dr. Michael Yoder chaired a session on Human Geography and presented a paper: *Inland Ports of Mexico and the Geography of Intermodal Shipping.*
 - Geography major, Margo Jordan, presented a poster: *Strong Mayor or City Manager? Trends of the United States vs Arkansas.*
 - Geography major, Will Dane, presented a poster: *Mixed-Use Planning Through the Eyes of Conway's Top Restaurants.*
 - Geography major, Isaac Simms, presented a poster: *The Varying Effects of City Government Actions on Urban Planning.*

Mathematics

Dr. Ramesh Garimella reported:

- Ms. Andrea Weaver, Applied Math major, and Dr. Danny Arrigo, Professor of Mathematics, will both give presentations in January at the AMS/MAA Joint Math Conference in Atlanta, GA. Ms. Weaver's poster will be on "Elliptical Nonlinear PDE" and Dr. Arrigo's presentation will be "Nonclassical Symmetries of a Nonlinear Diffusion Equations and a Equivalent System."
- Dr. James Fetterly, Assistant Professor of Math, along with math undergraduate students, Brett Gonser and Lucas McEntire gave presentations at the Arkansas Curriculum Conference (ACC) on November 3rd. The titles of the presentations were "Fibonacci Freestyle" and "Pathways to Pythagoras".
- On October 28th, Dr. Charles Watson, Associate Professor of Mathematics, gave a "Taskforce Report" at the Arkansas Pathway Conference held in Little Rock. Earlier this month, Dr. Watson attended a "Multi Math Pathways" seminar at the University of Texas in San Antonio, TX.
- Dr. Jimmy Fetterly, Assistant Professor of Mathematics, and Dr. Long Le, Associate Professor of Mathematics, presented a half-day workshop, Algebra – Connecting Concepts on November 5th for 20 middle and high school teachers. The workshop was part of a \$6,740 MSP grant received by the UCA STEM Institute. Dr. Uma Garimella is the PI of the grant and Dr. Ramesh Garimella is the Co-PI.
- Dr. Carolyn Pinchback, Professor of Mathematics, gave a presentation at the Arkansas Reading Association Literacy Conference in Little Rock on November 17th.
- The third annual Calculus Tournament was held on November 17th from 4-5:30 in the Math Resource Center of the Department of Mathematics. Eleven teams, each with at most 3 students, competed in the tournament to solve eighteen calculus problems. Dr. Jeff Beyerl, Math Club Faculty Advisor, selected the problems ranging from the history of calculus to differentiation and

integration to applications of calculus. The winning team members – Lindsey Hazeslip, Azaryah Wilson, and Connor Wilson – each received a gift certificate for \$15. Plans are underway to select a couple of teams to represent UCA at the Math Jeopardy Contest at the Oklahoma-Arkansas Sectional Meetings of the Mathematical Association of America to be held at University of Oklahoma in Spring 2017.

Physics

Dr. Carl Frederickson reported:

- Zachery Brawley presented his summer REU and Senior Capstone research at the Gulf Coast Undergraduates Research Symposium held at Rice University October 22. The title of his presentation was “Structural characteristics of Au-GaAs nanostructures for increased plasmonic optical enhancement.” His research advisor at UA Fayetteville is Dr. Joseph B. Herzog. There were 30 other students from around the world presenting at the symposium.
- Drs. Azida Walker and Rahul Mehta presented papers during the 2016 Radiation Research Meeting in Walkoloa Village, Hawaii, October 16 through 19. Dr. Walker presented “Neutron Activation Analysis to study the effects of radiation at the cellular and molecular level,” Azida Walker, Rahul Mehta, Jeremy Jacobs. Dr. Mehta presented “Effect of Space-like Radiation and Simulated Microgravity on Mechanical properties of Rat Bones,” Rahul Mehta, Hayley Heacox, Lawrence M. Benzmilller, Azida Walker, Brent Hill, Maxim Dobretsov, Parimal Chowdhury and “Simulated Microgravity Perturbs Cytoskeletal and Cellular Signaling Machinery in Mammalian Cells,” Nawab Ali, K. Bryan White, Bukola Odeniyi, Rahul Mehta, Brent Hill and Parimal Chowdhury.
- Successful Merit Badge University was held on Saturday November 12th. Three faculty helped provide provide merit badge classes. From Physics Will Slaton worked with 12 boys on the programming merit badge, Balraj Menon worked with 10 boys on the robotics merit badge, and Greg Naumiec worked with 7 boys on the chemistry merit badge.
- Ashley Hicks attended the new physics faculty workshop November 17-20 in College Park, Maryland. The workshop is organized annually by the American Association of Physics Teachers, the American Institute of Physics, the American Physical Society, and the American Astronomical Society. It is funded by the NSF.

STEM Institute

Dr. Uma Garimella reported:

- Grants
 - Year 2 renewal MSP - \$122,167
 - Submitted: 3 grant proposals (2 for STEM Leadership for Girls) and one will be submitted tomorrow.
- Trainings offered
 - Computer Science Training:
 - Working with Dean’s office, STEM Institute is offering several statewide trainings to middle school teachers to incorporate computer programing into math, science and literacy lessons. We are offering four conferences at each corner of the state.

- Great River Coop, Forrest City: November 14-15
 - Henderson State STEM Center: December 5-6
 - UA Monticello: December 8-9
 - Training of Trainers on UCA campus – December 19-21
- Robotics for Kids: November 19th. Presented by Dr. Yu Sun and her group. We had 34 students, which is the highest number of students this time. New activity on programming drone was presented. Kids had fun on learning programming with Drone, in addition to other robots.
- Conference Presentations: 7 presentations at four conferences of total.
 - Arkansas Curriculum Conference Presentation:
 - Making Instructional Changes by Analyzing Student Work: Cara Cates, Kim Hughes and Sarah Burnett: Analyzing student work using a protocol that was created to use in MDC and can be extended to everyday use. This is collaboration between UCA, ATU and Archford.
 - Probability and Designer Baby: Belinda Robertson and Umadevi Garimella. An integration of Math and science unit developed through MSP grant
 - NGSS and Integrating Writing into STEM: Shoudong Feng, Umadevi Garimella and Carolyn Pinchback. Writing in content areas. A module developed through MSP grant.
 - Get to the Point! Observations to Reasoning: A K-4 Pathway Series. Collaborative work: Greg Wertenberger/Henderson State University, Annette Brown/Dawson ESC, Sharon McKinney/UCA STEM and Virginia Rhame/NWA ESC
 - Mid-South Educational Research Association (MSERA) Conference: NGSS and Writing: Initial Findings of a Teacher Survey from Year 3 of a STEM Professional Development Program Shoudong Feng, Umadevi Garimella, Carolyn Pinchback, University of Central Arkansas
 - National Biology Teachers Association (NABT): Temperature Conversions: Explaining $y=mx+b$: Umadevi Garimella
 - Arkansas Reading Association (ARA) Literacy Conference: Integrating writing into content areas: Shoudong Feng, Umadevi Garimella and Carolyn Pinchback
- Cara Cates – Math Specialist:
 - Named to an AAML (Arkansas Association of Math Leaders) committee to partner with NCSM (National Council of Supervisors of Math) to bring math coaching PD to Arkansas for all Arkansas teacher leaders, coaches, facilitators, and specialists, to be hosted at UCA.
 - Leading the Vision project for school districts: Provided math vision training to 6 school districts. Will be providing two more days of learning to complete the vision writing process and present to all stakeholders in the districts. Presented our district vision PD to the state math specialists and started the process of crafting a vision statement and goals for the math specialists. This is a continual project.
 - Asked to be part of the vision leadership team for the ADE PD Unit (Math, Science, Literacy). Created the data collection form for the whole unit that will aide in the creation of the PD Unit Vision.

- Follow-up of NCLB grant class visits - NCLB RTOP observations of all 19 participants, about 10 different schools across 8th-12th grades. Most of the teachers are implementing the strategies and content presented in the project.
- Sharon McKinney – Science Specialist
 - Conducted 2-one day Training: Grasping Phenomenal Science: She trained 44 teachers
 - She is selected to be the Team Leader to develop summer state initiated professional development trainings.
 - School support – 70% are UCA graduates
 - She is now the lead teacher for presenting the Project Lead The Way program
- Future plans:
 - Need help to host half-a -day “Hour of Coding” session on our campus. We would like to open it to UCA faculty/staff and also to general public of Conway.
 - December 8th or 9th