

**SCHOOL OF SCIENCE & ENGINEERING**  
**Engineering, Computer Science, Physics, and Mathematics**  
**Department**  
**Annual Year End Report**  
**2010-2011**

**John E. Matsson, Ph.D.**  
**Chairman, Engineering, Computer Science, Physics, and Mathematics**  
**Department**

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Brief Executive Summary

Dr. Xiaomin Ma received an NSF grant for collaborative research with Professor Trivedi at Duke University. The project title of the grant is “Analytic Modeling and Enhancement of Vehicular Ad Hoc Networks for Safety Critical Applications”. Dr. Ma was also selected as Scholar of the Year at ORU. Seven engineering students graduated this year with B.S.E. degrees and three students with B.S. degrees. Three computer science students, three mathematics student, and two mathematics education students graduated, all with B.S. degrees.

Executive Bullet Points

- Dr. Eland introduced a new iPhone Application Development course.
- Dr. Lang published the article “Chemistry in Second Life. Part 1. A world of visualization”. Andrew S.I.D. Lang and Jean-Claude Bradley (2011). Chemistry in Australia, May 2011. Royal Australian Chemical Institute.
- Dr. Lang also published “Collaboration Using Open Notebook Science in Academia”, Jean-Claude Bradley, Andrew S.I.D. Lang, Steve Koch, and Cameron Neylon (2011). In: Collaborative Computational Technologies for Biomedical Research. Edited by Sean Ekins, Maggie A.Z. Hupcey, and Antony J. Williams. Wiley. ISBN 13: 978-0470638033.
- Dr. Leland served as an Associate Editor for the refereed journal Multidimensional Systems and Signal Processing.
- Dr. Ma published “Reconsider Broadcast Packet Reception Rates in One-Dimensional MANETs.”, Xiaomin Ma, J. Zhang, and T. Wu, IEEE GLOBECOM 10, Dec. 6-10, 2010, Miami.
- Dr. Ma also published ”Performance Evaluation for DSRC Vehicular Safety Communication: A Semi-Markov Process Approach.”, Xiaoyan Yin, Xiaomin Ma, and Kishor Trivedi, The Fourth International Conference on Communication Theory, Reliability, and Quality of Service, April 16-17, 2011.

## **Faculty Accomplishments**

### **Professional Activities: Research, Grants, Publications, Meetings, and Recognition**

#### **Mr. Robin Akbar, Assistant Professor**

1. Store keeper for Engineering and Physics Labs.

#### **Dr. Vincent Dimiceli, Associate Professor**

1. Unpublished paper titled *Estimation of Black Globe Temperature for Calculation of the Wet Bulb Globe Temperature Index*, lead author with Steve Amburn (steve.amburn@noaa.gov), and Steven F. Piltz ([steven.piltz@noaa.gov](mailto:steven.piltz@noaa.gov)) Submitted for publication January, 2011.
2. Unpublished paper titled *Near Term, Probabilistic Convective Warnings A Concept*, co- author with Steve Amburn (steve.amburn@noaa.gov), and Steven F. Piltz (steven.piltz@noaa.gov).

#### **Dr. Dave Eland, Professor**

1. We took two programming teams to the ACM programming contest this year. Details are on the following web page: <http://lxsrv7.oru.edu/~daveland/s11/contest/acmcontest.html>
2. The new iPhone Application Development course was well received by the students.

#### **Dr. Elena Gregg, Assistant Professor**

1. I taught 2 classes "Physics 1" with Lab, 2 classes "Physics 2" with Lab, "Thermodynamics", helped with "Introduction to Engineering" class.
2. Worked in Radiation Safety Committee.
3. Attended 12 different workshops and seminars at ORU (Brown Bags, Smart Board, Search Engines, Moodle), 25 web seminars provided by McGraw Hill, Cengage, Wiley Publishers, and ABET.
4. Attended 2 days Governor's Conference on Developmental Disabilities.
5. Attended Women In Science Conference in Oklahoma City (February 8, 2011)
6. Collected and send 2 containers with humanitarian Aid to Ukraine (Simferopol Baptist Church, and Donetsk Christian University).
7. Volunteered at "Christ for Humanity", YMCA, DVIS, Discovery Bible Fellowship Church, Global Alliance Association.
8. Helped to organized and participated in "Mad Science" 2 days camp for Discovery Bible Fellowship Church, Collinsville (July 2010).
9. Together with Dr. Ablin (chemistry department gave science demonstrations in Clinton elementary and Marshall elementary schools -1 session.

### **Dr. Dominic Halsmer, Professor**

1. Served as Dean of the ORU College of Science and Engineering
2. Taught the five-year-olds Children's Church class at Believers Church
3. Participated in several ORU Intramural athletic events including ultimate, volleyball, and basketball
4. Served as judge for the ORUEF Chess Tournament in May
5. Exercised regularly with students, faculty and staff on campus at lunchtime
6. Guest lectured on light for Darlene Gaskill's art class in Fall & Spring
7. Guest lectured for Philosophy of Science class in Spring
8. Served as a representative to the Higher Education Forum
9. Guest lectured for Apologetics class in the Spring
10. Served on the Institutional Improvement and Student Learning Committee
11. Kept statistics at our daughter's NOAH Jaguars basketball games
12. Participated in Faculty vs. Freshmen Basketball games at the AC during New Student Orientation in the Fall
13. Wrote several recommendation letters for various students
14. Enjoyed the Faculty Retreat with my family
15. Served on the Worldview Committee
16. Regularly attended and led Faculty Early Morning Prayer Group
17. Regularly attended monthly "Thinklings" meetings of ORU faculty interested in writing in the area of science and faith
18. Attended scholar's luncheon at the Hilton for Fall and Spring College Weekends.
19. Placed 2nd at the ORU Spring Fun Run (2 mile) with a time of 11:27
20. Directed an Honors Research Fellowship (Jessica Fitzgerald, Ben Hase, Sean McDonough, Taylor Tryon) to study the role of God as engineer (Phase IV – The Role of Metaphysical Considerations in Affordance-based Reverse Engineering of Complex Natural Systems with Possible Corruption)
21. Plan to submit a proposal for an Honors Research Fellowship to study the role of God as engineer (Phase V – The Role of Affordance-based Reverse Engineering of Complex Natural Systems in Quantifying the Concept of Design)
22. Organized and led monthly meetings of the Science and Engineering Student Advisory Council, typically in our home
23. Attended various Tulsa Metro Chamber events
24. Served on the Safety and Security Committee
25. Served on the Board of the DaVinci Institute
26. Assisted in the development of the Trustees Reports for the Fall Trustees Meeting
27. Highlighted the College of Science and Engineering at the Fall Trustees Meeting
28. Attended Senior Honor Students Medallion Ceremony on April 29<sup>th</sup>
29. Attended the HPER, Behavioral Sciences, and Engineering & Physics, Biology, Chemistry, and Math & Computer Science Hooding Ceremonies on May 1<sup>st</sup>
30. Coauthored three papers with five research students (Jessica Fitzgerald, Ben Hase, Sean McDonough, Taylor Tryon, and Kyle Hanson)
31. Interviewed several students for the Whole Person Scholarship competition.
32. Conducted the first annual ORU Homecoming 5k Run
33. Successfully completed graduate courses in Systematic Theology I & II, Church History I & II, and New Testament Synthesis

34. Assisting John Matsson with the Recreation time for the New ORU Summer Math and Science Academy
35. Play disc golf with students and staff on Fridays at noon.
36. Recruited a new adjunct Professor (Gyle Smith) to teach Philosophy of Science

**Dr. Roger Hartman, Professor**

1. Attended Tulsa Area Physics Journal Club (Fall and Spring) 10-11
2. Continuation of research on Comparing the Human Ear's Ability to "Hear Sound Frequency Ratios" with the "Human Eye's Ability to See Distance/Shape/Size Ratios.
3. Directed Physics Student Projects Presentations Egr/Phy Seminar, Fall 2010 and Spring 2011.
4. Continued to teach Physics II lect & labs through student projects approach, Fall 2010
5. Continued to teach Physics I lect & labs through student projects approach, Spring 2011
6. Taught Advanced Physics lab Fall 2010
7. Taught Mathematical Methods in Physics Fall 2010
8. Hosted group of Engineering/Physics freshman for dinner and ice breaker Fall 2010
9. Met with student visitors to campus several times in the Fall and Spring 2010-11
10. Served on the University Radiation Safety Committee 2010-11
11. Served as University Radiation Safety Officer for fiscal 2011
12. Wrote a renewal application for our Radio Active Materials Use License and submitted it to the OK DEQ in March, 2011
13. Taught Modern Physics and Modern Physics Lab, Spring 2011
14. Performed peer evaluation of a University colleague Fall 2009
15. Attended 8 Brown Bag Faculty Development Seminars, Fall 2010 and Spring 2011
16. Tutored several ORU students
17. Authored Criterion One section (student academics) of the ABET self study document
18. Met weekly to review ABET self study document during Fall 2010 and Spring 2011
19. Active in First Men, First United Methodist Church (FUMC), Tulsa
20. Active in small group Bible study at First United Methodist Church (FUMC) Grove, OK.
21. Served as Lay Care Minister at FUMC, Grove, and FUMC Tulsa Made hospital calls.
22. Served as Pianist, The Rotary Club of Tulsa
23. Served on the Music and Club Singing Committee, The Rotary Club of Tulsa
24. Served on Crescendo Music Awards Committee, The Rotary Club of Tulsa
25. Served on Advisory Board of The Brush Creek Ranch for troubled boys
26. Served on the Board of Directory of the Golden Eagle Club, ORU
27. Continued to teach Open Hearts Sunday School Class at FUMC Grove, OK
28. Served as Pianist, 8:30 A M Sunday worship service, FUMC Grove, OK
29. Served on Adult Education Curriculum Council, FUMC Grove, OK
30. Served as a shepherding councilor, FUMC, Grove
31. Sponsored Campus Crusade missionary in Northern Africa 2010-11
32. Advisor and Consultant to African Christian Mission
33. Sponsored several student missions projects

### **Dr. Steve Herr, Professor**

1. June: Graded AP Environmental Science exams for one week in Cincinnati, OH
2. Taught PSC 101 during 4<sup>th</sup> summer session
3. Taught online LPSC 101 during the second half online session.
4. Taught Principles of Earth Science lecture and labs (PSC 201) along with Principles of Physical Science lecture.
5. Submitted changes to the new major, Environmental Sustainability to the School of Science and Engineering Assembly.
6. The H.E.A.R.T. mission Oriented agriculture program offered at Warner College in Florida
7. Continued as advisor to the ORU Environmental Stewardship Club and held three “Environmental Movie Nights”
8. I continued as chairman of the ORU Green Campus Committee which met four times during the semester.
9. Taught new course: Global Development and Sustainability for first time.
10. Taught online class: LPSC Principles of Physical Science Lecture & Lab
11. Taught new version of environmental science. Previous lecture class, PSC 350 Environmental Geography, was merged with EVR 350, environmental science. Labs were kept separate because they were tailored for different groups of Students.
12. I proposed the beginning of student gardens on campus. This was coordinated With the Dept. of Buildings and Grounds through the ORU Green Campus Committee. To recruit students, I offered students in EVR 350 lab the option to do a service learning component for the second half of the semester. Ten students committed to the program, working in the university greenhouse with campus staff. The project was successful and will be continued throughout the year.

### **Dr. Andrew Lang, Professor**

1. Chemistry in Second Life. Part 1. A world of visualization. Andrew S.I.D. Lang and Jean-Claude Bradley (2011). Chemistry in Australia, May 2011. Royal Australian Chemical Institute.
2. Collaboration Using Open Notebook Science in Academia, Jean-Claude Bradley, Andrew S.I.D. Lang, Steve Koch, and Cameron Neylon (2011). In: Collaborative Computational Technologies for Biomedical Research. Edited by Sean Ekins, Maggie A.Z. Hupcey, and Antony J. Williams. Wiley. ISBN 13: 978-0470638033
3. Teaching Calculus with Wolfram|Alpha. Vincent E. Dimiceli, Andrew S.I.D. Lang, and LeighAnne Locke (2010). International Journal of Mathematical Education in Science and Technology 41:8.
4. Participant DaVinci Institute Spring Think Tank, Vineyard Center at OETA, Oklahoma City 2011
5. Presented “Using Open Chemistry to find a Cure for Malaria,” Invited address, Regent Preparatory School, Tulsa 2011

6. Co-Presented (with Joe Ninowski) “Lewis’ view of Mars in Our of the Silent Planet,” at the C.S. Lewis and Inklings Conference, ORU 2011
7. Presented “Eternal Inflation and its Consequences” at joint institutional ASA and HP SPEAK meeting, ORU 2011
8. Participant DaVinci Institute Fall Forum, NSU 2010
9. Presented “The Universe” at Union High School. Fall 2010
10. Co-Presented “Having an Answer II” with Dominic Halsmer, Ken Weed, Jeff Lamp, Don Vance, and Andrea Walker. 2010
11. Honored with Department Faculty Member of the Year (2011), DaVinci Institute Fellow (2010)

**Dr. Robert Leland, Professor**

1. Served as an Associate Editor for the refereed journal Multidimensional Systems and Signal Processing.
2. Served as a reviewer for the IEEE Sensors Journal.
3. Served as a reviewer for the American Control Conference.
4. Taught Physics 111 during the first summer session, 2010.
5. Taught Mechanics of Materials, Engineering/Physics Seminar, Senior Research and Design, and Engineering Economics during the fall semester.
6. Taught Dynamics, Engineering Graphics (2 sections) and Senior Design and Research during the spring semester.
7. Reviewed software for Biomedical Engineering and dynamic simulation.
8. Attended a meeting of the Oklahoma Society of Professional Engineers (OSPE) where ORU alumni David Kobylnik and Vyacheslav Tokarev awarded the Outstanding Engineering Achievement Award: Student Category for their senior project: 3-D Face Recognition.
9. Nominated Sharayah Vermette and Jacob Gardner for the OSPE Outstanding Engineering Achievement Award: Student Category for their project on Soccer Ball Image Tracking.
10. Attended a meeting of the Tulsa Section of the Institute of Electrical and Electronic Engineers (IEEE), where three teams of ORU students presented posters of their senior projects.
11. Interviewed prospective students for the Whole Person Scholarship.
12. Revised and updated documents for the ABET self-study report.
13. Held meetings of the engineering faculty to review assessment data and suggest curriculum changes.
14. Attended webinars in preparation for the ABET accreditation visit for the Engineering program.
15. Attended the 2011 IEEE Green Technologies Conference, Region 5 Student Competition and Region 5 Business Meeting in preparation for the 2012 conference in Tulsa. Represented the Tulsa section of the IEEE for half of the business meeting.
16. Serving as Co-Chair for the 2012 IEEE Green Technologies Conference, Region 5 Student Competition and Region 5 Business Meeting. Dr. Sophie Liu is the Chair.

### **Dr. Sophie Liu, Professor**

1. Served as Department Representative, ORU Faculty Senate, 2010-11.
2. Served as Treasurer, Science & Engineering Faculty Assembly, 2010-11.
3. Served on Faculty Awards Committee, 2010-11.
4. Served as faculty advisor for the ORU IEEE Student Section Fall 2010.
5. Set up Society of Women Engineering (SWE) ORU Student Section August 25, 2010.
6. Served as faculty advisor for the ORU SWE Student Section 2010-11.
7. Was elected as General Chair by IEEE Tulsa Section Committee to host 2012 Green Technology Conference and Region 5 business meeting and student contests (GTC2012) in Tulsa in 2012.
8. Attended 2011 Green Technology Conference and Region 5 Business Meeting and student contests, April 14-17, 2011, Baton Rouge, Louisiana.
9. Determined the appropriate date and location (Hilton Hotel and ORU) for the conference of GTC2012.
10. Selected technical program chairs and built rest of the organizing committee for the conference of GTC2012, April –May 2011.
11. Initiated and coordinated on negotiating the hotel contract for the conference of GTC2012, April –May 2011.
12. Taught Network Analysis II Fall 2010.
13. Taught Engineering Computational Methods Fall 2010.
14. Taught Electromagnetic Theory Fall 2010.
15. Taught Electronics II lecture and laboratory Spring 2011.
16. Taught Digital Signal Processing Spring 2011.
17. Coordinated Engineering and Physics Seminar Spring 2011.
18. Presented at the conference of IEEE Southwest Symposium on Image Analysis and Interpretation at Austin, Texas on May 23 – 25, 2010. Title of the paper: “Video Based Soccer Ball Tracking”.
19. Attended monthly Engineering Advisory Board Meeting on December 4, 2010.
20. Attended the brown bag seminar on March 25, 2011.
21. Attended a meeting about the possibility of forming a chapter of Engineers with a Mission at ORU, October 21, 2010.
22. Modified the award criterion about teaching category for award committee on October 21, 2010
23. Coordinated for re-modeling electronics laboratory for the next ABET visit, April –May 2011.
24. Worked on the quotations for new lab benches and tables for electronics laboratory April – May 2011.
25. Led lab tour for Tulsa Technology Center visit on Oct. 26, 2010.
26. Had “take-out” lunch fellowship with 7 students on August 26, 2010.
27. Wrote a few recommendation letters for various students for their scholarship application and graduate school application.
28. Conducted Freshmen/Sophomore Interview in March 2011.

29. Served as the principal of Agape Chinese School, Agape Chinese Baptist Church, 2010-11.
30. Served as camp director of summer youth/children badminton camp in Agape Chinese Baptist Church, summer 2010.

**Mrs. Leighanne Locke, Assistant Professor**

1. Visited classrooms
2. Presented brown bag workshop (WAC)
3. Attend "Quality Matters Rubric" Workshop (Eighth Floor)
4. Dimiceli, Vincent E. , Lang, Andrew S. I. D. and Locke, LeighAnne(2010) 'Teaching calculus with Wolfram|Alpha', International Journal of Mathematical Education in Science and Technology,, First published on: 21 September 2010 (iFirst)  
URL: <http://dx.doi.org/10.1080/0020739X.2010.493241>
5. Instructor for Mathematics Improvement Project (MIP) – a grant focusing on providing workshops and assistance to local teachers seeking Oklahoma certification in the area of Mathematics, June 2010
6. Senator (Math/CSC Area) on Faculty Senate (2009 – 2011)
7. Director, Writing Across the Curriculum Program – 2010-11
8. Chair, Criterion 3 Committee for HLC Self Study/Site Visit
9. Advisement: Average load: 6 – 10 students
10. A Number of Junior audits performed
11. 2010-11 Teaching Alumni Faculty Recognition Award
12. 2010-11 Whole Person Assessment Faculty Service Award
13. 133 e-portfolios evaluated during the Fall 2010 & Spring 2011 Semester

**Dr. Xiaomin Ma, Professor**

1. CMPE 495 01- Directed Study, spring 2011, 3 credit hours.
2. EGR 101 - Introduction to Engineering (Computer Engineering part), Fall 2010, 1 credit
3. CMPE 443 01- Computer Architecture, spring 2011, 3 Credit hours.
4. CMPE 340 01- Digital System Design Lecture, spring 2011, 3 credit hours.
5. CMPE 340 61- Digital System Design Lab, spring 2011, 1 credit hour.
6. NSF grant: Collaborative Research (with Professor Kishor Trivedi at Duke University): Analytic Modeling and Enhancement of Vehicular Ad Hoc Networks for Safety Critical Applications, Aug. 2010~July. 2013, PI.
7. Sabbatical leave (from Aug. 1, 2010 to Dec. 30, 2010) to manage or coordinate the NSF project.
8. Provided guidance to a Ph. D. student at Duke University.
9. Advised one senior project: Cooperative collision warning system.
10. Advised two students on research vehicle to vehicle communications supported by NSF.
11. Visited Duke University and gave a talk on "Analytic Modeling and Enhancement of Vehicular Ad Hoc Networks for Safety Critical Applications"
12. Presented a paper in IEEE GLOBECOM, Dec. 6, 2010, Miami: "Reconsider Broadcast Packet Reception Rates in One-Dimensional MANETs".

13. Invited talk, ACM Waves of Future Forum, Oral Roberts University, March 31st, 2011: Improve Road Safety using Wireless Communications.
14. Invited talk at Seminar in Telecommunication center of University of Oklahoma, March 29th, 2011, On the Reliability of Safety Applications in VANET,
15. ABET preparation (in charge of Criterion 4: Continuous Improvement) and weekly meetings.
16. Submitted one collaborative proposal to NSF.
17. Sophomore/Freshman Interview.
18. Group advisement.
19. Led lab tour for Tulsa Technology Center visit.
20. Reconsider Broadcast Packet Reception Rates in One-Dimensional MANETs, Xiaomin Ma, J. Zhang, and T. Wu, IEEE GLOBECOM 10, Dec. 6-10, 2010, Miami.
21. Performance Evaluation for DSRC Vehicular Safety Communication: A Semi-Markov Process Approach, Xiaoyan Yin, Xiaomin Ma, and Kishor Trivedi, The Fourth International Conference on Communication Theory, Reliability, and Quality of Service, April 16-17, 2011.
22. On the Reliability of Safety Applications in VANETs, Invited paper, Xiaomin Ma, Xiaoyan Yin, and Kishor Trivedi, International Journal of Performability Engineering Special Issue on Dependability of Wireless Systems and Networks.
23. On the broadcast packet reception rates in two-dimensional MANETs," Xiaomin Ma, IEEE International Conference on Communications (ICC2011).
24. On the Reliability and Performance of Real-Time One-Hop Broadcast MANETs", Xiaomin Ma, ACM/Baltzer Wireless Networks.
25. An Interacting Stochastic Models Approach for the Performance Evaluation of DSRC Vehicular Safety Communication, Xiaoyan Yin, Xiaomin Ma, and Kishor S. Trivedi, in IEEE/ACM Trans. on Networking, 2011.
26. Reliability Analysis of One-Hop Safety-Critical Broadcast Services in VANETs, Xiaomin Ma, Jinsong Zhang, Tong Wu, In IEEE Trans. on Vehicular Technology. Revised on March 14, 2011.
27. Design and Analysis of a Robust Broadcast Scheme for VANET Safety-Related Services, Xiaomin Ma, Jinsong Zhang, Xiaoyan Yin, and Kishor Trivedi, IEEE Trans. on Vehicular Technology, Special Section on Telematics Advances for Vehicular Communication Networks, 2011.
28. Performance Modeling and Analysis of Emergency Message Propagation in Vehicular Ad Hoc Networks, Jinsong Zhang, Xiaomin Ma, and Tong Wu, Journal of Wireless Communications and Mobile Computing, Revised on Feb. 16.
29. A Robust Broadcast Scheme for VANET One-hop Emergency Services, Xiaomin Ma, Xiaoyan Yin, and Kishor Trivedi, 4th International Symposium on Wireless Vehicular Communications: WIVEC2011, 5-6 September 2011, San Francisco.
30. On the Coverage Area in Broadcast Ad Hoc Networks, Maui, Hawaii, August 1-4, 2011., Xiaomin Ma, Jinsong Zhang, The 3rd IEEE International Workshop on Performance Modeling and Evaluation in Computer and Telecommunication Networks (PMECT2011).
31. Review papers for IEEE Journal of Selected Area on Communications, IEEE Transactions on Vehicular Technology
32. Scholar of the Year, ORU, 2010-2011 academic year.

33. Adjunct Faculty, Ph. D. Dissertation Committee Member in Electrical and Computer Engineering at University of Oklahoma, Sept. 2010~Sept. 2012.
34. Chapel attendance
35. Attend University-wide, school-wide meetings, and department meetings.
36. Faculty search committee member in our department
37. Praise team leader for Sunday worship in Agape Chinese Baptist Church.
38. Served on the church council as a trustee member in Agape Chinese Baptist Church
39. Friday Fellowship ministry team Leader in Agape Chinese Baptist Church

**Dr. John Matsson, Associate Professor**

1. Served as Chairman of the ORU Engineering, Computer Science, Physics, and Mathematics Department.
2. Published the textbook “An Introduction to SolidWorks Flow Simulation 2010”, SDC Publications.
3. Helped the ORU ASME Student section to host the Fifth Annual Lego Robotics Competition on April 1, 2011.
4. Hosted monthly Engineering Advisory Board meetings on Saturday mornings in Trustee’s Dining Room during Fall 2010 and Spring 2011.
5. Served as the Chairman for the ASME Mid-Continent Section during 2010 – 2011. I have also been the ORU ASME Student Section Advisor during 2010 – 2011.
6. Lead a proposal effort for the NSF S-STEM scholarship program for \$595,177. PI; John Matsson, Co-PI’s Robert Leland, Dominic Halsmer, Marcia Livingston. Proposal was not funded.
7. Hosted the Math and Science Summer Academy at ORU.
8. Submitted final report for ASHRAE Senior Undergraduate Project Grant in the amount of \$4,900 for a “Swirling Pipe Flow Laboratory”.
9. Taught PSC 101 during the first summer session, 2010.
10. Taught Finite Element Method and Manufacturing Processes during the fall semester.
11. Taught Fluid Mechanics and Heat Transfer during the spring semester.
12. Invited a group of students to ORU from Francis Tuttle in OKC.
13. Brought one senior students to the AIAA/ASME OK Symposium at OU, Norman on April 9.
14. Interviewed prospective students for the Whole Person Scholarship.
15. I gave tours of the department to many prospective students.
16. I advised one senior project.
17. Served as judge for the ORUEF Engineering Competition in May.
18. Wrote several recommendation letters for various students.
19. Attended Faculty Early Morning Prayer Group.
20. Attended luncheon for Fall and Spring College Weekends.
21. Attended several informative Brown Bag Lunches in the Trustees Dining Room.
22. Attended ASME SPDC in Fayetteville with ten students on April 1 – 2, 2011.
23. Highlighted the Department of Engineering, Computer Science, Physics, and Math at the Fall Trustees Meeting.

**Dr. Kenneth Preston, Associate Professor**

1. September 2010 participated in the Oklahoma State Regents Curriculum Transfer Committee as a representative for Oral Roberts University in the Information Technology area.
2. September 2010 with Dr. Cal Easterling was an invited presenter and presented “Faculty Load: Implementing an Automated Faculty Load Reporting Process in Banner” at the Southern Association for Institutional Research (SAIR) Conference in New Orleans.

**Dr. Bob Steward, Assistant Professor**

**Mr. Daniel Ward, Assistant Professor**

**Dr. Teresa Williams, Assistant Professor**

1. I have received recognition as an honored member of the Collegiate Faculty in the 2011 to 2012 edition of the Montclair Who's Who in North America. Dr. Dorothy Radin and I were among honorees at an appreciation luncheon on November 4, 2010 for our college preparation work with students of Tulsa Job Corps Center.

**Dr. Daobin Zhang, Associate Professor**

**Student Accomplishments**

- Ten engineering seniors graduated, one summa cum laude and two magna cum laude.
- Melissa Slinkard was selected as Outstanding Engineering Physics Student.
- Aaron Beavers was selected as Outstanding Engineering Student and Outstanding Department Student.
- The senior paper of David Adams, Aaron Beavers, and Cyrus Hanson was selected as Outstanding Engineering Senior Project.
- Keren Apura was selected as Outstanding Computer Science Student.
- The senior paper of Keren Apura was selected as Outstanding Computer Science Senior Project.
- Mattie Sue Judd was selected as Outstanding Mathematics Student.
- JoAnna Brannberg was selected as Outstanding Mathematics Education Student.

## Future Strategies

1. Continue to increase faculty/student interaction and mentoring. Encourage faculty to pursue funded research projects that involve engineering students.

Goal #1: Students engage in good works that glorify God.

Current Progress:

- The team consisting of David Adams, Aaron Beavers, and Cyrus Hanson received the Outstanding Engineering Research/Design Project Award, with a project entitled “Design of an FSAE Intake System”.
- Keren Apura received the Outstanding Computer Science Senior Project Award, with a project entitled “ORU Missions Database”.
- Adam Kauffman won 4<sup>th</sup> place for his presentation on “Stepped Lift System for Wind Tower” at the ASME Student Professional Development Conference in Fayetteville, AR.
- Aaron Beavers received an ASME Scholarship award in April for his faithful service to the ORU Student Section of ASME.

2. Encourage students to engage in good works that glorify God, such as continued attendance at the SHPE Annual Student Conference, IEEE student conference, and participation in IEEE design competitions, as well as ASME conferences and competitions.

Goal #2: Alumni engage in good works that glorify God.

Current Progress: Mattie Sue Judd has been accepted for graduate school at University of North Carolina – Chapel Hill. Cyrus Hanson started an engineering job for Navistar and Aaron Beavers and Adam Kaufmann got engineering jobs with Aeon. Vijay Masillamoni Karlsson and Stephen Twyman returned for Homecoming.

3. Improve relations and communications with alumni by sending out a regular departmental newsletter.

Goal #3: Make wise purchases of equipment and supplies to enhance science and engineering instruction.

Current Progress: Lab fee and restricted accounts along with alumni donations currently provide inadequate funds for purchasing equipment and teaching supplies. An annual newsletter is sent out to alumni and requests are made for alumni to donate towards engineering labs, projects and student sections.

4. Continue to make wise use of funds to provide students with the best possible laboratory experiences.

Goal #4: Maintain ABET accreditation for the engineering degree and pursue accreditation

for the other degrees when appropriate.

Current Progress: ABET accreditation site visit in fall of 2005 was very successful. No weaknesses, concerns, or deficiencies were found. Accreditation of the engineering degree was extended for another six years. Our machine shop and engineering laboratories will get more space in the archive area.

5. Continue to establish good relationships with local high schools.

Goal #5: Better prepare our graduates to serve effectively in the role of missionary to scientists and engineers.

Current Progress: We had a group of students from Francis Tuttle in OKC that visited ORU. We hosted our fifth annual Lego robotics competition with many students from different schools in the Tulsa area.