

SCHOOL OF SCIENCE & ENGINEERING
Engineering, Computer Science, Physics, and Mathematics
Department
Annual Year End Report
2009-2010

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

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Brief Executive Summary

The Computer Science and Mathematics Department merged with the Engineering, Physics, and Physical Science Department. Dr. Andrew Lang was honored the prestigious DaVinci Fellows Award for his open courseware initiative in Second Life. Two ORU Engineering majors, Kevin Stark and Jonathan Luth, won first and third place, respectively, in the undergraduate poster session at the annual student professional development conference of the American Society of Mechanical Engineers at ORU on Friday, March 26. Ten senior engineers graduated this year with B.S.E. degrees and one student with a B.S. degree. Two computer science students, one mathematics student, and one mathematics education student graduated, all with B.S. degrees.

Executive Bullet Points

- Dr. Dimiceli, Dr. Lang, and Mrs. Leighanne Locke have a paper accepted with the title "Teaching Calculus with Wolfram|Alpha" in the *International Journal of Mathematical Education in Science and Technology*
- Dr. Halsmer coauthored a paper with five engineering students (Joshua Weed, Ben Hase, Sean McDonough, Taylor Tryon, and Elliot Butay) entitled, "Exploring Connections between Engineering and Human Spirituality," to be presented by myself at the Annual ASEE (American Society for Engineering Education) Conference in Louisville, KY on June 22nd.
- Dr. Lang published a paper together with student David Kobilnyk on "Visualizing Atomic Orbitals Using Second Life", A S I D Lang and D C Kobilnyk (2009). *Journal of Virtual Worlds Research* Vol. 1, No. 6
- Dr. Leland presented the paper "Pair Programming in a CAD Based Engineering Graphics Course" at the 2009 American Society for Engineering Education (ASEE) Annual Conference and Exposition, Houston, TX, June 14-17, 2009.
- Dr. Liu co-authored a paper with students Jacob Garner and Sharayah Vermett, "Video Based Soccer Ball Tracking". The paper has been accepted for presentation at the conference 2010 IEEE Southwest Symposium on Image Analysis and Interpretation in Austin, Texas on May 23 – 25, 2010.
- Dr. Ma has an accepted paper with the title "Analysis of Sliding Frame R-ALOHA Protocol for Inter-Vehicle Communications". Accepted to ACM/Baltzer Wireless Networks, 15(8), 1102-1112, Oct. 2009 by Xiaomin Ma, H. Refai, and S. Yang.
- Dr. Matsson lead a successful proposal effort for the Oklahoma State Regents for Higher Education Summer Academies for Mathematics, Science, & Multidisciplinary Studies for \$31,168.
- The ORU ASME Student Section hosted the ASME SPDC/ECTC Conference on March 25 – 27.

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. I attended 2 Brown Bag Lunches.
2. I will be on Sabbatical at NOAA/NWS in the Fall.
3. I got an article published in the *International Journal of Mathematical Education in Science and Technology* with Dr. Lang and LeighAnne Locke.
4. 8 new members were inducted into KME.

Dr. Dave Eland, Professor

1. I attended the annual Oklahoma Computing Conference (held at Oklahoma State University on March 5 this year). Further info on the event is at the following web site: <http://occ.ecok.edu/>
2. There have been numerous consulting projects that I have pursued during the past year. Among them are the following two:
 - a) Developed message logging architecture in support of software that does DNA analysis. (This work is for Mass-Spectra, Inc, which is a company based in San Diego that has been working with a large pharmaceutical firm which is developing computerized techniques for doing DNA analysis.)
 - b) Devise working prototype of software that will enable customers to pay based on actual usage of the product rather than paying a large sum to purchase the product. The usage information is maintained on a database system that is accessed over the Internet. (This work is for Scientific Computer Applications, Inc, which is a company here in Tulsa that develops software products for the petroleum industry.)
3. Just recently I have been exploring the possibility of teaching a course next spring on how to develop apps for the iPhone.

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. Presented a paper at AOK section of American Association of Physics Teachers.
4. Attended 12 different workshops and seminars at ORU, 1 at "8-th floor", 12 web seminars provided by McGraw Hill, Cengage and Wiley Publishers, Dr. Ross seminars.
5. Made presentation at Fall College Weekend.

6. Attended 2 days Governor's Conference on Developmental Disabilities.
7. Attended tennis class and volleyball class at ORU.
8. Collected and send 3 containers with humanitarian Aid to Ukraine (Kiev "Emmanuel" Fund, Simferopol Baptist Church, and Donetsk Christian University).
9. Served on Jury Duty in Rogers County.
10. Volunteered at "Christ for Humanity", YMCA, DVIS.
11. Together with Dr. Ablin (chemistry department gave science demonstrations in Clinton elementary and Marshall elementary schools -4 sessions.
12. Participated in Dream Center event.

Dr. Dominic Halsmer, Professor

1. Served as Dean of the ORU School of Science and Engineering
2. Taught the five-year-olds Children's Church class at Believers Church
3. Spearheaded the submission of two NSF proposals for major equipment & lab renovations
4. Participated in several ORU Intramural athletic events including ultimate, volleyball, and basketball
5. Served as judge for the ORUEF Chess Tournament in May
6. Exercised regularly with students, faculty and staff on campus at lunchtime
7. Guest lectured on light for Darlene Gaskill's art class in Fall & Spring
8. Guest lectured for Philosophy of Science class in Spring
9. Served as a representative to the Higher Education Forum
10. Guest lectured for Apologetics class in the Spring
11. Served on the Institutional Improvement and Student Learning Committee
12. Kept statistics at our daughter's NOAH Jaguars basketball games
13. Participated in Faculty vs. Freshmen Basketball games at the AC during New Student Orientation in the Fall
14. Wrote several recommendation letters for various students
15. Enjoyed the Faculty Retreat with my family
16. Organized the visit of guest speaker Leslie Wickman, Director of Scientific Research at APU
17. Gave departmental tours to prospective students and parents
18. Served on the Worldview Committee
19. Regularly attended and led Faculty Early Morning Prayer Group
20. Regularly attended monthly "Thinklings" meetings of ORU faculty interested in writing in the area of science and faith
21. Organized multiple science and faith presentations at Trinity Episcopal Church
22. Attended scholar's luncheon at the Hilton for Fall and Spring College Weekends.
23. Placed 4th at the ORU Spring Fun Run (2 mile) with a time of 11:50
24. Directed an Honors Research Fellowship (Joshua Weed, Ben Hase, Sean McDonough, Taylor Tryon) to study the role of God as engineer (Phase III – The Potential of Reverse Engineering Studies for Natural Theology and Evangelism)
25. Plan to submit a proposal for an Honors Research Fellowship to study the role of God as engineer (Phase IV – Affordance-based Reverse Engineering of Complex Natural Systems)
26. Organized and led monthly meetings of the Science and Engineering Student Advisory Council, typically in our home

27. Attended various Tulsa Metro Chamber events
28. Served on the Safety and Security Committee
29. Served on the Board of the DaVinci Institute, attending several board meetings in OKC
30. Assisted in the development of the Trustees Reports for the Fall Trustees Meeting
31. Attended several informative Brown Bag Lunches in the Trustees Dining Room
32. Attended Faith and Science Talk at TU in the Spring
33. Attended Senior Honor Students Medallion Ceremony on April 29th
34. Attended the HPER, Behavioral Sciences, and Engineering & Physics, Biology, Chemistry, and Math & Computer Science Hooding Ceremonies on May 1st
35. Coauthored a paper with five engineering students (Joshua Weed, Ben Hase, Sean McDonough, Taylor Tryon, and Elliot Butay) entitled, "Exploring Connections between Engineering and Human Spirituality," to be presented by myself at the Annual ASEE (American Society for Engineering Education) Conference in Louisville, KY on June 22nd
36. Interviewed several students for the Whole Person Scholarship competition.
37. Served as a volunteer with my family at Loaves and Fishes Ministry.
38. Conducted the first annual ORU Homecoming 5k Run
39. Attended the Behavioral Sciences Picnic on November 6th
40. Attended the Engineering, Computer Science, Physics and Math Picnic on September 2nd
41. Organized the sporting events at the Annual Engineering Games on February 10th
42. Led half the Chairs Council Meetings
43. Had the statics students over to our home for dinner
44. Facilitated the development of new majors in Environmental Sustainability and Information Technology
45. Organized the sporting events at the ASME Conference hosted at ORU in the spring.
46. Successfully completed graduate courses in Greek Synthesis I, Greek Synthesis II, Greek Hermeneutics and Exegesis, and The Gospel of Matthew (in Greek)
47. Assisting John Matsson with the Engineering Unit of the New ORU Summer Math and Science Academy
48. Attended dinner for the guest speaker at the Jews and Jesus Seminar in Zoppelt
49. Attended sessions by guest lecturer J.P. Moreland
50. Attended Christian Apologetics Conference put on by a local church
51. Attended motor pool training session
52. Attended meetings on overseas recruitment with admissions officials
53. Designed a disc golf course on campus and submitted proposal for funding
54. Attended lecture by guest lecturer Jay Budsezeuski
55. Designed 2 mile obstacle course for intramural sports event

Dr. Roger Hartman, Professor

1. Continued to teach Physics II lect & labs through student projects approach, Fall 2009
2. Continued to teach Physics I lect & labs through student projects approach, Spring 2010
3. Hosted group of Engineering/Physics freshman for dinner and ice breaker Fall 2009
4. Met with student visitors to campus several times in the Fall and Spring 2009-10
5. Served on the University Radiation Safety Committee 2009-10
6. Served as University Radiation Safety Officer for fiscal 2010
7. Taught Modern Physics and Modern Physics Lab, Spring 2010

8. Taught Biomedical Engineering Survey, Spring 2010
9. Performed peer evaluation of a University colleague Fall 2009
10. Attended 5 Brown Bag Faculty Development Seminars, Fall 2009 and Spring 2010
11. Active in First Men, First United Methodist Church (FUMC), Tulsa
12. Active in small group Bible study at First United Methodist Church (FUMC) Grove, OK.
13. Served as Lay Care Minister at FUMC, Grove, and FUMC Tulsa Made hospital calls.
14. Served as Pianist, The Rotary Club of Tulsa
15. Served on the Music and Club Singing Committee, The Rotary Club of Tulsa
16. Served on Crescendo Music Awards Committee, The Rotary Club of Tulsa
17. Served on Advisory Board of The Brush Creek Ranch for troubled boys
18. Served on the Board of Directory of the Golden Eagle Club, ORU
19. Continued to teach Open Hearts Sunday School Class at First Methodist, Grove, OK
20. Served as Pianist, 8:30 A M Sunday worship service, FUMC Grove, OK
21. Served on Adult Education Curriculum Council, FUMC Grove, OK
22. Served as a shepherding councilor, First Methodist, Grove
23. Sponsored Campus Crusade missionary in Northern Africa 2007-08

Dr. Steve Herr, Professor

1. After graduation in May, my wife and I visited our son, Jeremy, who works at CERN in Geneva, Switzerland. During our visit, we toured the Atlas Project detector area of the Large Hadron Collider.
2. In June I corrected AP Environmental Science exams for ETS at Lincoln, NE. Along with 250 other high school and college environmental science teachers I graded essays for the AP exam. Altogether we graded 70,000 exams during 7 solid days of work.
3. I ran the correspondence course for PSC 101 lecture and lab.
4. I taught PSC 101 lecture and lab during the fourth summer session.
5. During fall semester I taught two sections of physical science lecture, one section of environmental science lecture and two lab sections, as well as one section of environmental geography lab.
6. During the semester, I participated in one of the engineering seminars, summarizing the status of work at CERN and encouraging students to consider REU opportunities.
7. I resumed chairmanship of the ORU Green Campus Committee which met once a month throughout the year. We advanced our progress toward installing filtered water faucets in each of the dorms, the commuter center, the faculty lounge, and the AC. I also attended a seminar held at the University of Tulsa on sustainability options.
8. I served as secretary for the School of Science & Engineering Faculty Assembly.
9. I continued riding the bus to work and supplemented my transportation requirements by riding my bicycle to work on several occasions.
10. During spring semester I taught one section of physical science lecture, one section of environmental science lecture, two sections of environmental geography lab, one section of environmental science lab, and one section of earth science lab.
11. I taught a two week series on globalization and its effects on poverty to my Sunday school class in February. During the semester I did extensive reading on the subject and incorporated the material into the environmental science lecture.
12. I worked with Mark Hall of general education to establish artifacts for WPA scholarship

winners to demonstrate the outcome of citizenship. These involved evaluating their involvement in service clubs.

13. I proposed a new degree titled Environmental Sustainability along with a new course called Global Development and Sustainability. This is an interdisciplinary major drawing upon existing minors and a core of environmental science classes. This was proposed to the SEFA and was approved in April. It will be offered beginning the fall of 2010 with the first presentation of the new class in spring of 2011.
14. The physical science correspondence classes that I created in 1990 were converted to online classes. I rewrote all of the graded items and managed the first offering of the class during March and April.
15. I gave an interactive lecture on Flood Prediction using Peak Flow Data to the Union H.S.Collegiate Academy on April 14. We used government web sites to access flow data on area streams for making 100 year flood predictions.
16. I gave a lecture to the Philosophy of Science honors seminar in March. My topic was on how fossils are used in geological interpretation.

Dr. Andrew Lang, Professor

1. **Visualizing Atomic Orbitals Using Second Life**, A S I D Lang and D C Kobilnyk (2009). *Journal of Virtual Worlds Research* Vol. 1, No. 6
 2. **The Spectral Game: leveraging Open Data and crowdsourcing for education**, J-C Bradley, R J Lancashire, A S I D Lang, and A J Williams (2009), *Journal of Cheminformatics*. Vol. 1, No. 9
 3. **Chemistry in Second Life**, A S I D Lang and J-C Bradley (2009), *Chemistry Central Journal*, Vol. 3, No. 14.
 4. **Beautifying Data in the Real World**, J-C Bradley, R Guha, A S I D Lang, P Lindenbaum, C Neylon, A J Williams, and E Willighagen (2009), In: *Beautiful Data: The Stories Behind Elegant Data Solutions*. Edited by T Segaran and J Hammerbacher. O'Reilly Media. ISBN 13: 978-0-596-15711-1
 5. **Open Notebook Science Challenge: Solubilities of Organic Compounds in Organic Solvents**, J-C Bradley, C Neylon, R Guha, A J Williams, B Hooker, A S I D Lang, B Friesen, T Bohinski, D Bulger, M Federici, J Hale, J Mancinelli, K Mirza, M Moritz, D Rein, C Tchakounte, H Truong (2009). Editors: J-C Bradley and A S I D Lang. ISBN 13: 978-0-557-25252-7
1. **The Anthropic Principle** (2009). Two sessions presented at Trinity Episcopal Church as part of the "Having an Answer" project.
 2. **Beginning Second Life** (2009). Two sessions presented to scientists on Nature's Island in Second Life.
 3. **Virtual Worlds – The Anthropic Principle** (2009). Co-presented two talks at Google's invitation only conference scifoo held at the GooglePlex, Mountain View, CA. One with Berci Mesko (Hungary) and one with Bruce Hood (UK)
 4. **Virtual Worlds** (2009). Co-presented with Joanna Scott of Nature Publishing Group at SciBar Camp conference, San Francisco, CA
 5. **Using Second Life to Visualize Data** (2009). Presented on Second Nature Island in Second Life.

6. **Open Notebook Science** (2009). Remote co-presentation with Jean-Claude Bradley of Drexel University, Columbia University Libraries Panel on Open Science.
7. **The Anthropic Principle** (2009). Two sessions presented at Believers Church as part of the "Having an Answer" project.
8. **Visual Representation of Chemical Data in Virtual Worlds** (2009). Co-presented with Jean-Claude Bradley at the VM LEM Conference in Second Life. Invited address.
9. **Intermediate Second Life** (2009). Remunerated presentation at the Eighth Floor.
10. **Introduction to Second Life** (2009). Remunerated presentation at the Eighth Floor.
11. **Having an Answer** (2009). Presentations by myself, Dominic Halsmer, Ken Weed, Chris Green, and Lori Kanitz as part of the 'Having an Answer' project.
12. **Red Tide** (2009). Co-presentation with David Bulger, Honors Research Seminar.
13. **Technology for Distance Education** (2009). Panel Member. Faculty Brown Bag Luncheon.

Dr. Robert Leland, Professor

1. Presented paper: Pair Programming in a CAD Based Engineering Graphics Course at the 2009 American Society for Engineering Education (ASEE) Annual Conference and Exposition, Houston, TX, June 14-17, 2009.
2. Submitted paper to the Engineering Design Graphics Journal entitled 'Using Pair Programming to Teach CAD Based Engineering Graphics.' Paper has been fully accepted for publication.
3. Served as an Associate Editor for the refereed journal Multidimensional Systems and Signal Processing.
4. Served as a reviewer for the refereed journals: IEEE Transactions on Industrial Electronics, Fuzzy Sets and Systems, ISA (International Society for Automation) Transactions, IEEE Transactions on Automatic Control.
5. Lead a proposal effort for the NSF S-STEM scholarship program for \$595,177. PI; Robert Leland, Co-PI's Dominic Halsmer, Marcia Livingston, John Matsson. Proposal was not funded.
6. Taught Physics 111 during the first summer session, 2009.
7. Taught Mechanics of Materials, Engineering/Physics Seminar, Senior Research and Design, and Engineering Economics during the fall semester.
8. Taught Dynamics, Engineering Graphics (2 sections) and Senior Design and Research during the spring semester.
9. Attended a meeting of the Oklahoma Society of Professional Engineers (OSPE) where ORU alumni Rosa Hathaway (Rivas), Nuhu Wya and James Wanjiku were awarded the Outstanding Engineering Achievement Award: Student Category for their senior project: Sucker Rod Pump Simulator.
10. Nominated David Kobilnyk and Vyacheslav Tokarev for the OSPE Outstanding Engineering Achievement Award: Student Category for their project on Automatic Face Recognition.
11. 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.
12. Interviewed prospective students for the Whole Person Scholarship.

13. Revised and updated the engineering artifacts for Whole Person Assessment to address the ABET Criterion III learning outcomes. John Matsson, Daobin Zhang, and Xiaomin Ma submitted updated or new rubrics for several engineering artifacts.
14. Held meetings of the engineering faculty to review assessment data and suggest curriculum changes.
15. Held a Whole Person Assessment Chapel on November 6, 2009.
16. Attended webinars in preparation for the ABET accreditation visit for the Engineering program.

Dr. Sophie Liu, Associate Professor

1. Advised the senior project “Robust Soccer Ball Tracking Using Computer Vision” for 2009-2010.
2. Received an Honors Research Assistant Grant from ORU and advised two honor students on research in image processing and video analysis under honors program.
3. Co-authored a paper with students Jacob Garner and Sharayah Vermett, “Video Based Soccer Ball Tracking”. The paper has been accepted to present in the conference of 2010 IEEE Southwest Symposium on Image Analysis and Interpretation. at Austin, Texas on May 23 – 25, 2010.
4. Attended eight teaching related workshops.
5. Served as Department Representative, ORU Faculty Senate.
6. Served as Treasurer, Science & Engineering Faculty Assembly.
7. Served in Faculty Awards Committee.
8. Served as faculty advisor for the ORU IEEE Student Section.
9. Made a presentation “Recruiting Chinese Students from mainland China” in a recruiting meeting on Feb. 23, 2010. Dr. Nancy Brainard, Vice President for Enrollment Services and Special Events, Mr. Chris Belcher, Admission director, Dr. Dominic Halsmer, the Dean of School of Science and Engineering, Dr. John Matsson, Department Chair of Engineering, Computer Science, Physics and Mathematics etc. attended the meeting. Led two hours electrical engineering lab tour for the high school students in Tulsa Engineering Academy at Memorial on Feb. 25, 2010.
10. Led 50 minutes engineering lab tour for College weekend students on March 5, 2010.
11. Led two groups of seniors to attend Tulsa Engineering Challenge (TeCH 2010) at Tulsa Technology center (TTC) on March 26, 2010.
12. Worked with IEEE ORU students section and hosted a seminar “Engineer your Finances” open to all ORU students on April 1, 2010.
13. Attended the Tulsa IEEE chapter meeting in OSU on April 13, 2010, where our seniors present posters of their design projects.
14. Hosted an IEEE fellowship/movie night party at my home for 13 Engineering students on April 15, 2010.
15. Completed a layout design for re-modeling electronics laboratory for the next ABET visit on February 2, 2010.
16. Completed the quotations for updating electronics laboratory equipments for next ABET visit on February 23, 2010.
17. Conducted Freshmen/Sophomore Interview in February 2010.
18. Conducted Whole Person Scholarship interview on March 4, 2010.

Mrs. Leighanne Locke, Assistant Professor

1. Presented (co presented with Vince) at Oklahoma - Arkansas Section of the MAA at John Brown University. March 26-27, 2010 Title of Paper: " Teaching Calculus with Wolfram|Alpha".
2. Paper "Teaching Calculus with Wolfram|Alpha" by Dimiceli, V., Lang, A., and Locke, L. published in journal: *International Journal of Mathematical Education in Science and Technology*
3. Presenting "*What Are My Options? Matching Assignment Type to Level of Course in Mathematics*" at the 2010 International Writing Across the Curriculum Conference at Indiana University May 20-22, 2010.
4. Guest Lecturer for Union Collegiate Academy as part of ORU faculty speaking on the theme of "Applying Science for a Better life."
5. Coordinated Service Learning project for Honors Math & Society Course. Students created math activity lessons and taught the lessons at local elementary school (Jenks West 4th grade).

Dr. Xiaomin Ma, Associate Professor

1. Developed new microprocessor board ARM and create a new project for course CMPE 441: Microprocessor System Design
2. Revised degree plan sheet in Electrical and Computer Engineering
3. Advised one senior project: Cooperative collision warning system
4. Advised two honor students for undergraduate research
5. Worked on new Masters program proposal in Electrical and Computer Engineering
6. Submitted three collaborative proposals to NSF.
7. Application and being Advisor of a project for honor student:"Simulation Platform Construction for Inter-vehicle Communication Networks"
8. Sophomore/Freshman Interview
9. Group advisement
10. Led lab tour for 2010 Tulsa Engineering Academy at Memorial Visit
11. Thesis Committee Member for Masters degree in Electrical Engineering at University of Tulsa
12. Chair of Tenure Faculty Committee in School of Science & Engineering
13. Xiaomin Ma, H. Refai, and S. Yang, Analysis of Sliding Frame R-ALOHA Protocol for Inter-Vehicle Communications. Accepted to ACM/Baltzer Wireless Networks,15(8), 1102-1112, Oct. 2009.
14. N. Jiang, Z. Zhang, Jian Wang, Xiaomin Ma, The upper bound on the number of hidden neurons in multi-valued multi-threshold neural networks, 2009 International workshop on Intelligent Systems and Applications (ISA-09), May 23-24, 2009.
15. Xiaomin Ma, On the broadcast packet reception rates in two-dimensional MANETs, Accepted by IEEE International Conference on Wireless Communications, Networking and Information Security (WCNIS2010).
16. Xiaomin Ma, Jinsong Zhang, and Tong Wu, Design and Analysis of a Robust Broadcast Scheme For VANET Safety-Related Service, Submitted to IEEE Journal of Selected Area on Communications, Jan. 2010.
17. Xiaomin Ma, Jinsong Zhang, and Tong Wu, Impact of Network Parameters on Reliability

of Real-Time Broadcast VANET, Submitted to EURASIP Journal on Wireless Communications and Networking, Dec. 2009

18. Xiaomin Ma, Jinsong Zhang, and Tong Wu, Reconsider Broadcast Packet Reception Rates in One-Dimensional MANETs, Submitted to IEEE GLOBECOM 10, 2010
19. Xiaomin Ma and Jinsong Zhang, On the Coverage Area in Broadcast Ad Hoc Networks, Submitted to IEEE GLOBECOM 10, 2010

Dr. John Matsson, Associate Professor

1. Published the textbook “An Introduction to SolidWorks Flow Simulation 2009”, SDC Publications.
2. Helped the ORU ASME Student section to host the Fourth Annual Lego Robotics Competition on April 17.
3. Helped the ORU ASME Student section to host the ASME SPDC/ECTC Conference on March 25 – 27.
4. Hosted monthly Engineering Advisory Board meetings on Saturday mornings in Trustee’s Dining Room during Spring 2010.
5. Served as the chairman for the ASME Mid-Continent Section during 2009 – 2010. I have also been the ORU ASME Student Section Advisor during 2009 – 2010.
6. Submitted a proposal effort for the NSF MRI program. Proposal was not funded.
7. Lead a successful proposal effort for the Oklahoma State Regents for Higher Education Summer Academies for Mathematics, Science, & Multidisciplinary Studies for \$31,168.
8. Received an ASHRAE Senior Undergraduate Project Grant in the amount of \$4,900 for a “Swirling Pipe Flow Laboratory”.
9. Selected as Outstanding Faculty Member for the department.
10. Taught PSC 101 during the first summer session, 2009.
11. Taught Finite Element Method and Manufacturing Processes during the fall semester.
12. Taught Fluid Mechanics and Principles of Design during the spring semester.
13. Made a presentation at a meeting of the Tulsa chapter of the Oklahoma Society of Professional Engineers (OSPE) on September 3, 2009.
14. Attended ASME SLS Conference in Denver, CO on October 9 – 10, 2009.
15. Invited over twenty students on January 28 to ORU from the Tulsa Engineering Academy at Memorial High School.
16. Attended Governor’s Cup in OKC on April 9, 2009 as faculty adviser for ORU team that made it to the semifinals.
17. Brought three senior students to the AIAA/ASME OK Symposium at OSU, Stillwater on April 10.
18. Interviewed prospective students for the Whole Person Scholarship.
19. I gave tours of the department to many prospective students.
20. I advised three senior projects.
21. Served as judge for the ORUEF Engineering Competition in May.
22. Wrote several recommendation letters for various students.
23. Attended Faculty Early Morning Prayer Group
24. Attended luncheon at the Hilton for Fall and Spring College Weekends.
25. Attended several informative Brown Bag Lunches in the Trustees Dining Room
26. Attended motor pool training session.
27. Attended meetings on overseas recruitment with admissions officials.

Dr. Nate Meleen, Professor

1. With my wife I organized the food for the Department picnic at Haikey Creek.
2. Under faculty chaplain Larry Hart, I organized and led a faculty chapel on the need for spiritual applications in our teaching.
3. With my wife we organized and led the Engineering retreat at Meyer Log Cabin
4. I was asked to give the charge at the hooding ceremony on April 30th for the School of Science, Mathematics, and Engineering.

Dr. Kenneth Preston, Associate Professor

1. Finalized the creation of a new degree (Information Technology)

Dr. Bob Steward, Assistant Professor

Mr. Daniel Ward, Assistant Professor

1. Attending online seminars for SAM 2010 assessment and training from Course Technology Cengage Learning.

Dr. Teresa Williams, Assistant Professor

1. Doctors Teresa Williams (ORU) and Dorothy Radin (NSU) have an ongoing partnership with Chelsea Hampton of Tulsa's Job Corp to acquaint students in her transitions class with the ACT test. These students are in the final phase of vocational training, completing GEDs, and preparation for entering the work force. An IRB grant from ORU and a national award from ACT provided abundant resources for the initial experimental design study entitled 'Closing the Gap' and administered to at risk minority students. Dorothy Radin and I have committed to Job Corps to provide some non-experimental sessions in preparing for the mathematics portion of the ACT test upon request. The 'at risk' student definition now includes students who did not function well within the traditional settings of academia but need help in expanding their educational goals. After taking the mathematics portion of the ACT practice test, students receive feedback and a brief diagnostic explanation of performance on the subtests. We have loaned workbooks with additional practice tests and tips for enhancing performance on the mathematics portion of the ACT test. Students also received handouts describing the different tests on the ACT assessment instrument, registration dates, actual sample tests, and instructions on websites that offer free tutorials. According to Ms. Hampton, this project has raised the self-esteem of her students and inspired some to pursue higher educational goals. This is the second semester for this volunteer effort and we believe that we are ministering to this neglected population and raising ORU's visibility in the Tulsa Community.

Dr. Daobin Zhang, Associate Professor

1. Teach two courses and one laboratory session in Fall while two courses and two laboratory sessions in Spring.
2. Participate the activities of the UFA Research committee.

3. Participate activities of Tulsa Engineering Foundation (TEF)
 - 7/16/2009 TEF annual meeting
 - 10/29/2009 TEF Board Meeting
 - 1/14/2010 TEF Quarterly Meeting
4. Organize project show at Tulsa Engineering Challenge 3/26/2010
5. 2/10/2010 Proctor and Judge at Tulsa Math Count
6. Teaching Sunday school and participating education ministry at Agape Chinese Baptize Church (ACBC)
7. Attend Brown Bag Seminars:
 - 9/15/2009, Faculty Governance Brown bag
 - 11/10/2009, Strategic Faculty Engagement
 - 12/1/2009, the upcoming Honors Program Event
 - 1/20/2010, Serving Our Students: Addressing the Needs of Veterans, International Students, and Students Experiencing Grief
 - 2/6/2010, Scientific Confirmation of a Christian Worldview
 - 3/26/2010, an informal discussion with Dr. Jay Budziszewski
 - 4/20/2010, Honors Program Research Presentation – What was God Thinking? Honors Research in Engineering and Psychology for Theology!

Student Accomplishments

- Twelve engineering seniors graduated, four summa cum laude, two magna cum laude, and two cum laude.
- Justin Mitchell was selected as Outstanding Biomedical Engineering Student.
- Jacob Garner was selected as Outstanding Engineering Student and Outstanding Department Student.
- The senior paper of Jacob Garner and Sharayah Vermette (Dr. Sophie Liu as advisor) was selected as Outstanding Engineering Senior Project.
- David Kobilnyk was selected as Outstanding Mathematics Student.
- The senior paper of Martha Judd (Dr. Dave Eland as advisor) was selected as Outstanding Mathematics Senior Project.

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 Jacob Garner and Sheriah Vermette received the Outstanding Engineering Research/Design Project Award, with a project entitled “Robust

Soccer Ball Tracking Using Computer Vision”.

- Martha Judd received the Outstanding Mathematics Senior Project Award, with a project entitled “Hilbert, Gödel, and the Crisis in the Foundations”.

- Kevin Stark won 1st place for his poster on “Kenya Biodigester Design” at the ASME Student Professional Development Conference.

- The senior project “Suspension Design of a Formula Style Racecar”, conducted by Jonathan Luth and Brian Ostling, received 3rd place in the ASME Student Professional Development Conference poster competition.

- Aaron Allen received 3rd place in the web design competition during the ASME SPDC conference. The name of his web design was “The KNEE Process”.

- 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: Justin Mitchell has been accepted into OSU Medical School, and Kevin Stark has been accepted for graduate school at University of Missouri Columbia. Robert Nicholson, Bob Molby, David Jackson, and Randy Dunning 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. The lab fees have been increased for the coming academic year. 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 engineering laboratories needs more space and a proposal has been submitted to the administration at ORU.

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 over twenty students from Tulsa Engineering Academy at Memorial that visited ORU in January. We hosted our fourth annual Lego robotics competition with thirty students from Edison High School, Salina Public School, Sapulpa High School, and a home-school group as participating schools.