Russ Meier

Curriculum Vitae

Professor, Electrical Engineering and Computer Science

Program Director, Computer Engineering

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Teaching Statement

I have known since high school that I wanted a professional career in post-secondary education. As a first-generation college student, I did not have the advantage of parental advice to guide me through the first-year experience in Freshman Engineering, or the challenges of work-and-life balance. As a professor that primarily coordinates and teaches first-year courses, I try hard to ease the transition of our students into their own college careers. In my classes, I use daily learning objectives to guide their study, I create homework and laboratory assignments to keep them practicing classroom theory, I work problems in lecture created on-the-spot – often with requirements suggested by students in class – so that they can see my problem-solving process, and I regularly counsel my students on the importance of study and time-management. I also regularly talk with them about achieving a balance between study, employment, and recreational play – be it athletics, gaming, personal exercise, or just quiet time.

I have been teaching university level courses for twenty-nine academic years. I believe in continuous professional development to achieve high-quality instruction. I have studied the engineering education literature, developed a substantial amount of curriculum materials, participated extensively in the global engineering education community, and evolved my instructional techniques from the basic blackboard lectures used when I began my career to the student-centered classroom I use today – a classroom focused on active-learning exercises and design-based laboratories. I believe in teaching every student and I am keenly aware of inclusion, diversity, and equality issues that may affect performance. I grew up on an Indian Reservation in Nebraska, and I have seen first-hand how inequities limit career potential and how intersectionality results in cultural bias and discrimination. I work to create an open, friendly environment where my students feel their voices count in their education. I always strive to provide the best classroom experience and my continuous record of teaching excellence is documented through data provided by student evaluations, performance evaluations, as well as nominations and awards for teaching excellence. In addition to my undergraduate teaching load, I have mentored students seeking advanced degrees, as well as undergraduate research projects.

I am very actively involved in international engineering education through my leadership roles with IEEE, ASEE, ABET, and the Frontiers in Education (FIE), Global Engineering Education (EDUCON), Teaching Assessment and Learning (TALE), and Learning with MOOCS conferences. I have studied not only the practices of teaching in the United States, but also the practices used in Europe, the Middle East, Africa, and Asia. I have learned much from a worldwide network of peers, and I believe that these relationships have made me a better engineering educator. I have received multiple recognitions of merit for my curriculum design, my contributions to engineering education, and my classroom practice.

- IEEE Fellow, 2018, “For contributions to global on-line engineering education.”
- Oscar Werwath Distinguished Teacher Award, MSOE, 2013
- International Engineering Educator Honoris Causa, International Engineering Education Society (IGIP), 2012, “For outstanding contributions in the field of engineering education and for dedicated work as an engineering educator.”
- Young Engineer of the Year Award, Engineers and Scientists of Milwaukee, 2010
- Warren B. Boast Award for Undergraduate Teaching Excellence, Iowa State University, 1999
- Teaching Excellence Award for Graduate Teaching Assistants, Iowa State University, 1996

My passion for engineering education also translates to active mentorship of junior faculty, recruitment of talented faculty that share my love for the undergraduate teaching mission, continued development of the educational infrastructure, and unwavering assistance and support for faculty that want to continue their professional development through lifelong learning in engineering education theory and practice.

Degrees with Fields, Institutions, and Dates

1. **Doctor of Philosophy**, Computer Engineering, Iowa State University, 1998
   Dissertation: Synthesis of application-specific machines using the Euler language
2. **Master of Science**, Computer Engineering, Iowa State University, 1994
   Thesis: A RISC architecture for FPGAs
3. **Bachelor of Science**, Computer Engineering, Iowa State University, 1992
   Senior Design: A Paging System for McFarland Clinic

Rank Advancement at Milwaukee School of Engineering

1. Years of Service on current Faculty: 22
2. Date of Original Appointment: August 2001
3. Advancement in Rank/Position
   a. Computer Engineering Program Director, June 2022
   b. Professor, September 2012
   c. Associate Professor, September 2005
   d. Assistant Professor, August 2001
4. Primary Responsibilities: Teaching, Administration, and Professional Service

Other Academic Appointments

1. Kansas State University, Assistant Professor, Electrical and Computer Engineering, 1998-2001
2. Iowa State University, Temporary Assistant Professor, Electrical and Computer Engineering, 1997-98
3. Iowa State University, Graduate Teaching Assistant, 1993-97

Honors and Awards Received

1. Meritorious Service Award, ASEE ECE Division, 2022
2. Fellow, IEEE, 2018, For contributions to global on-line engineering education

3. Regional Professional Leadership Award, IEEE-USA, 2015
4. Certificate of Appreciation, IEEE-USA 2015
5. Oscar Werwath Distinguished Teacher Award, MSOE, 2013
6. International Engineering Educator Honoris Causa, International Engineering Education Society (IGIP), 2012, For outstanding contributions in the field of engineering education and for dedicated work as an engineering educator
7. Edwin C. Jones Meritorious Service Award, IEEE Education Society, 2011
8. Distinguished Chapter Leadership Award, IEEE Education Society, 2011
9. Meritorious Service Award, IEEE Global Engineering Education Conference (EDUCON), 2010
10. Young Engineer of the Year Award, Engineers and Scientists of Milwaukee, 2010
11. Ronald J. Schmitz Meritorious Service Award, IEEE Frontiers in Education Conference, 2009
12. Standing Ovation Award, Visit Milwaukee: The Greater Milwaukee Convention and Visitor's Bureau, 2005
13. Certificate of Appreciation - Greek Council, Milwaukee School of Engineering, 2002
14. National Effective Engineering Teachers Institute Fellowship, 1999
15. Warren B. Boast Award for Undergraduate Teaching Excellence, Iowa State University, 1999
16. Sloan Faculty Fellow, IEEE Frontiers in Education Conference, 1997
17. Teaching Excellence Award for Graduate Teaching Assistants, Iowa State University, 1996

Honors and Awards Nominations

1. Oscar Werwath Distinguished Teacher Award, MSOE, 2009, 2011
2. Falk Engineering Educator Award, Milwaukee School of Engineering, 2003, 2004, 2006
3. Presidential Award for Excellence in Undergraduate Teaching, Kansas State University, 2001
4. All-University Presidential Award for Excellence in Undergraduate Teaching, Kansas State University, 2001

5. Professor of the Year Award, Kansas State University Department of Housing and Dining Services, 2000
6. James L. Hollis Memorial Award for Excellence in Undergraduate Teaching, Kansas State University, 2000
7. Who's Who in Engineering Education, 1999, 2003, 2005, 2009, 2010, 2021, 2022
8. Professor of the Year, Iowa State University IEEE Student Branch, 1995
9. VEISHEA Professor of the Year, Iowa State University VEISHEA Central Committee, 1995

Professional Society Memberships and Advancement in Grade

1. IEEE, Fellow, 2018
2. IEEE, Senior Member, 2009-2017
3. IEEE, Member, 1998 – 2008
4. IEEE-HKN, Eta Chapter, 2017 – present
5. IEEE Education Society, 1998 – present
6. IEEE Computer Society, 1992 – present
7. ASEE, Member, 1995 – present
8. ASEE Educational Research and Methods Division, 1995 – present
9. ASEE Electrical and Computer Engineering Division, 1995 – present
10. ASEE First-Year Programs Division, 2021-present

Peer-Reviewed Journal Publications

1. S. Pertuz, O. Reyes, E. S. Cristobal, R. Meier, and M. Castro, "MOOC-Based Flipped Classroom for On-Campus Teaching in Undergraduate Engineering Courses," in IEEE Transactions on Education, early access, doi: 10.1109/TE.2023.3282896
2. E. San Cristóbal Ruiz, R. Pastor Vargas, R. Gil Ortego, R. Meier, H. Saliah-Hassane and M. Castro, "Vulnerability Assessment of Learning Management Systems," in IT Professional, vol. 25, no. 1, pp. 60-67, Jan.-Feb. 2023, doi: 10.1109/MITP.2022.3204640

3. S. Martin, E. Lopez-Martin, A. Moreno-Pulido, R. Meier, and M. Castro, "The Future of Educational Technologies for Engineering Education," in IEEE Transactions on Learning Technologies, vol. 14, no. 5, pp. 613-623, 1 Oct. 2021, doi: 10.1109/TLT.2021.3120771
4. S. Martin, E. Lopez-Martin, A. Moreno-Pulido, R. Meier, and M. Castro, "A Comparative Analysis of Worldwide Trends in the Use of Information and Communications Technology in Engineering Education," in IEEE Access, vol. 7, pp. 113161-113170, 2019. doi: 10.1109/ACCESS.2019.2935019, Open Access URL: http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=8795489&isnumber=8600701
5. Sancristobal, E., Castro, M., Meier, R., et. al. "Virtual and Remote Industrial Lab. Integration in Learning Management Systems", IEEE Industrial Electronics Magazine, December 2014, pp. 45 – 58.

Peer-Reviewed Journal Papers in Review

1. N. V. Mendoza Diaz, S. Y. Yoon, D. A. Trytten, and R. Meier, “Development and Validation of the Engineering Computational Thinking Diagnostic for Undergraduate Students”, IEEE Access, post-review submission

Peer- Reviewed Conference Papers

1. N.V. Mendoza Diaz, R. Meier, D. A. Trytten, J. M. Moore, S. Y. Yoon, H. A. Hogan, “Computational Thinking in the Formation of Engineers: Year 3”, 2023 ASEE Annual Conference & Exposition, Baltimore, Maryland, June 2023
2. N. V. Mendoza Diaz, D. A. Trytten, and R. Meier, “Introductory Engineering Courses With Computational Thinking: The Impact of Educational Privilege and Engineering Major Entry Policy on Student Pathways,” in 2022 IEEE Frontiers in Education Conference (FIE), Uppsala, Sweden: IEEE, Oct. 2022, pp. 1–9. doi: 10.1109/FIE56618.2022.9962501
3. N. V. Mendoza Diaz, R. Meier, D. A. Trytten, J. Moore, and M. Weichold, “Computational Thinking in the Formation of Engineers (Year 2)”, 2022 ASEE Annual Conference & Exposition, Minneapolis, Minnesota, June 2022, https://peer.asee.org/42083

4. Mendoza Diaz, N. V., Trytten, D. A., Meier, R., and Moore, J. M., “The Impact of Prior Programming Experience on Computational Thinking in First-Year Engineering Experience”, CoNECD (Collaborative Network for Engineering & Computing Diversity), New Orleans, Louisiana, February 2022, https://peer.asee.org/39144
5. N. V. M. Diaz, D. A. Trytten, R. Meier, and S. Y. Yoon, "An Engineering Computational Thinking Diagnostic: A Psychometric Analysis," 2021 IEEE Frontiers in Education Conference (FIE), 2021, pp. 1-5, doi: 10.1109/FIE49875.2021.9637142
6. N. V. Mendoza Diaz, R. Meier, D. A. Trytten, S Yoon Yoon, J. Moore, A. Ogilvie, and M. Weichold, “Computational Thinking in the Formation of Engineers (Year 1)”, 2021 ASEE Annual Conference & Exposition, Long Beach, California, July 2021, https://peer.asee.org/36826
7. C. Gonzalez et al., “Gender and STEAM as part of the MOOC STEAM4ALL”, 2021 IEEE Global Engineering Education Conference (EDUCON), Vienna, Austria, April 2021, pp 1643-1647
8. P. Plaza et al., “Build Your Own Robot”, 2021 IEEE Global Engineering Education Conference (EDUCON), Vienna, Austria, April 2021, pp. 548-556
9. P. Plaza et al., "Open Activities and Technologies During COVID19 From The IEEE Student Branch at UNED," 2020 IEEE International Conference on Teaching, Assessment, and Learning for Engineering (TALE), Takamatsu, Japan, 2020, pp. 614-619, doi: 10.1109/TALE48869.2020.9368392.
10. N. V. Mendoza Diaz, R. Meier, D. A. Trytten and S. Yoon Yoon, "Computational Thinking Growth During a First-Year Engineering Course," 2020 IEEE Frontiers in Education Conference (FIE), Uppsala, Sweden, 2020, pp. 1-7, doi: 10.1109/FIE44824.2020.9274250.
11. P. Plaza et al., "Educational Robotics for All: Gender, Diversity, and Inclusion in STEAM," 2020 IEEE Learning With MOOCS (LWMOOCS), Antigua Guatemala, Guatemala, 2020, pp. 19-24, doi: 10.1109/LWMOOCS50143.2020.9234372.
12. P. Plaza et al., "Portable Blended MOOC Laboratory," 2019 IEEE Learning with MOOCS (LWMOOCS), Milwaukee, WI, USA, 2019, pp. 15-20. doi: 10.1109/LWMOOCS47620.2019.8939655

13. E. Tovar et al., "Do MOOCs Sustain the UNESCO's Quality Education Goal?," 2019 IEEE Global Engineering Education Conference (EDUCON), Dubai, United Arab Emirates, 2019, pp. 1499-1503. doi: 10.1109/EDUCON.2019.8725203
14. J. Impagliazzo, J. A. Pow-Sang, I. Trejos, R. Meier and D. J. Nunes, "Latin and American perspectives on the computer engineering (CE2016) report," *2017 IEEE World Engineering Education Conference (EDUNINE)*, Santos, 2017, pp. 9-13. doi: 10.1109/EDUNINE.2017.7918171
15. Impagliazo, J., Conry, S., Durant, E., Hughes, J., and Meier, R., "Launching curricular guidelines for computer engineering: CE2016", 2016 IEEE Frontiers in Education Conference (FIE), Erie, PA, USA, 2016, pp. 1-4
16. Garcia-Loro, F., Sancristobal, E., Diaz, G., Meier, R., y Castro, M, "Practical Competences in a MOOC through Remote Laboratories Electronics Remote Lab Integration into a MOOC", Proceedings of the 2016 Learning with MOOCs Conference, October 2016, electronic publication, 36-page PowerPoint.
17. Martin, S., Meier, R., Cukierman, U., Waigandt, D., Castro., M., "ICT Needs and Trends in Engineering Education", Proceedings of the 2015 International Conference on Interactive Collaborative Learning, September 2015, pp. 146-149.
18. Pancani, M., Meier, R. (As Faculty Advisor), "Architecture for Plug-and-Play Modular Technology", Proceedings of the National Conference on Undergraduate Research (NCUR), April, 2015, pp 665-672.
19. Joaquin, C., Martin, S., Castro, M., Meier, R., "Control of a Remote Laboratory by Augmented Reality", Proceedings of the 2012 IEEE International Conference on Teaching, Assessment, and Learning for Engineering, Hong Kong, Hong Kong, August 2012
20. M. Blazquez, M. Llamas, M. Castro, I. Plaza, E. Tovar and R. Meier, "Are Engineering students decreasing? Spain study case," 2011 Promotion and Innovation with New Technologies in Engineering Education (FINTDI 2011), Teruel, 2011, pp. 1-10. doi: 10.1109/FINTDI.2011.5945975

21. Meier, R., Castro, M., "Engineering Social Media to Teach Engineering," Proceedings of the 2010 International Conference on Interactive Computer Aided Learning, Hasselt, Belgium, 2010
22. Meier, R., Castro, M., Lord, S., "International Professional Societies and Their Role in Transnational Education - the Example of IEEE", Proceedings of the 1st International Conference on European Transnational Education, Burgos, Spain, 2010
23. Gil C., Castro, M., Wyne, M., Meier, R., "Web Tests in LMS Using Fingerprint Identification," Proceedings of the International Conference on Advanced Learning Technologies, Sousse, Tunisia, 2010
24. Martin, S., Sancristobal, E., Gil, R., Castro, M., Peire, J., Meier, R., "Support for Mobile, Ubiquitous, and Pervasive Learning Applications in the Future Internet," Proceedings of the International Conference on Next Generation Networks and Services, Marrakesh, Morocco, 2010
25. Meier, R., Barnicki, S., Barnekow, W., Durant, E., "Work in Progress - Year 2 Results for A Balanced, Freshman-First Computer Engineering Curriculum," Proceedings of the 38th IEEE Frontiers in Education Conference, Saratoga Springs, NY, 2008
26. Meier, R., Barnicki, S., Barnekow, W., Durant, E., "Work in Progress -A Balanced, Freshman-First Computer Engineering Curriculum", Proceedings of the 37th IEEE Frontiers in Education Conference, Milwaukee, WI, 2007
27. Starret, S., Benna, J., DeVault, J., Gallagher, R., Licklider, B., Meier, R., Wiersema, J., "Experiences of K-State's Engineering Faculty with Project LEA/RNâ„¢", Proceedings of the 1999 Frontiers in Education Conference, San Juan, Puerto Rico, 1999
28. Meier, R. D., "Active Learning in Large Lectures", Proceedings of the 1999 ASEE National Convention, Charlotte, NC
29. Meier, R.D., "Fast Digital Prototyping using SAMUEL", accepted for publication in the Proceedings of the 10th Annual IEEE Workshop on Rapid Systems Prototyping", Clearwater, FL, 1999
30. Meier, R. D., "Do We Have to Come to Class? Reflections on Teaching a Web-based Microprocessor Systems Interfacing Course," Proceedings of the 1998 Frontiers in Education Conference, Tempe, AZ, November 1998

31. Meier, R. D., "Good Morning Cedar Rapids. Do you have Audio? Reflections on Teaching a University Distance Education Course," Proceedings of the1997 Frontiers in Education Conference, Pittsburgh, PA, November 1997
32. Meier, R. D., Wright, C. T., "A Rapid Prototyping Framework for Teaching Undergraduate Digital Logic Design," Proceedings of the 1997 International Conference on Simulation in Engineering Education, Phoenix, AZ, January 1997
33. Meier, R. D., Wright, C. T., "The Use of Simulation Based Laboratory Exercises to Enhance The Undergraduate Digital Logic Design Experience," Proceedings of the 1996 Frontiers in Education Conference, Salt Lake City, UT, November 1996
34. Meier, R.D., "A Rapid Prototyping System for Implementing Custom Computing Machines in Field Programmable Gate Arrays", Proceedings of the Third Canadian Workshop on Field Programmable Devices (FPD 95), Montreal, Canada, 1995
35. Meier, R.D., "Rapid Prototyping of a RISC Architecture for Implementation in FPGAs", Proceedings of the IEEE Symposium on FPGAs for Custom Computing Machines (FCCM 95), Napa, CA, 1995

Peer-Reviewed Conference Papers in Review

1. N. V. Mendoza Diaz, R. Meier, D. A. Trytten, “Special Session: Using the Engineering Computational Thinking Diagnostic for student assessment, curriculum refinement, and educational privilege identification.”, *working title*, 2023 IEEE Frontiers in Education Conference, College Station, Texas, USA, October 2023

Whitepapers

1. Castro, M., Martin, S., Torres, D., Meier, R., Johnson, L, Adams Becker, S., “Technology Outlook STEM+ Education 2013-2018: An NMC Horizon Project Sector Analysis”, October 2013, http://go.nmc.org/2013-stem
2. Martin, S., Meier, R., Castro, M., "Necesidades y Tendencias Tecnologicas en el Ambito Educativo de la Ingenieria", Joint Publication of the IEEE Education Society and the Spanish Distance University Technologies for Engineering Education Research Group (http://ohm.ieec.uned.es/eer/index.php), October 2012

3. Castro, M., Martin, S., Meier, R., Torres, D., Johnson, S., Adams, A., "Technology Outlook STEM+ Education 2012-2017: An NMC Horizon Project Sector Analysis", September 2012, stem.wiki.nmc.org

Invited Publications

1. R. Meier, "2022 IEEE Education Society Awards," in IEEE Transactions on Education, vol. 66, no. 2, pp. 197-199, April 2023, doi: 10.1109/TE.2023.3261199
2. J. J. Sluss, R. Meier and S. E. Watkins, "2021 IEEE Education Society Awards," in IEEE Transactions on Education, vol. 65, no. 1, pp. 101-104, Feb. 2022, doi: 10.1109/TE.2021.3136370
3. Meier, R., “President’s Message”, IEEE Education Society Newsletter, October 2020, https://ieee-edusociety.org/about/newsletter-archive
4. Meier, R., “President’s Message”, IEEE Education Society Newsletter, May 2020, https://ieee-edusociety.org/about/newsletter-archive
5. Meier, R., “President’s Message”, IEEE Education Society Newsletter, December 2019, https://ieee-edusociety.org/about/newsletter-archive
6. Meier, R., “President’s Message”, IEEE Education Society Newsletter, July 2019, https://ieee-edusociety.org/about/newsletter-archive
7. Meier, R., “President’s Message”, IEEE Education Society Newsletter, April 2019, https://ieee-edusociety.org/about/newsletter-archive
8. Meier, R. “Professional Profile of Dr. Russ Meier, Eta Chapter ‘18”, IEEE-HKN The Bridge Magazine, Vol. 115, Issue 2, pp. 28-31, 2019
9. Meier, R., “Chair’s Message”, ASEE ECE Division Newsletter, May 2017
10. Meier, R., “Chair’s Message”, ASEE ECE Division Newsletter, April 2017
11. Meier, R., “Chair’s Message”, ASEE ECE Division Newsletter, February 2017
12. Meier, R., “Chair’s Message”, ASEE ECE Division Newsletter, October 2016
13. Meier, R., “Chair’s Message”, ASEE ECE Division Newsletter, September 2016
14. Meier, R., “Chair’s Message”, ASEE ECE Division Newsletter, August 2016
15. Meier, R., "Always Challenge Yourself to Learn More About Teaching", guest editorial, IEEE RITA - Latin America Learning Technology Journal, May 2011

Invited Presentations

1. Panelist, "TALE For the Next Decade: Celebrating the 10th Anniversary of the IEEE TALE Conference", International Conference on Teaching, Assessment, and Learning for Engineering (TALE), Hong Kong, December 2022
2. Panelist, "Academic Career Toolbox: Applying for a First Time Tenure Track Position – Making your Case as a Candidate", IEEE Academic Career Toolbox Webinar Series, August 2022, Available On-Demand at https://tinyurl.com/pathways-make-a-case
3. Panelist, "Writing Successful Nominations for HKN Awards", HKN-Connection podcast, 2021
4. Distinguished Lecturer, "Making Labs Effective with Remote Learning", IEEE Effective Remote Instruction Webinar Series, July 2020, Available on-Demand at https://tinyurl.com/ieee-remote-instruction.
5. Distinguished Lecturer, "Using eLearning to Support Distance Learning", IEEE Webinar, March 2020
6. Panelist, IEEE Education Society President, "IEEE Division VI Impact", International Symposium on Technology and Society (ISTAS 2019), November 2019
7. Banquet Speaker, "Professional Societies as a Vehicle for Continuing Education for Teachers of Engineering", IEEE Teaching, Assessment, and Learning in Engineering Education Conference (TALE), Bangkok, Thailand, December 2016
8. Distinguished Guest, Opening Comments, IEEE Teaching, Assessment, and Learning in Engineering Education Conference (TALE), Bangkok, Thailand, December 2016
9. Distinguished Guest, Opening Comments, IEEE Frontiers in Education Conference (FIE), Opening Day Luncheon, El Paso, Texas, October 2016
10. Distinguished Guest, Opening Comments, IEEE Global Engineering Education Conference (EDUCON), Abu Dhabi, United Arab Emirates, April 2016
11. Keynote Speaker, "Flipping the Classroom, the Laboratory, and Social Media to Scaffold Engineering Design Instruction for First Year Students", International Conference on Remote Engineering and Virtual instrumentation, February 2016, Madrid, Spain
12. Distinguished Guest, Opening Comments, IEEE Teaching, Assessment, and Learning in Engineering Education Conference (TALE), Zhuhai, China, December 2015

13. Distinguished Guest, Opening Comments, IEEE Frontiers in Education Conference (FIE), Opening Day Luncheon, El Paso, Texas, October 2015
14. Distinguished Guest, Opening Comments, IEEE Global Engineering Education Conference (EDUCON), Tallin, Estonia, March 2015
15. Distinguished Guest, Opening Comments, IEEE Teaching Assessment and Learning in Engineering Education Conference (TALE) Awards Banquet, Wellington, New Zealand, December 2014
16. Distinguished Guest, Opening Comments, IEEE Frontiers in Education Conference (FIE) Opening Day Luncheon, Madrid, Spain, October 2014
17. Panelist, "Pursuing the Frontiers: The History and Future of the Frontiers in Education Conference", 44th IEEE Frontiers in Education Conference (FIE), Madrid, Spain, October 2014
18. IGNITE! Keynote Speaker, "Professional Membership Recruitment at Conferences", IEEE Sections Congress 2014, Amsterdam, Netherlands, August 2014
19. Distinguished Guest, Welcoming Comments, IEEE Ethics Conference (ETHICS), Chicago, Illinois, May 2014
20. Distinguished Guest, Opening Comments, IEEE Global Engineering Education Conference (EDUCON), Istanbul, Spain, April 2014
21. Campaign Endorsement, "Dr. Manual Castro – A Visionary Leader for the Spanish Distance University", only North American asked to submit a campaign endorsement video by the Castro campaign for Rector, Universidad Nacional de Educacion a Distancia (UNED) television, Madrid, Spain and worldwide on the UNED youTube™ channel, May 2013
22. Keynote Speaker, "Global Trends in Engineering Education", 15th Annual International Conference on Interactive Collaborative Learning (ICL 2012), Villach, Austria, September 2012
23. Keynote Speaker, "Checking Up on Social Media in Education", 10th Congress on Technologies Applies to Electronics Teaching (TAEE 2012), Vigo, Spain, June 2012
24. Invited Keynote Speaker, INTERTECH 2012, Dili, East Timor, March 2012
25. Invited Keynote Speaker, ICECE 2011, Guimaraes, Portugal, September 2011

26. Invited Keynote Speaker, IGIP 2011, Santos, Brazil, March 2011
27. Keynote Speaker, "Engineering Social Media to Teach Engineering", Universidad Nacional de Educacion a Distancia (UNED), Madrid, Spain, December 2010
28. Distinguished Guest, Opening Comments, NGNS 2010 Opening Ceremonies, Marrakech, Morocco, July 2010
29. Distinguished Guest, Opening Comments, EDUCON 2010 Opening Ceremonies, Madrid, Spain, April 2010
30. Keynote Speaker, "Engineering Education through Professional Development", 11th International Conference on Engineering and Technology Education (INTERTECH 2010), Ilheus, Brazil, March 2010
31. Distinguished Guest, Opening Comments, INTERTECH 2010, Ilheus, Brazil, March 2010
32. Keynote Speaker, "Engineering Social Media to Teach Engineering" 1st International Conference on Development and Innovation with New Technologies in Engineering Education (FINTDI 2009), Vigo, Spain, December 2009
33. Guest Speaker, "Synthesizing Algorithmic Machines Using Interpretive Models and Gate Arrays", Department of Electrical and Computer Engineering, Wichita State University, 1998
34. Panelist, "Stresses, Struggles, and Surprises of the First Few Years of Faculty Life", NSF Engineering Educators Workshop, 1998
35. Panelist, "The Challenges Ahead for Engineering Education", Sloan Faculty Fellow Panel, Frontiers in Education Conference, 1997

Open Datasets

1. Sergio Martin, Manuel Castro, Russ Meier, Esther López-Martín, Alexis Moreno-Pulido, September 20, 2021, "Engineering Education Technologies Report 2019", IEEE Dataport, doi: https://dx.doi.org/10.21227/1hgf-ch36

Key Examples of Executive Leadership and Senior Management Positions

My curriculum vitae lists more than thirty executive leadership and senior management positions within academics, professional societies and engineering accreditation. These leadership roles have prepared me for rigorous time management, interpersonal communication, financial prudence, personnel motivation, personnel hiring, personnel dismissal, strategic planning, and innovative thinking. These roles required me to lead and motivate teams of volunteers and to collaboratively work with paid staff. Leading volunteers is a complex skill very different from paid employees because of variations in volunteer motivation as well as the lack of power structure that comes from employment. Key examples and deliverables are:

- **Program Director for Computer Engineering**: At MSOE, I lead the Bachelor of Science in Computer Engineering. I report directly to the Chair of the Electrical Engineering and Computer Science Department. As Program Director, I must ensure the program meets the ABET Criteria for Accrediting Engineering Programs. My responsibilities include monitoring student progress, ensuring students are advised on program and career matters, ensuring recruitment and enrollment policies are implemented and enforced, interacting with industry through the program industrial advisory committee to guarantee alumni are obtaining growth objectives post-graduation, managing and overseeing the curriculum to ensure students meet student outcomes, implementing the program continuous improvement plan, and working with the department to ensure the program is appropriately staffed and supported by appropriate campus facilities.

- **IEEE Education Society President**: During my two years as President of the IEEE Education Society, I managed an elected board of twelve, four vice presidents, and four additional executive officers. I led strategic planning on products and services delivered to our international community of members. I hired staff, reduced force through dismissal of one staff member, and managed an approximate one-million-dollar budget operating on a reserve balance of 1.6 million. I worked with staff to write the Society's first operational plan. I initiated review and action on cost-centers and negotiated with vendors. My actions on cost-centers resulted in reduction of expenditures by $75,000. I initiated and led membership engagement actions that resulted in a new master-brand, the creation of a quarterly newsletter, promotional materials in five languages, and new social-media channels. New products were developed and delivered including an IEEE standard in Smart Network Objects for Remote Laboratories, an open-access engineering education journal and two highly successful webinar series that attracted ten thousand participants. I led the Society in thoughtful delivery of products to engineering educators

during the COVID-19 pandemic resulting in significant year-to-year membership growth.

- **IEEE Education Society Vice President of Conferences**: Over nine years, I directly reported to the President of the Education Society and the Board of Governors as I led and grew the conference portfolio. When I started in this role, the Society had one flagship conference, Frontiers in Education (FIE) – considered by many to be the world's best conference in engineering education. During my tenure, I completed strategic and operational plans that resulted in three new flagship events in Europe (EDUCON), Asia (TALE), and South America (EDUNINE). I chaired large steering committees, negotiated with vendors, oversaw budgeting, liaised between IEEE headquarters and the Society, and wrote and implemented policies and procedures.

- **IEEE Committee on Engineering Accreditation**: As a member society of ABET, IEEE is responsible for choosing and assigning program evaluators to institutions offering degrees related to the IEEE fields of interest. IEEE makes these assignments from its pool of more than 200 program evaluators. Members of this committee are chosen because they have shown excellence in the field as program evaluators. As a member of this committee, I trained program evaluators, mentored program evaluators every year as they visited institutions, collected assessment data on each program evaluator's performance, and voted on remedial training for program evaluators that showed poor performance. The committee is also responsible for writing and updating all program criteria where IEEE is the lead society, the co-lead society, or a cooperating society. During my six years on this committee, we have reviewed and made minor edits to the program criteria for "Electrical, Computer, Communications, Telecommunications, and Similarly Named Engineering Programs" and we worked with co-lead societies to write the program criteria for "Cybersecurity Engineering and Similarly Named Engineering Programs."

- **IEEE International ABET Program Evaluator**: Program evaluators in this small, elite group show excellence in program evaluation, diplomacy when interacting with foreign institutions, tactfulness, cultural sensitivity, and appreciation for alternative models of education and the varied types of delivery practice. I have made four international visits.

- **ABET Engineering Accreditation Commission**: The Engineering Accreditation Commission is the body of senior accreditation volunteers responsible for accrediting all domestic and international engineering degrees seeking accreditation from ABET. As a member of the commission, I interact with the administration at institutions, lead visit teams to institutions, mediate discussions among visit team members, edit statements during visits, edit statements into a final draft statement sent to the institution, work with

teams to review institutional due process responses, complete a final statement with recommended accreditation actions, and present the institution and its accreditation actions at the annual commission meeting. I serve on the commission Criteria Committee. I co-chaired a subcommittee developing program criteria for Mechatronics, Robotics, and Similarly named Engineering Programs.

- **ASEE Faculty Teaching Excellence Taskforce**: The ASEE Board of Directors appointed me to this taskforce charged with drafting a feasibility study for a certification program for engineering educators. We delivered the study to ASEE in 2019 detailing an Institute for Engineering Teaching Excellence. Subsequently, ASEE appointed me to a new taskforce charged with implementing the institute. We will complete constituent education, collect feedback, write an implementation timeline, and suggest the next steps to operationalize the institute. The institute will provide training to engineering faculty choosing to register as an engineering educator (REE). Later stages of training will result in certification as Certified Engineering Educator (CEE), Master Certified Engineering Educator (MCEE) and finally Senior Certified Engineering Educator (SCEE). This program has the potential to dramatically change professional development of United States engineering educators. The impact on future generations of students will be significant.

List of Academic Executive Leadership and Senior Management Positions

1. Program Director, Bachelor of Science, Computer Engineering, Milwaukee School of Engineering, 2022 - present

List of Professional Society Executive Leadership and Senior Management Positions

1. IEEE Technical Activities Board Society Review Committee, 2023
2. IEEE-HKN Board of Governors, Governor-at-Large, 2022, 2023
3. IEEE-HKN On-boarding Ad-Hoc Subcommittee, Chair, 2023
4. IEEE-HKN Awards Committee, Chair, 2023
5. IEEE Education Society, Senior Past President, 2023
6. IEEE Education Society, Awards Chair, 2022, 2023
7. IEEE Education Society, Junior Past President, 2021, 2022
8. IEEE Educational Activities Board, Awards and Recognition Committee, 2023
9. IEEE Educational Activities Board, TAB Representative, 2021, 2022, 2023
10. IEEE Educational Activities Board, Faculty Resources Committee, Member, 2022

11. IEEE Educational Activities Board, University Resources Committee, Member, 2021, 2022, 2023
12. IEEE Educational Activities Board, Teaching Excellence Hub Steering Committee, 2020, 2021, 2022, 2023
13. IEEE Ad-Hoc on Future Financial Stability of Societies and Councils, Member, 2021
14. ASEE Faculty Teaching Excellence Taskforce, 2020 – present
15. IEEE Education Society, President, 2019, 2020
16. IEEE Technical Activities Board, Society President, 2019, 2020
17. IEEE Future Directions Committee, Member, 2019
18. IEEE Region 4 Conferences Committee, Chair, 2019 – 2022
19. ASEE Taskforce on Educational Proficiency, 2019, 2020
20. IEEE Educational Activities Board Faculty Resource Committee Chair, 2018, 2019
21. IEEE Education Society, President-Elect, 2017, 2018
22. ASEE Electrical and Computer Engineering Division, Past Chair, 6/2017 – 6/2018
23. ASEE Electrical and Computer Engineering Division, Chair, 6/2016 – 6/2017
24. IEEE Committee on Engineering Accreditation Activities, 2016 – 2018
25. ASEE Electrical and Computer Engineering Division, Chair-Elect, 6/2015 – 6/2016
26. IEEE Milwaukee Section, Past Chair, 2017, 2018
27. IEEE Milwaukee Section, Chair, 2015, 2016
28. IEEE Conferences Committee, 2016, 2017, 2018
29. IEEE Region 4 Membership Engagement Working Group, 2016 – 2018
30. IEEE Region 4 Conferences Committee, Co-Chair, 2017 – 2018
31. ASEE Electrical and Computer Engineering Division, Program Chair, 6/2014-6/2015
32. ASEE Electrical and Computer Engineering Division, Secretary/Treasurer, 6/2013-6/2014
33. IEEE Milwaukee Section, Vice Chair, 2014, 2015
34. IEEE Education Society, Vice President of Conferences and Workshops, 2008 - 2017
35. IEEE Education Society, Strategic Planning Subcommittee, 2008 - present
36. IEEE Milwaukee Section, Education Society Chapter Chair, 2008 - present
37. IEEE Milwaukee Section, Executive Committee, 2008 - present

38. IEEE Education Society, Constitution and Bylaws Subcommittee, 2004
39. IEEE Education Society, Board of Governors, Member-at-Large, 2003 – 2008
40. IEEE Region 4 Graduates of the Last Decade (GOLD) Chair, 2002

List of Engineering Accreditation Executive Leadership and Senior Management Positions

1. Engineering Accreditation Commission, ABET, Criteria Committee, 2021, 2022, 2023
2. Engineering Accreditation Commission, ABET, Mechatronics Program Criteria Subcommittee, Co-Chair, 2021, 2022
3. Engineering Accreditation Commission, ABET, 2019, 2020, 2021, 2022, 2023
4. Engineering Accreditation Commission Alternate, ABET, 2018
5. IEEE Committee on Engineering Accreditation Activities, 2016 – 2018
6. International Program Evaluator, Computer Engineering, ABET, 2014 – present
7. Program Evaluator, Electrical and Computer Engineering, ABET, 2011 – present
8. Consultant, Computer Engineering ABET self-study preparation, 2011 – present

Executive Management Style

I have developed a collaborative, democratic management style that avoids micromanagement unless the owner of an action item is not making progress. I believe that people need room to operate but that they also need to know that I will back them if something goes wrong. I practice active listening, provide support, and control my emotions. I am always open to new ideas, team approaches, and collaborations that cross multiple organizations units. I try to unite my team when it is facing hard issues. I practice an acronym called "stop": **s**tep back, **t**ake a breath, **o**bserve, and **p**roblem solve. I have found this works well to help me navigate challenges. I am not afraid to talk about uncomfortable truths when needed. My record supports that I am not risk adverse but have the common sense to thoughtfully evaluate opportunities before acting.

Institutional Service

1. Program Directors Council, MSOE, Chair, 6/2023 – present
2. Computer Engineering Program Director, MSOE, 2022 – present
3. Council for Academic Planning (CAP), MSOE, 2022 – present
4. Program Directors Council, MSOE, 2022 – present
5. Undeclared Pathways Committee, MSOE, Co-Chair, 2021 – present

6. Semester Common Course Committee, MSOE, Co-Chair, 2020 – 2021
7. Strategic Planning Implementation Committee, MSOE, 2018 – present
8. Strategic Planning Academic Calendar Taskforce, MSOE, Co-Chair, 2018, 2019
9. Strategic Planning Employer Survey Taskforce, MSOE, 2018
10. Strategic Planning Committee Internal Operations Taskforce, MSOE, 2017
11. Strategic Planning Committee, MSOE, 2017, 2021
12. Carter Academy Faculty Fellow, MSOE, 2016 – present
13. Faculty In-service Planning Committee, MSOE, 2014
14. Honorary Degree Committee, MSOE, 2013, 2014
15. Academic Facilities Committee, Chair, MSOE, 2011-2015
16. Academic Advising Committee, MSOE, 2009-2012
17. Graduate Programs Council, MSOE, 8/2009-5/2010
18. College Faculty Academic Review Committee (CFARC), Chair, MSOE, 2008
19. College Faculty Academic Review Committee (CFARC), Member, MSOE 2007
20. Faculty In-Service Planning Committee, MSOE, 2004, 2005
21. Graduate Programs Council, Faculty Senate Representative, MSOE, 8/2002-5/2003
22. College of Engineering Learning Effectiveness Committee, Kansas State, 1999-2001

Unpaid Service to Other Institutions

1. External Promotion and Tenure Peer-Reviewer, University of Louisville, 2021
2. External Promotion and Tenure Peer-Reviewer, University of New Hampshire at Manchester, 2019
3. External Promotion and Tenure Peer-Reviewer, University of Texas at Tyler, 2016
4. External Research Continuation Peer-Reviewer, Universidad Carlos III de Madrid, Madrid, Spain, 2016
5. External Engineering Education Research Expert, Research Proposal Review Committee, United International College, Zhuhai, China, 2015
6. External Promotion and Tenure Peer-Reviewer, University of Wisconsin, 2015

Departmental Service

1. Performance Expectation and Assessment Committee, Chair, MSOE, 8/2022 – 5/2023
2. Performance Expectation and Assessment Committee, MSOE, 8/2021-5/2022
3. Performance Expectation and Assessment Committee, Chair, MSOE, 9/2019 – 5/2020
4. Performance Expectation and Assessment Implementation Committee, MSOE, 9/2018 – 5/2019
5. Mission and Vision Statement Review Committee, MSOE, 9/2013 – 5/2014
6. Promotion Guidelines Review Committee, MSOE, 9/2012 – 5/2013
7. Faculty Senate, MSOE, 9/2008 – 5/2010
8. Academic Advisor, Computer Engineering, MSOE, 2005 – present
9. New Student Recruitment Open House Participant, MSOE, 2005 – 2019
10. Computer Engineering Program Committee, MSOE, 2003 – present
11. Faculty Senate, MSOE, 8/2002 – 5/2005
12. Academic Advisor, Electrical Engineering, MSOE, 2002
13. Discover the Possibilities Summer Program for K12 Students, EECS Lead Coordinator and Computer Engineering Teacher, MSOE, 2002 – present
14. Digital Systems Subcommittee, MSOE, 2002-2006
15. Analog Systems Subcommittee, MSOE, 2002-2006
16. Electrical Engineering Program Committee, MSOE, 2001-2003
17. Academic Affairs Subcommittee on Evening Exams, Kansas State, 2000-2001
18. Computer Engineering Curriculum Committee, Kansas State University, 2000-2001
19. Academic Progress Committee, Kansas State, 1999-2001
20. Equipment Committee, Kansas State, 1998-99
21. Faculty Search Committee, Kansas State University, 1998-99

Service to Conferences

1. Learning with MOOCS Conference, Steering Committee Chair, 2022 – present
2. Frontiers in Education Conference Helen Plants Awards Committee Chair, 2022
3. Frontiers in Education Conference Helen Plants Awards Committee, 2020, 2021, 2022
4. General Chair, Learning with MOOCS Conference, 2019

5. Frontiers in Education Conference Dasher Awards Committee Chair, 2018
6. Frontiers in Education Conference Dasher Awards Committee, 2017, 2018, 2019
7. Panel Moderator, ASEE National Conference and Exhibition, 2015
8. Technical Program Chair, ECE Division, ASEE National Conference and Exhibition, 2015
9. General Chair, Organizing Committee, IEEE-USA National Conference, 2015
10. Session Chair, IEEE Global Engineering Education Conference, 2015
11. General Chair, Organizing Committee, IEEE Region 4 Electro/Information Technology Conference, 2014
12. Technical Program Chair, IEEE Frontiers in Education Conference, 2014
13. Session Chair, ASEE National Conference and Exhibition, 2014
14. Session Chair, IEEE Global Engineering Education Conference, 2014
15. Steering Committee, IEEE-USA National Conference, 2013 – 2016
16. Steering Committee, IEEE Ethics Conference, 2013 – 2015
17. Steering Committee, IEEE TALE Conference, 2011 – 2018
18. Awards Committee, IEEE EDUCON Conference, 2011 – 2018
19. Program Committee, INTERTECH Conference, 2010
20. Session Chair, IEEE EDUCON Conference, 2010
21. Steering Committee, IEEE EDUCON Conference, 2008 – 2018
22. Chair, IEEE Frontiers in Education Conference RFP Subcommittee, 2008 - 2018
23. Steering Committee, IEEE Region 4 Electro/Information Technology Conference, 2008 – 2016
24. Steering Committee, IEEE Frontiers in Education Conference, 2007 – 2019
25. General Chair, Organizing Committee, 37th Annual IEEE Frontiers in Education Conference, Milwaukee, 2007
26. General Chair, IEEE Region 4 Electro/Information Technology Conference, 2004
27. New Faculty Fellows Chair, Organizing Committee, Frontiers in Education Conference, 2000-2006, 2008
28. Planning Committee, Frontiers in Education Conference, 2000 – 2002
29. ASEE National Convention, Session Chair, 1999 – present

30. Frontiers in Education Conference, Reviewer, 1998 – present
31. Session Chair, Frontiers in Education Conference, 1998 – present

Other Professional Development and Activities

1. Attendee, IEEE Learning with MOOCs Conference, 2018 - present
2. Attendee, IEEE Teaching Assessment and Learning in Engineering Education Conference, 2012 - present
3. Attendee, IEEE Global Engineering Education Conference, 2010 - present
4. Attendee, ABET Program Evaluator Training, 2010
5. Attendee, ASEE National Convention, 1999 - present
6. Attendee, NASA/DOD Workshop on Evolvable Hardware, 1999
7. Participant, National Effective Engineering Teachers Institute, 1999
8. Participant, Engineering LEA/RN Faculty Development Program, Kansas State University, 1998-2001
9. Attendee: IEEE Frontiers in Education Conference, 1998 - present
10. Participant, Project LEA/RN Faculty Development Program, Iowa State University, 1997 – 1998
11. National Science Foundation Young Engineering Educators Workshop, 1997

Research Statement

I have built collaborative relationships with two multi-institutional engineering education research groups over the past decade.

- The first research group is based in Madrid, Spain at the Universidad Nacional de Educación at Distancia. Led by co-PIs Dr. Manuel Castro and Dr. Sergio Martin, our research group investigates the use of technology to deliver education at a distance. Much of our work is in remote laboratories – facilities constructed at one institution and accessed remotely through software interfaces such as the Sharable Content Object Reference Model (SCORM). Due to European residency requirements, my contributions as collaborator are unfunded. But our work together has resulted in international recognition, five journal papers, nine conference papers, and three whitepapers.

- The second research group was initiated in 2017. Our work is currently funded by a United States National Science Foundation grant totaling nearly one-half million dollars split between the three institutions. I am a lead co-PI along with an Assistant Professor of Engineering Technology and Industrial Distribution at Texas A&M University and a Professor of Computer Science at the University of Oklahoma. Our group is extending the knowledge base in how computational thinking develops in first-year engineering students, how enculturation of first-year students into the engineering field is affected by courses in computation, and how intersectionality results in implicit bias and discrimination in computing courses. The first phase of this three-year grant statistically validated an Engineering Computational Thinking Diagnostic that we designed to measure computational thinking skills development using pre-post application in student cohorts. The second phase began in summer 2021 when we started semi-structured interviews with student cohorts where we qualitatively measure motivation, enculturation, and the effects privilege have on computing success. Our work has been publicly disseminated in seven conference papers to-date. The first journal paper from this research is in final editorial review before publication in the open-access journal IEEE Access. The project website is http://ectd.engr.tamu.edu.

Technical Specialties

1. Computer Architecture
2. Digital Logic
3. Digital Electronics
4. Embedded Systems

Research Interests

1. Education Research Interest: Computational Thinking and its effect on enculturation into engineering.
2. Education Research Interest: The use of computer technology and social media as pedagogical delivery agents.

3. Education Research Interest: The effect of hands-on engineering in the freshman year on cross-disciplinary skills development.
4. Technical Research Interest: The design of modern computer architectures and embedded systems.
5. Technical Research Interest: Evolutionary digital design using genetic algorithms to search the space of design solutions, the design and analysis of circuits generated using rapid prototyping frameworks and heuristics, the exploration of adaptive architectures using field programmable gate arrays, and the exploration of parallel computing systems within networks of field programmable gate arrays.

Grants Received

1. Mendoza, N., Meier, R., and Trytten, D., "Computational Thinking in the Formation of Engineers, a Multi-institution Initiative", $463,000 (Total), $51,192 (MSOE), U.S. National Science Foundation, June 2019, https://tinyurl.com/nsf-abstract-1917352

   Short Summary: Previous research has demonstrated that while engineering and computational skills have substantial overlap, many engineering students have little or no prior experience with computational thinking. The goal of this project is to improve the way that computational thinking is taught in colleges of engineering by understanding multiple factors that affect computational thinking development.

   Current Status: The research team validated an Engineering Computational Thinking Diagnostic designed to measure pre-post performance by engineering students in the first year of their academic degree. The research has moved to a second phase exploring how privilege and intersectionality impact success in first-year engineering courses that include computation.

   Status of Dissemination Activities: Seven published conference papers, one journal paper in final editorial review before publication, diagnostic dissemination on demand began 9/2023, project website: https://ectd.engr.tamu.edu/

2. Meier, R., “Modern Mobile Robotic Platform for First-Year Computer Engineering Courses”, $9,000, Rockwell Collins Charitable Corporation

   Short Summary: This project resulted in the design, fabrication, and deployment of fifty mobile robots. The robot, called the MSOE Digi-bot, is designed to teach digital logic and computer architecture. Sensors, actuators, prototyping space for 7400 integrated circuit robotic control, and an Intel FPGA for robotic control provide a robust platform for student experimentation.

3. Sobering, T.J., Meier, R., "Post-delivery Support for ICCD Detector", $25,000, U.S. Department of Energy, April 2001

   Short Summary: This grant is under a non-disclosure agreement.

4. Sobering, T.J., Meier, R., "ICCD Detector Readout Development Project Extension", $50,000, U.S. Department of Energy, July 2000 (Project total: $229, 567)

   Short Summary: This grant is under a non-disclosure agreement.

5. Meier, R., "Matching the LSI Logic and Microsoft Gifts for the Microcontrollers Laboratory", Kansas State University Student Equipment Fees, $10,000, 2009

   Short Summary: This grant provided laboratory infrastructure upgrades.

6. Meier, R., "Microsoft Sponsored Grant for Software Licenses", $47,800, Microsoft Incorporated, July 2000

   Short Summary: This grant provided laboratory infrastructure upgrades.

7. Meier, R., "Adding Windows CE Architectures to the Embedded Systems Coursework at Kansas State University", $4000 equipment donation, Microsoft Incorporated, Sept. 1999

   Short Summary: This grant provided laboratory infrastructure upgrades.

8. Meier, R., "Upgrading the Computers in the Kansas State University Microcontrollers Laboratory", $10,000, LSI Logic Incorporated, Sept. 1999

   Short Summary: This grant provided laboratory infrastructure upgrades.

9. Sobering, T.J., Meier, R., "ICCD Detector Readout Development", $179,567, U.S. Department of Energy, May 1999

   Short Summary: This grant is under a non-disclosure agreement.

10. Meier, R., "Logic Analyzers", $14,800, Kansas State University Student Equipment Fees, 1998

    Short Summary: This grant provided laboratory infrastructure upgrades.

Doctor of Philosophy Students Advised

1. Martin, S., M2Learn: “Framework for Development of Mobile and Ubiquitous Learning Applications”, 2010
   Committee, Universidad Nacional de Educacion a Distancia (UNED)

Master of Science Students Advised

1. Laubhan, M., “Extrinsic Genetic Evolution of Turbo Encoder Configurations Using Rapidly Reconfigurable Hardware”, 2001
   Major Professor, Kansas State University

2. Dandy, J., "Thermal Control System for Microgravity Isoelectric Focusing", 2000
   Committee, Kansas State University
3. Rust, B., "Neuro-fuzzy Control of Voltage/VAR Under Simulated Conditions", 2000
   Committee, Kansas State University

Master of Science in Engineering Students Advised

1. Vikberg, G., "Cluster Computing Using Playstation 3 Hardware", 2013
   Major Professor, MSOE
2. Wowerat, E., "Design of a Universal Governor Control System", 2011
   Major Professor, MSOE
3. Prust, A., "Object-oriented Design of Fuzzy Systems Using UML and
   Design Patterns", 2003
   Major Professor, MSOE
4. Schmidt, R., "Portable Pulse Rate Meter", 2003
   Committee, MSOE
5. Auton, D., "Review Process Automation for Company Website Content
   Deployment", 2002
   Committee, MSOE

Undergraduate Research Students Advised

1. Undergraduate Research (UG), Faculty Advisor, MSOE, Pancani, Michele, Interface for Plug-and-Play Modular Technology, 2015
2. Undergraduate Research (UGR), Faculty Advisor, MSOE, Barge, I., A Genetic Algorithm Engine for Dynamic Evolution of Digital and Analog Filters on Mixed-Signal Programmable System-on-Chip Architectures, 2014

MSOE – Technische Hochschule Lübeck Diploma Thesis Students Advised

1. Diploma Thesis, Faculty Advisor, MSOE, Masuch, J., 2002

Courses Taught at MSOE

Listed by numerical course ID across multiple catalogs. Not listed chronologically. Bold highlighted courses are courses where I designed catalog descriptions, course learning outcomes, day-to-day student learning outcomes, weekly schedule, homework exercises, quizzes, exams, final exams, and laboratories. In non-highlighted courses, I designed day-to-day student learning outcomes, homework exercises, quizzes, exams, final exams, and laboratories that were not common across all sections. In these courses, other faculty were responsible for catalog descriptions, course learning outcomes and common laboratories.

1. **CE498**: Topics in Computer Engineering – Memory and I/O Systems
2. **CE498**: Topics in Computer Engineering – Fault Tolerance
3. **CE1900**: Combinational Systems (with VHDL)
4. **CE1901**: Digital Logic 1 (combinational systems with VHDL)
5. **CE1910**: Sequential Systems (with VHDL)
6. **CE1911**: Digital Logic 2 (combinational systems with VHDL)
7. **CE1921**: Computer Architecture (with VHDL)
8. CE2811: Embedded Systems II (system level C programming and control)
9. **CE2930**: Introduction to Computer Architecture (with VHDL)
10. **CE3100**: Digital Electronics and Computer Interfacing
11. **CE3101**: Digital Electronics and Computer Interfacing
12. **CE3200**: Wireless Sensor Networks
13. CE3910: Embedded Systems III (quarter long project course)
14. **CE4920**: Embedded Systems IV (requirements, specifications, fault tolerance)
15. **CE4930**: Computer Architecture II (superscalar processors)
16. **CE4940**: VLSI Design Techniques
17. CE4950: Networking 1 (internet, data link, and physical layers)
18. **CE4951**: Networking 1 (internet, data link, and physical layers)
19. **CPE1500**: Digital Logic
20. **CPE1510**: Computer Architecture and Assembly Language
21. **CPE4510**: Superscalar, Multicore, and Multiprocessor Architecture

22. **CPE4520**: Memory System and I/O System Architecture
23. CS321: Computer Graphics
24. CS384: Design of Operating Systems
25. CS3841: Design of Operating Systems
26. CS391: Embedded Systems Design
27. CS393: Computer Architecture
28. CS495: Data Communications and Networking
29. EE1910: Introduction to Embedded Systems and Digital Electronics
30. EE201: Linear Networks: Steady-State Analysis
31. EE202: Linear Networks: Transient Analysis
32. **EE210**: Electronics and Computer Interfacing
33. EE290: Combinational and Sequential Logic
34. EE291: Microprocessor Systems
35. EE2920: Embedded Systems
36. EE310: Electronic Devices and Circuits
37. EE311: Electronic Networks
38. EE371: Control Systems
39. EE3720: Control Systems
40. EE392: Digital Systems Concepts
41. **EE393**: VLSI Design
42. EE3050: Dynamic Systems
43. EE3720: Control Systems
44. EE412: Electronic Systems
45. EE513: Electronic Systems
46. GE110: Introduction to Engineering Concepts

Courses Taught at Kansas State University

Listed by numerical course ID across multiple catalogs. Not listed chronologically. In all courses, I used previously existing catalog statements to design my own course learning outcomes, day-to-day student learning outcomes, weekly schedule, homework exercises, quizzes, exams, final exams, and laboratories. Graduate courses are numbered 800 and above.

1. EECE431: Microcontrollers
2. EECE519: Electric Circuits and Control
3. EECE541: Design of Digital Systems
4. EECE842: Parallel Processing
5. EECE849B: Topics in Computer Engineering: Evolvable Hardware

Courses Taught at Iowa State University

Listed by numerical course ID across multiple catalogs. Not listed chronologically. In all courses, I used previously existing catalog statements to design my own course learning outcomes, day-to-day student learning outcomes, weekly schedule, homework exercises, quizzes, exams, final exams, and laboratories.

1. CPRE210: Introduction to Digital Design
2. CPRE301: Microprocessor-Based Design
3. CPRE310: Theoretical Foundations of Computer Engineering
4. EE333: Electronic Devices and Circuits

Written and Spoken Language Fluency

1. **English**: Native spoken and written fluency, technical fluency in engineering, science, computer science, and education
2. **Spanish**: Intermediate spoken and written fluency (CEFR B2)
3. **Chinese**: Conversational spoken fluency. Written fluency at a secondary school level.