



# Mun Y. Choi, Ph.D

## President, University of Missouri

Mun Y. Choi serves as the 24<sup>th</sup> president of the University of Missouri — a dual role as chancellor of the University of Missouri and president of the University of Missouri System. In this role, he oversees the academic, business and financial aspects of the four universities, as well as a health care system and statewide extension program.



In partnership with the University of Missouri Board of Curators and university leadership, President Choi introduced a new collective vision systemwide shortly after he arrived in Columbia: to advance the opportunities for success and well-being in Missouri, the nation and the world through transformative teaching, research, innovation, engagement and inclusion.



### University of Missouri System President

As President, he helped transform the perception of higher education's value with the university community, alumni, legislators and Missourians.

Across the four universities, several areas marked have historic records and stronger collaboration:

- Highest level of state support in 35 years
- Best ever six-year graduation rates for all students, including Pell, Black/African-American and Hispanic students
- Highest research and development expenditures at \$512 million, using the National Science Foundation's Higher Education Research and Development (NSF HERD) data for fiscal year 2022.
- \$6.5 billion in annual economic impact to the state of Missouri, a 15-to-1 return on taxpayer investments
- Successful launch of the NextGen Precision Health initiative and grand opening of the Roy Blunt NextGen Precision Health building to improve and save the lives of Missourians
- Restored the university's credit rating with both Moody's Investors Service and S&P Global Ratings, which placed the System in the top 10% of public higher education institutions rated by these agencies
- Meaningful extension and engagement activities to better serve Missourians in agriculture support, education, health care and broadband access



### University of Missouri Chancellor

At MU, Choi has led efforts to strategically grow MU's stature as a leading research university. In 2021, he launched MizzouForward, a \$1.5 billion, 10-year investment in

faculty excellence, student success and modern infrastructure. This initiative focuses on investments in three key pillars: NextGen Precision Health; New Frontiers in Science, Engineering and Technologies; and Innovations in Social Science, Humanities and the Arts.

Choi's MU leadership team, working closely with faculty, staff and committed stakeholders have set Mizzou on a record-breaking path with:

- \$400 million in research (NSF HERD) expenditures in fiscal year 2022
- Best ever six-year graduation rates for all students (75%), Hispanic (66%), Black/African-American (65%) and Pell (63%).
- 95% of graduates obtaining successful career outcomes or continuing their education within six months of earning their degree
- #1 US News & World Report Best Value among public national universities in neighboring states and SEC flagships

### **Professional and academic background**

Choi came to Missouri in 2017 after nine years at the University of Connecticut where he served as provost and executive vice president (2012-2017) and earlier as dean of engineering (2008-2012). His 28-year career in higher education also includes serving eight years as a department head of engineering at Drexel University and six years as an assistant and associate professor at the University of Illinois at Chicago.

He earned his bachelor's degree in General Engineering from the University of Illinois-Urbana Champaign and his M.A. and Ph.D. degrees in Mechanical and Aerospace Engineering from Princeton University.

### **Personal history**

His parents brought their family to the United States from South Korea when Choi was nine years old and grew up in Akron, Ohio and Chicago, Illinois. Choi is married to Suzanne Choi and together they have three children.

## **Mun Young Choi**

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Chancellor of the University of Missouri Columbia  
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Columbia, MO 65211  
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### **PERSONAL**

Birthdate: March 19, 1964  
Citizenship: United States  
Marital Status: Married with three children

Immigrated from South Korea with family in 1973  
Top Secret Security Clearance granted in 2018

### **EDUCATION**

*National Research Council Post-Doctoral Fellowship*, NIST, 1993  
*Ph.D.*, Dept. of Mechanical & Aerospace Engineering, Princeton University, 1992  
*M.A.*, Dept. of Mechanical & Aerospace Engineering, Princeton University, 1989  
*B.S.*, Dept of General Engineering, U. of Illinois at Urbana-Champaign, 1987  
*High School*: Stephen Tyng Mather High School, Chicago, IL, 1983  
*Elementary School*: Daniel Boone Elementary School, Chicago, IL, 1979  
*Elementary School*: Lyman Trumbull Elementary School, Chicago, IL (1975-1976)  
*Elementary School*: Leggett Elementary School, Akron, OH (1973-1975)

### **PROFESSIONAL APPOINTMENTS**

1. President of the University of Missouri System, Mar. 2017-present  
Chancellor of the University of Missouri-Columbia, Mar. 2020-present  
The **University of Missouri System** (UM System) is a land-grant institution that provides centralized administration for four universities, a health care system, an extension program, and ten research and technology parks. Nearly 75,000 students are currently enrolled at its four campuses. The UM System was created in 1963 when the [University of Missouri](#) (founded in 1839 in Columbia) and the Missouri School of Mines (now the [Missouri University of Science and Technology](#), founded in 1870 in Rolla), were combined with the formerly private University of Kansas City (now [University of Missouri-Kansas City](#), founded in 1933), and a newly created campus in suburban St. Louis ([University of Missouri-St. Louis](#)) in 1963.
2. Provost & Executive Vice President, University of Connecticut, Dec. 2012-Feb. 2017
3. Interim Provost & Executive Vice President, University of Connecticut, June 2012-Dec. 2012
4. Dean of Engineering, University of Connecticut, 2008-2012
5. Professor of Mechanical Engineering, University of Connecticut, 2008-Present
6. Head of Mechanical Engineering and Mechanics, Drexel University, 2001-2008
7. Associate Dean for Research and Graduate Studies, Drexel University, 2000-2008
8. Associate Professor and Associate Head of Mechanical Engineering, University of Illinois at Chicago, 1998-2000

9. Assistant Professor of Mechanical Engineering, University of Illinois at Chicago, 1994-1998
10. National Research Council Post-Doctoral Fellow, Building and Fire Research Laboratory, Nat'l Inst. of Standards and Technology, Gaithersburg, MD, 1992-1993
11. ASEE Summer Faculty Fellow, NASA-Lewis Research Center, Cleveland, OH, 1994-1996
12. Graduate Research Assistant, Princeton University, Princeton, NJ, 1987-1992
13. Summer Engineering Intern, Schlumberger-Doll Research, Ridgefield, CT. 1986

## **AWARDS AND HONORS**

1. Doctorate of Science, Honoris Causa from Pohang Institute of Science & Technology (POSTECH), February, 2019
2. Asian Pacific American Association Award in Higher Education, 2014
3. Elected Fellow of the American Society of Mechanical Engineers, 2012
4. Champion of Innovation, University of Connecticut, 2012
5. Board Member of Connecticut Innovations (appointed by CT Governor, Dannel P. Malloy), 2011-present
6. Board Member of the CT Clean Energy Finance and Investment Authority (appointed by CT Senate President Pro Tempore, Donald E. Williams), 2011-present
7. Board Member of the CT Clean Energy Fund Board of Directors (appointed by CT House of Representative Speaker, Denise Merrill), 2009-2011
8. Board Member of the CT Science Center, 2014-present
9. Elected Member of the Connecticut Academy of Science and Engineering, 2009
10. UConn NSBE Igniting the Torch Award, 2009
11. Korean-American Scientists and Engineers Assn Engineer of the Year, 2008
12. President of Pi Tau Sigma (PTS is the Int'l Mechanical Engineering Honor Society), 2007-Present
13. NSF Philadelphia Stokes Alliance for Minority Participation Award for Excellence in Education, 2006
14. Drexel University College of Engineering Robert G. Quinn Medal for Leadership, 2006
15. University of Illinois System-Wide University Scholar, 2000-2003 (The University Scholars Program, based on quality of research, teaching and service, is the premier recognition accorded to faculty at the U of Illinois by their colleagues)
16. UIC Award for Excellence in Teaching, 1999 (This peer-awarded honor is bestowed upon educators for their excellence in teaching and concern for learning)
17. Society of Automotive Engineers Ralph R. Teetor Educational Award, 1998 (A national award for engineering educators who've implemented unique teaching methodologies)
18. UIC College of Engineering Inaugural Faculty Research Award, 1998
19. The Harold A. Simon College of Engineering Award for Excellence in Teaching, 1998
20. ASEE/NASA Summer Faculty Fellowship, NASA-LeRC, 1994-1996
21. NRC Post-Doctoral Fellowship, Nat'l. Inst. of Standards and Technology, 1992, 1993
22. NASA Graduate Researcher Fellowship, NASA-LeRC, 1989-1991
23. Princeton University Fellowship, Princeton University, 1987
24. Walter P. Murphy Fellowship, Northwestern University (declined), 1987
25. Larson Award for Excellence in Undergraduate Design, University of Illinois, 1987

26. Lincoln Arc Welding Foundation Merit Prize for Undergraduate Research, 1987

## **PROFESSIONAL ACTIVITIES**

1. Keynote Speaker at UKC 2018, New York, NY, 2018
2. Keynote Speaker at the iFAME Symposium at the Korean Institute of Metals & Machinery, 2015
3. Panelist at the APLU 2013 Meeting on “USAID’s Forward Movement in Higher Education”, 2013
4. Keynote Speaker at the Connecticut Business & Industry Association Board of Director Meeting, 2013
5. Moderator and Panelist at the Metro Hartford Alliance “CT Israel Technology Summit – Emerging Technologies to Meet Tomorrow’s Demands”, 2013
6. Member of the NSF Engineering Education & Centers Committee of Visitors, 2013
7. Program Chair of Pi Tau Sigma Mechanical Engineering Honor Society National Convention
  - Drexel University, 2017
  - University of Southern California, 2016
  - University of Illinois, 2015
  - Texas A&M University, 2014
  - Ohio State University, 2013
  - San Jose State University, 2012
  - University of Illinois at Chicago, 2011
  - Texas Tech University, 2010
  - University of Michigan, 2009
8. Program Chair for UKC 2011, Salt Lake City, UT
9. Organizer for the Global Smart Grid Symposium at the UKC Conference, Seattle, 2010
10. Panelist on the 2009 “Green Technologies in Aviation”, Asian Aerospace Congress, Hong Kong
11. University representative for the American Colleges and University Presidents Climate Change Conference, 2009, Chicago, IL
12. Member of the CT Delegation for the National Governors Association Workshop on Entrepreneurship and Best Practices, 2009, San Francisco, CA
13. Organizer and Panelist for Green Science and Technology Symposium at the UKC Conference, 2009, Raleigh, NC
14. Editorial Board Member, Low Carbon Technologies, Oxford University Journals, 2009-Present
15. Organizing Committee for ASEE Engineering Deans Institute, 2009, Boston, MA
16. Session Chair at ASEE Engineering Deans Institute Conference on “Engineering Education in a Global Economy”, 2009, Boston, MA
17. Session Chair at ASEE Engineering Deans Institute Conference on “Educating Students for both Global and Local Engineering”, 2009, Boston, MA
18. Member of the POSTECH University Advisory Council, 2008-2011
19. Topic Organizer for ASME IMECE2008 session on “Emerging Combustion Technology”, November, 2008, Boston, MA

20. Panel Organizer for ASME IMECE2008 on “Opportunities in Emerging Frontiers of Combustion”, November, 2008, Boston, MA
21. Session Chair for ASME Heat Transfer Conference session on Topical Simulations, Diagnostics, and Experiments in Fire and Combustion Systems, July, 2007, Vancouver, Canada
22. Mechanical Engineering Department Head Executive Committee Member, 2006-Present
23. Session Chair for ASME IMECE2006 session on “Fire and Combustion: Topical Simulations, Diagnostics, and Experiments”, November, 2006, Chicago, IL
24. Session Chair for “Droplet Combustion” during the 4<sup>th</sup> Joint Meeting of the U.S. Sections of the Combustion Institute, March, 2005, Philadelphia, PA
25. Local Organizing Committee for the 4<sup>th</sup> Joint Meeting of the U.S. Sections of the Combustion Institute, March, 2005
26. National Academy of Engineering Workshop Participant for K-16 Educational Reforms, Washington, DC, February, 2005
27. Session Chair for “Bubble Dynamics” at the ICHMT Micro/Nanoscale Energy Transport and Conversion Conference, Seoul, Korea, August, 2004
28. Session Chair for Laminar Flames at the 30<sup>th</sup> Symposium (Int'l) on Combustion, Chicago, IL, July 2004
29. Publication Committee for the 30<sup>th</sup> Symposium (Int'l) on Combustion, 2004
30. Session Chair at NATO ASI Nanostructured, Nanofibrous Materials, Antalya, Turkey. September, 2003
31. Panelist for NASA Combustion Integrated Rack Review, May 2002, October, 2002
32. Chair of the Drexel/MCPHU Merger Sub-Committee on F&A Return, 2002
33. Chair of the Drexel/MCPHU Research Day Organizing Committee, 2001-Present
34. ASEE Engineering Research Council Representative for Drexel University, 2001-Present.
35. Session Chair at the 3<sup>rd</sup> ASPACC (Asian Pacific Conference on Combustion) Meeting in Seoul, Korea, June, 2001
36. Panelist for Norway/US Cooperation Workshop, Washington, DC, October, 2001
37. Member of the Drexel/MCPHU Research Council, 2001-Present
38. Session Chair at Central States Section of the Combustion Institute, Indianapolis, IN, March, 2000
39. Co-Investigator for NASA Shuttle Experiment, 1999-Present
40. Awards Committee of the Graduate College, UIC, 1999-2000
41. Campus Research Board, Alternate Member, UIC, 1999-2000
42. Publication Committee for the 27<sup>th</sup> Symposium (Int'l) on Combustion, 1998
43. Panelist for Graduate School Workshop, SHPE Annual Meeting, Orlando, FL, 1998
44. Principal Investigator for UIC Aerospace Illinois Space Grant Consortium, 1997-2000
45. Session Chair at International Microgravity Combustion Workshop, NASA, 1997
46. Publication Committee for the 26<sup>th</sup> Symposium (Int'l) on Combustion, 1996
47. Panel Member for Soot Extinction Constant Workshop, NIST, 1996
48. Session Chair for the Central/Western/Mexican Sections of the Combustion Institute, San Antonio, TX, April, 1995
49. Faculty Advisor for the KC-135 at Drexel University (Vomit Comet Program), 2000-2008
50. Faculty Advisor for the ME section of SHPE at UIC 1999-2000
51. Faculty Advisor for Pi Tau Sigma Mechanical Engineering Honor Society at UIC, 1999-2000

52. Faculty Advisor for Tau Beta Pi Engineering Honor Society at UIC, 1998-2000
53. Faculty Advisor for Society of Automotive Engineers at UIC, 1996-1998

### **SEMINARS, PRESENTATIONS AND INVITED LECTURES**

1. *Eastern Section Meeting of the Combustion Institute, Clearwater Beach, FL*, "The Burning Behavior of Methanol Droplets in Humid Air", December 1988.
2. *Eastern Section Meeting of the Combustion Institute, Albany, NY*, "The Burning of Methanol Droplets in Microgravity Using Various Inerts", November 1989.
3. *Twenty-Third Symposium (Int'l) on Combustion, Orleans, France*, "Slow-Burning Regime for Hydrocarbon Droplets: n-Heptane/Air Results", July 1990.
4. *Eastern Section Meeting of the Combustion Institute, Orlando, FL*, "Burning Behavior of Hydrocarbon Droplets in Reduced Pressure Environments", December 1990.
5. *AIAA/IKI Microgravity Science Symposium, Moscow, Russia*, "Observations on Droplet Combustion Characteristics: NASA-LeRC/Princeton Results", May 1991.
6. *International Union of Theoretical and Applied Mechanics Symposium on Microgravity Fluid Mechanics, University of Bremen, Bremen, Germany*, "Computational-Experimental Basis For Conducting Alkane Droplet Combustion Experiments on Space-Based Platforms", September 1991.
7. *Boston University, Department of Mechanical Engineering, Boston, MA*, "Recent Observations of Microgravity Droplet Combustion", March 1991.
8. *Washington State University, Department of Mechanical Engineering, Pullman, WA*, "Recent Observations of Microgravity Droplet Combustion", April 1991.
9. *National Institute of Standards and Technology Invited Lecture, Gaithersburg, MD*, "Microgravity Droplet Burning Behavior", November 1991.
10. *AIAA Meeting, Reno, NV*, "Microgravity Combustion of Isolated n-Decane and n-Heptane Droplets", January 1992.
11. *AIAA Meeting, Reno, NV*, "Soot Agglomeration in Isolated, Free Droplet Combustion", January 1993.
12. *Central Section Meeting of the Combustion Institute, New Orleans, LA*, "Simultaneous Optical Measurements of Soot Volume Fraction and Temperature", March 1993.
13. *Eastern Section Meeting of the Combustion Institute, Princeton, NJ*, "Simultaneous Optical Measurements of Soot Volume Fraction and Temperature in Heptane Pool Fires", October 1993.
14. *Central Section Meeting of the Combustion Institute, Madison, WI*, "Comparisons of Soot Volume Fraction Measurements Using gravimetric and Light Extinction Techniques", June 1994.
15. *NIST Annual Fire Conference, Gaithersburg, MD*, "Gravimetric Sampling Calibration of Light Extinction Technique for Premixed and Diffusion Flames", October 1994.
16. *NASA Lewis Research Center, Cleveland, OH*, "Pool Fire Burning", July 1994.
17. *NASA Lewis Research Center, Cleveland, OH*, "Sooting Effects in Droplet Combustion", May 1995.
18. *International Conference of the Society of Fire Protection Engineers, Orlando, FL*, "Use of Gravimetric Sampling for Calibration of Optical Techniques", September 1995.
19. *Twenty-Sixth Symposium (Int'l) on Combustion, Naples, Italy*, "Measurement of Soot Volume Fraction of Single Droplets Using Light Extinction Technique", August 1996
20. *University of Illinois at Urbana-Champaign, Department of Mechanical & Industrial*

- Engineering*, "Sooting and Radiation Effects in Droplet Combustion", February 1997.
21. *NASA Lewis Research Center, Cleveland, OH*, "Sooting and Radiation Effects in Droplet Combustion", May 1997.
  22. *Sandia National Laboratories, Albuquerque, NM*, "Spectral Measurements of Post-Flame Soot", February 1999.
  23. *Seoul National University, Department of Mechanical and Aerospace Engineering, Seoul, S. Korea*, "Microgravity Droplet Combustion", March 1999.
  24. *Korea Advanced Institute of Science and Technology, Taejon, S. Korea*, "Soot Research", March 1999.
  25. *NASA Glenn Research Center, Cleveland, OH*, "Experiments and Model Development of Sooting and Radiation Effects in Droplet Combustion", May 1999.
  26. *NIST Building and Fire Research Laboratory, Gaithersburg, MD*, "Measurement of Soot Optical Properties in the Infra-red Spectrum", July 1999.
  27. *Tohoku University Institute of Fluid Sciences, Sendai Japan*, "Seminar on Microgravity Droplet Combustion", August 1999.
  28. *Department of Chemical Engineering, University of Utah*, "Measurement of Soot Optical Properties in the Infrared", February 2000.
  29. *Department of Mechanical Engineering and Mechanics, Drexel University*, "Sooting Influences in Droplet Combustion", April 2000.
  30. *NASA Glenn Research Center, Cleveland, OH*, "Influence of Pressure and Oxygen Concentration on the Burning of Large Ethanol Droplets", May 2001.
  31. *Pennsylvania State University, State College, Pa*, "Nanotechnology Institute at Drexel University", March 2001.
  32. *Seoul National University, Seoul, S. Korea*, "Microscopic Structure, Dimensions And Fractal Geometry Of Diesel Particulates", June 2001.
  33. *NASA Langley, Hampton, Va*, "Overview of Nanotechnology Research at Drexel University", June 2001.
  34. *24<sup>th</sup> Sectional Meeting of the Italian Combustion Institute, Santa Margherita, Italy*, "New Combustion Models with Practical Fuels", September 2001.
  35. *AIAA International Space Utilization Meeting*, "International Space Utilization: Sooting and Radiation Effects in Microgravity Droplet Combustion", Cape Canaveral, FL, October 2001.
  36. *University of Alabama at Birmingham, Birmingham, AL*, "Overview of Droplet Combustion in Microgravity Conditions", February 2002.
  37. *Polytechnic University of Madrid, Madrid, Spain*, "US STEP Workshop: Drexel University Programs in International Engineering Education", March 2002.
  38. *Penn State –Great Valley Campus, Media, PA*, "Nanotechnology Research Activities at Drexel University", March 2002.
  39. *Pohang Institute of Technology*, "NASA Activities in Combustion", September, 2002.
  40. *Princeton University*, "Optical Properties of Flame-Generated Particulates", April, 2003.
  41. *NASA Glenn Research Center*, "Experiments and Model Development for the Investigation of Sooting and Radiation Effects in Microgravity Droplet Combustion", Cleveland, OH, June 2004.
  42. *New Jersey Institute of Technology*, "Droplet Combustion Experiments for Fire Safety Studies", Newark, NJ, December, 2005
  43. *University of Illinois at Urbana-Champaign*, "Flame Extinguishment Experiments Using



- Droplet Combustion”, Urbana, IL, Feb. 2006.
44. *4<sup>th</sup> Int’l Conference on Cooling and Heating Technologies, Jinhae, S. Korea*, “Fractal, Physical and Optical Property Measurement of Diesel and Biodiesel Soot”, October, 2008.
  45. KOFST Science & Technology Symposium, Seoul, S. Korea, “Combustion Experiments in the Int’l Space Station: Sooting Behavior of Droplets”, July, 2012.

#### ARCHIVAL JOURNALS AND PEER-REVIEWED BOOK CHAPTERS

1. M.Y. Choi, F.L. Dryer and J.B. Haggard, Jr., "Observations on Droplet Combustion Characteristics", Drops and Bubbles (T. Wang, Ed.), American Institute of Physics, N.Y., pp.338-361 (1989).
2. M.Y. Choi, F.L. Dryer and J.B. Haggard, Jr., "Slow-Burning Regime for Hydrocarbon Droplets: n-Heptane/Air Results", *Proceedings of the International Symposium on Combustion* 23:1597-1604 (1990).
3. S.Y. Cho, M.Y. Choi and F.L. Dryer, "Extinction of a Free Methanol Droplet in Microgravity", *Proceedings of the International Symposium on Combustion* 23:1611-1617 (1990).
4. M.Y. Choi, S.Y. Cho, F.L. Dryer and J.B. Haggard, Jr., "Alkane Droplet Combustion Experiments on Space-Based Platforms", *Int'l J. of Microgravity Science and Technology*, 4:134-136 (1991).
5. M.Y. Choi, F.L. Dryer and J.B. Haggard, Jr., "Some Further Observations on Droplet Combustion Characteristics: NASA-LeRC/Princeton Results", *Microgravity Science* (H.C. Gatos, L.L. Regel, Eds.), AIAA, Washington, D.C., pp.294-304 (1991).
6. M.Y. Choi, S.Y. Cho, F.L. Dryer and J.B. Haggard, Jr., "Computational/Experimental Basis For Conducting Alkane Droplet Combustion Experiments on Space-Based Platforms", *Microgravity Fluid Mechanics* (H.J. Rath, Ed.), Springer-Verlag, pp.337-353 (1992).
7. M.Y. Choi, A. Hamins, H. Rushmeier and T. Kashiwagi, "Simultaneous Optical Measurements of Temperature, Soot Volume Fraction and CO<sub>2</sub> Concentrations in a Heptane Pool Fire", *Proceedings of the International Symposium on Combustion* 25:1471-1480 (1994).
8. M.Y. Choi, A. Hamins, G.W. Mulholland and T. Kashiwagi, "Simultaneous Optical Measurements of Soot Volume Fraction and Temperature in a Premixed Flame", *Combustion and Flame*, 99:174-186 (1994).
9. M.Y. Choi, G.W. Mulholland, A. Hamins and T. Kashiwagi, "Comparison of the Optical and Gravimetric Soot Volume Fractions", *Combustion and Flame*, 102:161-169 (1995).
10. R.L. Vander Wal, K.O. Lee and M.Y. Choi, "The Effects of Rapid Heating of Soot Implications for Using Laser Induced Incandescence for Soot Diagnostics", *Combustion and Flame*, 102:200-204 (1995).
11. H. Rushmeier, A. Hamins and M.Y. Choi, "Volume Rendering of Pool Fire Data", *IEEE Computer Graphics and Applications*, 15:62-67 (1995).
12. M.Y. Choi and K.O. Lee, "Investigation of Sooting in Microgravity Droplet Combustion", *Proceedings of the International Symposium on Combustion* 26:1243-1250 (1996).
13. K.O. Lee, K.A. Jensen and M.Y. Choi, "Measurement of Soot Volume Fraction of Single Droplets Using Light Extinction Technique", *Proceedings of the International Symposium on Combustion* 26:2397-2404 (1996).
14. R. L. Vander Wal, Z. Zhou and M.Y. Choi, "Spatially-Resolved Spectral and Temporal

- haracterization and Gravimetric Sampling Calibration of Laser-Induced-Incandescence", *Combustion and Flame*, 105:462-470 (1996).
15. R.L. Vander Wal, K.A. Jensen and M.Y. Choi, "Simultaneous Laser-Induced Emission of Soot and Polycyclic Aromatic Hydrocarbons Within a Gas-Jet Diffusion Flame", *Combustion and Flame*, 109:399-414 (1997).
  16. G.W. Mulholland, and M.Y. Choi, "Measurement of the Mass Specific Extinction Coefficient for Acetylene and Ethene Soot using the Large Agglomerate Optics Facility", *Proceedings of the International Symposium on Combustion*, pp.1515-1522 (1998).
  17. Z.Q. Zhou, T.U. Ahmed and M.Y. Choi, "Measurement of Dimensionless Extinction Constant of Soot Using Gravimetric Sampling Technique", *Experimental Thermal and Fluid Sciences*, 18:27 (1998).
  18. K.O. Lee and M.Y. Choi, "Observations on the Sooting Behavior of Microgravity Flames under Reduced Pressures", *Int'l J. of Microgravity Science and Technology*, X/2, 86-94 (1998).
  19. K.O. Lee, S.L. Manzello and M.Y. Choi, "The Effects of Initial Diameter Variation on the Burning Behavior of Droplets Under Microgravity Conditions", *Combustion Science and Technology*, 132:139-156 (1998).
  20. M.Y. Choi and K.A. Jensen, "Calibration and Correction of Laser Induced Incandescence for Soot Volume Fraction Measurements", *Combustion and Flame*, 112:485-491 (1998).
  21. R.L. Vander Wal and M.Y. Choi, "Pulsed Laser Heating of Soot: Morphological Changes", *Carbon*, 37:231-239 (1999).
  22. J. Zhu, M.Y. Choi, G.W. Mulholland, and L.A. Gritzo, "Accurate Measurement of Soot Extinction in the Near-Infrared Spectrum", *Int'l Journal of Heat and Mass Transfer*, 43:3299-3302 (2000).
  23. J. Zhu, M.Y. Choi, G.W. Mulholland, and L.A. Gritzo, "Soot Scattering Measurements in the Visible and Near-Infrared Spectrum", *Proceedings of the International Symposium on Combustion* 28:439-446 (2001).
  24. S.L. Manzello, M.Y. Choi, A. Kazakov, F.L. Dryer, R. Dobashi, and T. Hirano, "Sooting Behavior of Large Droplets in the JAMIC Facility", *Proceedings of the International Symposium on Combustion* 28:1079-1086 (2001).
  25. S.L. Manzello and M.Y. Choi, "Measurement of Aerosol Properties of Soot Produced in Microgravity Droplet Combustion", *Int'l Journal of Heat and Mass Transfer*, 45:1109-1116 (2001).
  26. M.Y. Choi and F.L. Dryer, "Microgravity Droplet Combustion", chapter in *Microgravity Combustion* (H. Ross, Ed.), Academic Press (2001).
  27. A. Güvenç, A. Campbell, M.Y. Choi, C.M. Megaridis, and K.O. Lee, "Measurement of the Size and Structure of Soot Aggregates from a Laminar Ethene Diffusion Flame using Transmission Electron Microscopy and Image Processing", *Combustion Science and Technology*, 171:71-88, (2001).
  28. J. Zhu, M.Y. Choi, G.W. Mulholland, and L.A. Gritzo, "Accurate Measurement of Soot Optical Properties in the Infrared Spectrum", *Proceedings of the International Symposium on Combustion*, 29:2367-2374 (2002).
  29. K.O. Lee, R. Cole, R. Sekar, and M.Y. Choi, "Microscopic Structure, Dimensions And Fractal Geometry Of Diesel Particulates", *Proceedings of the International Symposium on Combustion*, 29:647-653 (2002).
  30. K.O. Lee, J. Zhu, S. Ciatti, A. Yozgatligil, and M.Y. Choi, "Sizes, Graphitic Structures and

- Fractal Geometry of Light-Duty Diesel Engine Particulates”, SAE Paper 2003-01-3169 (2003).
31. J. Zhu, A. Irrera, M.Y. Choi, G.W. Mulholland, L. Gritzko, and J. Suo-Anttila, “Measurement of Light Extinction Constant for JP-8 Soot in the Visible and Near-Infrared Spectrum”, *International Journal of Heat and Mass Transfer*, 47:3643-3648 (2004).
  32. A. Yozgatligil, S.H. Park, M.Y. Choi, A. Kazakov, A. and F.L. Dryer, “Burning and Sooting Behavior of Ethanol Droplet Combustion under Microgravity Conditions”, *Combustion Science and Technology*, 176:1985-1999 (2004)
  33. B.D. Urban, K. Kroenlein, L. Ernst, A. Kazakov, F.L. Dryer, A. Yozgatligil, M.Y. Choi, S. L. Manzello, K.O. Lee, and R. Dobashi, “Initial Observations of Soot Formation During Ethanol Droplet Combustion at Elevated Pressures”, *Int'l Journal of Microgravity Science and Technology XV/3*: 3-9 (2004).
  34. Manzello, S.L, Yozgatligil, A., Choi, M.Y., “Sootshell Formation in Microgravity Droplet Combustion”, *International Journal of Heat and Mass Transfer, Volume 47*: 5381-5385 (2004)
  35. Zhu, J., Lee, K.O, Yozgatligil, A., Choi, M.Y., “Effects of Engine Operating Conditions on Morphology, Micro Structure and Fractal Geometry of Light-Duty Diesel Engine Particulates”, *Proceedings of the International Symposium on Combustion, XXX*:2781-2789 (2005).
  36. C. Shaddix, A. Palotas, C. Megaridis, M. Choi, N. Yang, “Comparison of Soot Graphitic Order in Laminar Diffusion Flames and a Large-Scale JP-8 Pool Fire”. *International Journal of Heat and Mass Transfer*, 48:3604-3614 (2005)
  37. Yozgatligil, A., Park, S.H., and Choi, M.Y., “Influence of Oxygen Concentration on the Sooting Behavior of Ethanol Droplet Flames in Microgravity Conditions, *Proceedings of the International Symposium on Combustion XXXI*: 2165-2173 (2007).
  38. Park, S.H., Choi, S.C., and Choi, M.Y., “Influence of Initial Droplet Diameter and Inert Substitution on the Sooting Behavior of Ethanol Droplet Flames in Microgravity Conditions, *Combustion Science and Technology* 180:631–651 (2008).
  39. S.L. Manzello, A.Yozgatligil, S.H. Park and M.Y. Choi, “Fuel Dependent Effects on Droplet Burning in Microgravity”, *Energy and Fuels*, 23:3586-3591 (2009).
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56. M.Y. Choi, F.L. Dryer, J.M. Card, F.A. Williams, J.B. Haggard, Jr. and B.A. Borowski, "Microgravity Combustion of Isolated n-Decane and n-Heptane Droplets", AIAA Paper No. 92-0242 (1992).
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70. R.L. Vander Wal, Z. Zhou and M.Y. Choi, "Spatially Resolved Spectral and Temporal Characterization and Gravimetric Sampling Calibration of Laser-Induced-Incandescence", Central States/Western States/Mexican National Sectional Meeting of the Combustion Institute, pp.98-103 (1995).
71. K.O. Lee, K. Jensen and M.Y. Choi, "Measurement of the Soot Volume Fraction of Single Droplets using Light Extinction Technique", Central States/Western States/Mexican National Sectional Meeting of the Combustion Institute, pp.897-902 (1995).
72. K.O. Lee, K. Jensen, M.Y. Choi, "The Effects of Sooting in Droplet Combustion", Third International Microgravity Combustion Workshop, pp. 45-51 (1995).
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75. K.O. Lee and M.Y. Choi, "The Effects of Pressure on Microgravity Droplet Combustion", 7th International Conference on Liquid Atomization and Spray Systems, pp.1090-1097 (1997).

76. M.Y. Choi, "Sooting and Radiation Effects in Droplet Combustion", Fourth International Microgravity Combustion Workshop, pp.461-467 (1997).
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78. K.A. Jensen and M.Y. Choi, "Calibration and Correction of LII for Soot Volume Fraction Measurements", Technical Meeting of the Central States Section of the Combustion Institute, pp.303-308 (1997).
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80. S.L. Manzello, K.O. Lee and M.Y. Choi, "The Influence of Initial Diameter on Sooting and Burning Behavior of Droplets under Microgravity Conditions", Technical Meeting of the Central States Section of the Combustion Institute, Lexington, KY, (1998).
81. S.L. Manzello, M. Hua and M.Y. Choi, "Investigation of Sooting in Microgravity Droplet Combustion: Fuel Dependence Effects", National Meeting of the Combustion Institute, Washington, D.C., (1999).
82. S.L. Manzello, M. Hua, M.Y. Choi and F.L. Dryer, "Experiments and Model Development for Sooting Droplet Combustion in Reduced Gravity", 5th Int'l Workshop on Microgravity Combustion, Cleveland, OH, (1999).
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84. J. Zhu, M.Y. Choi, G.W. Mulholland, and L.A. Gritzo, "Soot Scattering Measurements in the Visible and Near-Infrared Spectrum", Central States Meeting of the Combustion Institute, Indianapolis, IN, (1999).
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88. K.O. Lee, R. Cole, R. Sekar, and M.Y. Choi, "Microstructure of Diesel Soot", 3<sup>rd</sup> ASPACC Meeting, Seoul S. Korea, (2001)
89. M.Y. Choi and F.L. Dryer, "Importance of Microgravity Droplet Combustion in the Validation of Numerical Models of Practical Fuels", 24<sup>th</sup> Meeting of the Italian Section of the Combustion Institute, Santa Margherita, Italy, (2001).
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- Order in Laminar Diffusion Flames and a Large-Scale JP-8 Pool Fire”. Spring Meeting of the Western States Section of the Combustion Institute, University of California, San Diego, (2002)
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  95. A. Yozgatligil, M. Choi, A. Kazakov, and F.L. Dryer, “Measurement of Burning and Sooting Behavior of Ethanol Droplets under Microgravity Conditions”, 3<sup>rd</sup> Joint Meeting of the U.S. Sections of The Combustion Institute. (2003).
  96. J. Zhu, K.-O. Lee, R. Sekar, and M.Y. Choi, “Morphological Study on Diesel Particulates of a Light-Duty CIDI Diesel Engine”, 3<sup>rd</sup> Joint Meeting of the U.S. Sections of The Combustion Institute, (2003).
  97. A. Yozgatligil, M. Choi, A. Kazakov, F.L. Dryer, R. Dobashi, “Experiments and Model Development for the Investigation of Sooting and Radiation Effects in Microgravity Droplet Combustion”, 7<sup>th</sup> Int’l Workshop on Combustion, Cleveland, OH, (2003).
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  99. A. Yozgatligil, S.H. Park, M.Y. Choi, A. Kazakov, F.L. Dryer, “Burning and Sooting Behavior of Ethanol Droplet Combustion under Microgravity Conditions”, Work In Progress Poster Presentation at the 30<sup>th</sup> Symposium (Int’l) on Combustion, Chicago, IL, (2004).
  100. S.H. Park, M. McCafferty, L.A. McGibbon, S.C. Choi, M.Y. Choi, “Measurement of the Dimensionless Extinction Constants for Soot Produced from Practical Fuels”, 4<sup>th</sup> Joint Meeting of the U.S. Sections of the Combustion Institute, Philadelphia, PA, (2005).
  101. A. Yozgatligil, S.H. Park, M.Y. Choi, “The Effect of Inert Substitution on Ethanol Droplet Combustion in Microgravity”, 4<sup>th</sup> Joint Meeting of the U.S. Sections of the Combustion Institute, Philadelphia, PA, (2005).
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  103. M. Mehl, A. Cuoci, T. Faravelli, E. Ranzi, A. Kazakov, F.L. Dryer, A. Yozgatligil, S.H. Park, M.Y. Choi, “Combustion of Ethanol Fuel Droplets in Microgravity Conditions”, Proceedings of 20<sup>th</sup> ILASS – European Meeting, Orleans, France, (2005).
  104. S.C. Choi, S.H. Park, L.A. McGibbon, J. Chung, M.Y. Choi, “Measurements of the Dimensionless Extinction Constant for Diesel and Biodiesel Soot”, Proceedings of the 4<sup>th</sup> International Conference on Sustainable Energy Technologies, Jinan, China, (2005).
  105. S.H. Park, S.C. Choi, M.Y. Choi, A. Yozgatligil, Y.K. Oh, “Measurement of Sooting of Ethanol Droplets on High Pressures”, ICLASS Conference, Kyoto, Japan, (2006).
  106. S.C. Choi, S.H. Park, D. Lang, C.S. Lee, M.Y. Choi, “Measurement of Dimensionless Extinction Constant for Biodiesel and Diesel Soot”, 18<sup>th</sup> Int’l Symposium on Transport Phenomena, Daejeon, S. Korea, (2007).
  107. A. Yozgatligil, S.H. Park, M.Y. Choi, “Thin Filament Pyrometry Temperature Measurements in Microgravity Droplet Combustion”, ASME IMECE Paper 43390, Seattle, WA, (2007).

108. H. Burnside, J. Ferroni, D. Bonnell, Y. Gogotsi, M.Y. Choi, A.T. Johnson, J. Spanier, "Research Experiences for Teachers in Nanotechnology", ACS Annual Meeting, Philadelphia, PA, (2008).
109. S.C. Choi, S.H. Park, M.Y. Choi, "Fractal, Physical and Optical Property Measurement of Diesel and Biodiesel Soot", 4<sup>th</sup> Int'l Conference on Cooling and Heating Technologies, Jinhae, Korea (2008).
110. S.H. Park, M.Y. Choi, "Nanostructure of Soot Particles produced in Microgravity Ethanol Droplet Flames", 2009 IAC Microgravity Science Symposium, Daejeon, South Korea, (2009).
111. H.K. Suh, M. Y. Choi and P.V. Ferkul, "New Observations of Sooting Behavior of Isolated Droplets of n-Heptane in Microgravity Conditions", 2011 7<sup>th</sup> US National Combustion Meeting, Atlanta, GA (2011).

#### **Ph.D. Students (Served as Chair)**

1. Kyeong-Ook Lee: MSME '93 UIC, MSME '88 InHa Korea, BSME '86 InHa Korea  
 Ph.D. Thesis Topic: "The Effects of Sooting in Droplet Combustion Under Microgravity and Normal-Gravity Conditions"  
 Graduation Date: 5/97  
 Current Position: Former Member of the Research Staff, Argonne National Laboratory
2. Kirk A. Jensen: BSME '94 University of Delaware.  
 Ph.D. Thesis Topic: "Optical Diagnostic Development for use in Droplet Combustion".  
 Graduation Date: 5/00  
 Current Position: Software Engineer at Textron Systems
3. Samuel L. Manzello: BSME '96 UIC  
 Ph.D. Thesis Topic: "Modeling of Sooting and Radiation Effects in Microgravity Droplet Combustion"  
 Graduation Date: 12/00  
 Position: Member of the Research Staff, Building and Fire Research, NIST
4. Jinyu Zhu: BSME '97 Tsinghua University (China)  
 Ph.D. Thesis Topic: "Soot Optical Property Measurements in the Near Infra-Red Spectrum"  
 Graduation Date: 5/02  
 Position: Technical Staff at General Motors - China
5. Song Liu Gary Ruff (Co-Adv) BSME '96 Xian Jiaotong University (China)  
 Ph.D. Thesis Topic: "Experimental Study of Cluster Droplet Evaporation"  
 Graduation Date: 5/04



- Position: Data Scientist at Opus Group
6. Ahmet Yozgatligil  
Ph.D. Thesis Topic: BSME '98 METU, MSME '00 METU (Turkey)  
"Sooting and Burning of Large Ethanol Droplets under Microgravity Conditions"  
Graduation Date: 12/04  
Position: Associate Professor, Dept. of Mechanical Engineering, Middle East Technical University - Turkey
  7. Irina Ciobanescu  
Gary Ruff (Co-Adv)  
Ph.D. Thesis Topic: BSME '98 University of Bucharest  
"Numerical Modeling of Cluster Droplet Evaporation and Combustion"  
Graduation Date: 6/06  
Position: Assistant Professor at Drexel University
  8. Issac (S.H.) Park  
Ph.D. Thesis Topic: BSME '01; MSME '03 Chosun University (Korea)  
"Nanostructure of Soot Produced in Microgravity Ethanol Flames"  
Graduation Date: 6/07  
Position: Assistant Professor, Chosun University
  9. Mike (S.C.) Choi  
Ph.D. Thesis Topic: BSME '01; MSME '03 Kyungsang National University (Korea)  
"Optical Properties of Diesel and Biodiesel Soot"  
Graduation Date: 6/09  
Position: Principal Researcher at Korea Institute of Industrial Technology

### **M.S. Students (Served as Chair)**

1. Jonathan B Kettelkamp: BSME '90 Purdue  
M.S. Thesis Topic: "The Measured Effect of Combustion on Scavenging Flow"  
Graduation Date: 5/96
2. Gianluca Pulieri: BSME '97 Politenico di Torino  
M.S. Thesis Topic: "Residual Measurement Through X-Ray Diffraction"  
Graduation Date: 12/98
3. Claudio Anzola: BSME '98 Politecnico di Torino  
M.S. Thesis Topic: "Analysis of the Faraday Shield Structure Feasibility"  
Graduation Date: 12/99
4. Ming Hua  
M.S. Project: BSME '97 TsingHua University  
"Influence of Ferrocene on Sooting Characteristics "  
Graduation Date: 5/01
5. Zhi-Qiang Zhou: BSME '82 Northwestern Polytechnical University  
M.S. Project: "Accurate Determination of Optical Properties of Soot Particles".

- Graduation Date: 8/01
6. Andrea Irrera: BSME '00 Politecnico Milano  
M.S. Thesis Topic: "Measurement of Optical Properties of JP-8 using TCRN"  
Graduation Date: 6/02
  7. Matt McCafferty: BSME '03 Drexel University  
M.S. Thesis Topic: "Measurement of Optical Properties of Diesel Soot"  
Graduation Date: 6/05
  8. Laton McGibbon: BS Mathematics '04 Hampton University  
M.S. Thesis Topic: "Optical Property Measurements of Bio-Diesel Soot"  
Graduation Date: 6/06

## FUNDED PROJECTS

Date	Role	Agency	Title of Project	Amount Funded	Funding Period
9/93	PI	NASA	Sooting Effects in Reduced Gravity Droplet Combustion	\$312,000	1994-1999
6/94	PI	NIST	Accurate Determination of Optical Properties of Soot and Smoke	\$46,913	1994-1996
12/94	Co-PI	NASA	Morphological Changes of Soot Generated Under Electric and Magnetic Fields	\$6,000	1995-1997
1/96	PI	UIC OVCR	Superboosting for Automobiles	\$9,000	1996-1998
3/96	PI	NASA LeRC and HQ	Advanced Diagnostics for Microgravity Droplet Combustion: Laser-Induced Incandescence and Wavelength Modulation Spectroscopy	\$132,000	1996-1999
3/96	PI	UIC CRB	Novel Techniques for Soot Concentration Measurements Using Infrared Detection	\$10,000	1996-1997
2/97	PI	NASA	Modeling of Sooting and Radiation Effects in Droplet Combustion	\$66,000	1997-2000
9/97	PI	IDCCA	Modification of Vehicle for E85 Operation	\$10,000	1997-1998
12/97	PI	NASA	Flight Experiments for Sooting Droplet Combustion	\$670,000	1999-2003
3/98	PI	UIC CRB	Spectral Measurement of Soot Optical Properties of Large Carbonaceous Agglomerates	\$15,000	1999-2001
2/99	PI	John Nuveen Foundation	International Exchange Programs with Ajou University	\$2,000	1999-2000
2/99	PI	Sandia	Soot Agglomerate Property Measurements in Pool Fires	\$54,000	1999-2002
3/00	PI	S.C. Johnson	Characterization of Candle Particulates	\$24,000	2000-2001
6/00	PI	MUCIA	International Exchange Program Fund	\$2,000	2000-2001
9/00	PI	University of Illinois	University Scholar Discretionary Research Fund	\$30,000	2000-2003

10/00	PI	NASA	Large Droplet Experiments at the JAMIC Dropshaft Facilities	\$30,000	2000-2002
9/01	Co-PI	NSF, Ben Franklin Tech Partner	UV and Near-Field Raman Microscopy	\$400,000	2001-2004
1/02	Co-PI	NSF	IGERT: Nanoscale Engineering and Science	\$3,300,506	2002-2007
5/02	PI	GEM Foundation	Graduate Fellowship for Minority Students	Ongoing	2002-Pres
5/02	PI	NSF	Research Experiences for Teachers in Emerging Technologies	\$450,000	2003-2006
5/02	PI	PIDC	Cyber Forensics Research and Curriculum Development	\$300,000	2002-2005
5/02	PI	DoE	Diesel Particulate Characterization	\$25,000	2002-2003
11/02	PI	Dept. of Education	Graduate Assistantship in Areas of National Need	\$578,000	2003-2006
12/02	Co-PI	NASA	Droplet Cluster Combustion	\$121,666	2001-2004
1/03	PI	NASA	ISS Flight Experiments on Sooting and Radiation Effects of Droplet Combustion	\$850,000	2003-2007
4/03	Co-PI	AFOSR	Enhancement of combustion and flame stabilization using transient non-equilibrium plasma	\$140,000	2004-2007
10/03	Co-PI	NSF	Research Experiences for Teachers in Nanotechnology	\$450,000	2004-2007
11/03	PI	State of PA	Math and Science Partnerships for Science Education	\$298,000	2004-2007
5/04	PI	NSF	REU for RET	\$21,250	2004-2005
2/05	PI	DoD	Information Assurance Scholarship Program	\$209,000	2005-2007

6/05	Co-PI	NSF	GK-12: Engineering as a Contextual Vehicle for Science and Mathematics Education	\$1,848,000	2006-2009
11/05	PI	Dept. of Education	Drexel University GAANN Fellowships in Biomedical Applications in Engineering	\$380,000	2006-2009
11/05	Co-PI	Dept. of Education	Drexel University GAANN Fellowships in Developing Renaissance Engineers	\$500,000	2006-2009
11/05	Co-PI	Dept. of Education	Drexel University GAANN Fellowships in Advanced Materials Science	\$630,000	2006-2009
10/05	PI	NASA	FLEX Experiments for Fire Suppression: The Influence of Sooting Droplet Combustion	\$260,000	2006-2009
10/05	PI	NSF	Research Experiences for Teachers in Emerging Technologies	\$500,000	2006-2009
3/06	PI	Dept of Defense	IASP Capacity Building of Anechoic Chamber	\$213,000	2006-2007
4/06	PI	State of PA	Weatherization Project for West Philadelphia	\$100,000	2006-2007
9/06	Co-PI	NSF	IGERT Program for Nanoscale Engineering and Science	\$3,199,000	2007-2012
10/06	Co-PI	NSF	Research Experiences for Teachers in Nanotechnology	\$500,000	2007-2010
2/07	PI	NSA	IASP Capacity Building of Advanced Diagnostics	\$150,000	2007-2008
12/07	Co-PI	NSF	Microfluidics Laboratory (MFL) Modules and Kits for Undergraduate Education	\$150,000	2008-2010
12/07	PI	NASA	FLEX II (Fundamental Droplet Combustion)	\$665,000	2008-2016
3/09	PI	Dept. of Education	GAANN Program in Sustainable Engineering	\$522,624	2008-2012
6/09	PI	King Abdul-Aziz University	Establishing Energy and Nanotechnology Undergraduate Tracks in Faculty of Engineering	\$107,069	2009-2010

6/09	Co-PI	Akhbar El-Yom Academy	Developing Nanotechnology Undergraduate Program	\$195,000	2009-2014
6/09	Co-PI	NSF	New, GK-12: Ingenuity Incubators Prepare Technical High School Students for College Engineering	\$2,965,000	2010-2015
6/09	Co-PI	NSF	S-STEM First in Family Scholarship Program	\$600,000	2010-2015
4/10	PI	Dept. of Education	FIPSE/Atlantis Program on Engineers as Global Leaders for Energy Sustainability	\$210,000	2010-2014
11/11	PI	NSF	Louis Stokes Alliance for Minority Participation	\$325,000	2011-2016
1/12	PI	Dept. of Education	GAANN Program in Sustainable Energy	\$400,000	2012-2015
6/12	PI	NSF	Bridge to the Doctorate	\$995,489	2013-2015
6/14	PI	NSF	Bridge to the Doctorate	\$986,990	2014-2016
6/16	PI	NSF	Louis A Stokes Alliances for Minority Participation	\$3,500,000	2016-2021
3/17	PI	NSF	Bridge to the Doctorate	\$999,000	2017-2019