Item 1. Research Report

- Focus on Faculty
- Research Metrics
- Significant Awards

Focus on Faculty

College by College - Notable Faculty Achievements - Dollars alone do not give a complete indication of institutional research and scholarly productivity. National awards and quality publications also contribute to faculty and institutional reputation. Each college was requested to send a brief write-up of three top faculty with high research and scholarly productivity. This section includes the write-ups received.

College of Agriculture, Forestry, and Life Sciences

Dr. Ksenija Gasic
Associate Professor; Department of Plant & Environmental Sciences

Dr. Gasic's research area is peach breeding and genetics. Her research is focused on development of high quality, disease resistant peach varieties adapted to environmental conditions of the Southeastern US. She is developing early to late-ripening, fresh market types of peaches and nectarines that meet the demands of consumers and provide the highest return on investment for growers. The emphasis is on combining high quality and consistent productivity with improved resistance to peach diseases such as bacterial spot and brown rot. She is also working to incorporate health benefits in new peach varieties. Dr. Gasic's research involves characterization and utilization of the peach genetic diversity and development and utilization of genomic technology and computational approaches to improve breeding efficiency. Her program has been actively involved in development and application of modern technological tools in breeding programs (www.rosbreed.org, www.rosaceae.org), germplasm preservation and utilization, and education of future generations of plant breeders. Highlights over the past two years include:

- Seven funded research projects for a total of approximately $2.7M in extramural funding.
- She has published 10 peer reviewed articles, 6 peer reviewed proceedings, 2 technical reports and edited 2 book chapters.
- Her peach breeding and research program has gained national and international recognition via invited talks (9) and presentations (22) at national and international meetings.
- She has graduated 2 PhD students and currently mentors 4 master students and one post-doctoral scientist.
- Dr. Gasic is a Vice-Chair of RosEXEC (the U.S. Rosaceae Genomics, Genetics, and Breeding Executive Committee), Chair of the Prunus CGC (Crop Germplasm Committee), secretary of the PBCC (Plant Breeding Coordinating Committee), and national and international Prunus U.S. representative.
- Dr. Gasic is an elected member of the Scientific Committee for the Symposium on Evaluation of Cultivars, Rootstocks and Management Systems for Sustainable Production of Deciduous Fruit Crops, at the 30th International Horticultural Congress (IHC-2018), which will be held in Istanbul, Turkey (August 12-16, 2018)
- Dr. Gasic initiated a student internship opportunity with the University of Milan, Italy and hosted 4 graduate students and one visiting scientist in her research program.

Dr. David S. Jachowski
Assistant Professor; Department of Forestry and Environmental Conservation

Dr. Jachowski's research focuses on the ecology and restoration of wildlife. To accomplish this, he builds diverse, interdisciplinary research collaborations that address applied management questions at the scale of the individual animal, population, and broader ecological community. Highlights from his first 2 years at Clemson (fall 2014 to fall 2016) include:

- Publication of 2 books, 4 book chapters, and 14 articles in peer reviewed scientific journals
- Acquired 8 research grants from different state, federal and non-governmental funding agencies totaling >$500,000 and involving collaborations with >50 partners nationally and internationally
- Awarded a 6-year research grant from the South African government to continue collaborative research with partners at the University of KwaZulu-Natal (where Dr. Jachowski is an Honorary Research Fellow)
- Created and currently directs the Clemson Prairie Ecology Lab located in Roundup, Montana (on the property of Clemson alumni Goz and Pat Segars) which serves as a center for graduate research and interdisciplinary Montana Summer Program for Clemson undergraduate students

Dr. Xiuping Jiang
Professor; Department of Food, Nutrition & Packaging Sciences

Dr. Jiang's research interests focus on understanding how foodborne pathogens persist in the pre-harvest environment, and in developing strategies to detect and control these pathogens. Several research projects are ongoing in her laboratory. Through the USDA NoroCore project, our research has detected Human Norovirus in food service environment using molecular biological technology, and developed standard methods for virus recovery and disinfection on soft surfaces. Our lab has been supported with several projects from The Center for Produce Safety at UC Davis since 2008, and the most recent project is to investigate the thermal resistance of *Salmonella* in biological soil amendments (BSA) used for fresh produce production, and the process validation in commercial plants of BSA. By teaming up with the rendering industry, we have developed bacteriophage-based biological approaches to eradicate *Salmonella* biofilms in rendering environment. Finally, we are working on identifying sources and control of *Clostridium difficile,* the #1 nosocomial pathogen causing antibiotic-associated diarrhea and pseudomembranous colitis, in farm environment. Highlights from the past two years include:

- Research in her laboratory contributes to developing tools for detecting and controlling the human norovirus, the leading cause of foodborne illness, in the food service industry.
- Investigating resistance of *Salmonella* to thermal treatment during the production of biological soil amendments (compost) used in fresh produce production. These techniques will lead to process validation of composted materials in facilities commercially producing these soil amendments. The Food Safety Modernization Act - Produce Rule has identified biological soil amendments as a major source introducing pathogens into produce production systems.
- Applying bacteriophages to control *Salmonella* in animal rendering facilities to ensure the microbiological safety of rendered products used in animal feed production. This novel technology can be used to combat *Salmonella* contamination in feed production.
- Identifying the sources of, and control methods for, *Clostridium difficile* in the farm environment. This pathogen is the leading cause of antibiotic-associated diarrhea and pseudomembranous colitis in farm animals.

College of Behavioral, Social, and Health Sciences

Dr. Joe Mazer
Associate Professor; Department of Communication

Dr. Joseph P. Mazer is an Associate Professor and Associate Chair of the Department of Communication at Clemson University. He is also Director of Clemson's Social Media Listening Center, an interdisciplinary research lab and teaching facility that provides a platform to listen, measure, and engage in more than 650 million sources of social media conversations. His research program examines issues related to communication and learning, new communication technologies/social media, and social media analytics. Dr. Mazer's research has encompassed a range of topics including communication and emotion in teaching and learning, student and parental academic support processes, communication trait predictors of social media usage, and social media use in crisis communication scenarios (e.g., during active shooter incidents at the K-12 level). His research has been recognized through top paper and panel awards from the National Communication Association and Central States Communication Association, the Lightsey Fellowship and Dean's Award for Excellence in Research at Clemson University, and funded by the National Science Foundation.

- Dr. Mazer is listed among the top 1% of prolific scholars in the discipline of Communication spanning 2007-2011, according to a study published in the October 2012 issue of *Communication Education*, a flagship journal of the National Communication Association. Dr. Mazer is projected among the top 1% of prolific scholars spanning 2012-2016.
- With colleagues from Clemson's School of Computing and Department of Psychology, Dr. Mazer is Co-PI on a grant from the National Science Foundation to develop an app to measure visual cyberbullying through social media.
- Over the past two years, Dr. Mazer's research has been featured in over 50 media interviews, including placement in *Chronicle of Higher Education*, *USA Today,* and other print, radio, and television outlets.
- Dr. Mazer is Consulting Editor for *Communication Education*, a flagship journal of the National Communication Association, and serves on the editorial boards of 10 journals in the Communication discipline.
- Dr. Mazer was selected as a candidate for President of the Central States Communication Association, one of four major regional Communication associations in the United States. This position is viewed as a pathway to the presidency of the National Communication Association, the discipline's largest and oldest professional organization with thousands of members from every state and around the world.
- Dr. Mazer recently completed a two-year term as Faculty in Residence in Clemson University's Shoebox Residential Community for first year students.
- In April 2016, Dr. Mazer received the Outstanding Young Graduate Alumnus Award from the faculty of the School of Communication at Illinois State University.

Dr. Robert R. Sinclair
Professor; Department of Psychology

Dr. Sinclair has been a Department of Psychology faculty member since 2008 where he also currently serves as the department's coordinator for its MS and PhD programs. Bob obtained his PhD in Industrial-Organizational Psychology from Wayne State University in 1995; prior to joining Clemson, he held faculty positions at Portland State University and the University of Tulsa. Bob's area of expertise is occupational health psychology which involves using theories, methods, and techniques from applied psychology and other behavioral science disciplines to understand and improve employee safety, health, and well-being. His current research program focuses on economic stress, occupational health issues in health care, and creating an organizational climate that encourages employee safety and health. Bob currently teaches graduate courses in Organizational and Occupational Health Psychology and undergraduate courses in Psychological Testing. Some of Bob's career highlights include:

- He has edited/co-edited four books including *Contemporary Occupational Health Psychology*, Volumes 2 and 3 (Chichester/Wiley-Blackwell), *Building Psychological Resilience in Military Personnel: Theory and Practice* (American Psychological Association), and *Research Methods in Occupational Health Psychology: Measurement, Design, and Data Analysis* (Routledge).
- He is the Founding Editor-in-Chief of *Occupational Health Science*, a newly created journal focusing on occupational health issues. He also is an Associate Editor of the *Journal of Business and Psychology* and has served as a board member on several other journals.
- His is a Founding Member and Past-President of the Society for Occupational Health Psychology and a Fellow of the Society for Industrial-Organizational Psychology and the American Psychological Association.
- He has published over 60 referred articles and book chapters and made over 150 presentations at conferences as well as numerous other presentations to scientific and community groups on topics related to his research and the general field of occupational health psychology.
- Bob has worked as a principal investigator or team member on grants/contracts totaling over $1,000,000 in external funding over his career. His current funded work is in collaboration with the Liberty Mutual Research Institute for Safety and investigates how organizational climate influences workplace safety in long-haul truck drivers.

Dr. Brandon Turner
Associate Professor; Political Science

Dr. Turner's research focuses on the history of political thought and, in particular, early modern political thought and early theories of commercial society. I'm currently working on manuscripts on the social and political thought of Bernard Mandeville and the role of conflict and violence in liberal political thought.

- recently published articles in *Polity* (2016) and *Political Theory* (2016), the flagship journal of the discipline of political theory

- 2013 winner of the *Review of Politics* Award, given to best paper in normative theory at the Midwestern Political Science Association
- served as faculty in The Fund for American Studies summer program in Hong Kong (Asia Institute in Political Economy)

College of Business

Dr. Lucy Chernykh
Wells Fargo Professor of Banking; Associate Professor of Finance

Lucy's research focus and expertise is in commercial banking, international finance, and emerging markets. Achievements from the past two years include:

- Publications and papers under advanced review process:
  - Two publications in the leading banking journals:
    - Chernykh, Lucy. (2014). "Dwarf Banks." Journal of Banking and Finance.
    - Chernykh, Lucy and Rebel A. Cole (2015). "How Should We Measure Bank Capital Adequacy for Triggering Prompt Corrective Action? A (Simple) Proposal," Journal of Financial Stability.
  - Two manuscripts with revisions requested by top finance journals:
    - "Offshore Schemes and Tax Evasion: The Role of Banks," with Sergey Mityakov (2nd round review at the Journal of Financial Economics)
    - "Bank Bailouts with On-site Monitors: Evidence from a Regulatory Experiment" (R&R at the Review of Finance)
  - Several other new working papers on transparency, offshoring and regulatory reforms in emerging market banking
- Research results relevant to the public policy decisions:
  - The results of the study "How Should We Measure Bank Capital Adequacy for Triggering Prompt Corrective Action? A (Simple) Proposal"
    - Presented at FRB-Chicago Bank Supervision division
    - Featured in regulatory papers on PCA reform
    - Has recently received considerable attention from the public policy-makers in Washington. The proposed rewrite of Dodd Frank advocates the pilot use of our NPACR (NACR) bank capital adequacy measure as the new trigger ratio. Here is a link: http://financialservices.house.gov/choice/ (p. 21).
- Academic presentations:
  - 8 invited research seminars, including five at foreign universities
  - 10 peer-reviewed presentations at national and international academic conferences
- Professional services to academic research community:
  - High-visibility Track Chair positions (responsible for screening up to 100 research papers in International Finance and Financial institutions areas) for the:
    - Southern Finance Association annual meetings, 2016
    - Eastern Finance Association annual meetings, 2015
  - Elected Board of Directors for the Eastern Finance Association (2014-2016)

Dr. Lura E. Forcum
Assistant Professor of Marketing

Lura's research work examines why people sometimes treat objects like people and people like objects. One reason is because people are at times motivated to attribute minds to objects (such as computers or cars) and also to deny minds to other people (such as outgroup members). While

psychologists have focused on increasing mind attribution to other people as a means of combating social ills such as prejudice and discrimination, this is only one half of the picture. To fully understand mind attribution, we also need to examine what happens when minds are attributed to entities such as objects and brands that do not actually possess them. Lura's research explores how attributing minds to brands and products can cause people to show greater care and concern for them, but it also shows that attributing minds to entities that do not possess them is cognitively costly. Recent achievements include:

- Best proposal award winner, Mary Kay / Academy of Marketing Science Doctoral Dissertation Competition (2015)
- Best proposal award winner, Society for Marketing Advances Doctoral Dissertation Proposal Competition (2014)
- Honorable mention, Marketing Science Institute Clayton Dissertation Proposal Competition (2014)
- Publications:
  - ❖ Ashok Lalwani and Lura Forcum (2016), "Does a Dollar Get You a Dollar's Worth of Merchandise? The Impact of Power Distance Belief on Price-Quality Judgments." Journal of Consumer Research, 43(2), 317-33.
  - ❖ Lura Forcum (2015), Why Good Consumers Love Bad Brands: Assertive Language Makes Consumers Care for Brands, Doctoral Dissertation. Indiana University.
  - ❖ Shanker Krishnan and Lura Forcum (2014), "Consumer Memory Dynamics: Effects of Branding and Advertising on Formation, Stability, and Use of Consumer Memory," Ch. 19 in Handbook of Applied Memory Research, Tim Perfect and Steve Lindsay (ed.). Thousand Oaks, CA: SAGE Publications.

Dr. Nancy Harp
Assistant Professor; School of Accountancy

Nancy's research focuses on a variety of auditing and audit-related issues. More specifically, her research currently investigates implications of SOX reforms, internal control quality/reporting, audit quality issues, and work-life balance/gender issues in an audit setting. Research achievements include:

- Publication of six papers in premier accounting journals, including Auditing: A Journal of Practice & Theory, Accounting Horizons, Journal of Management Accounting Research, Journal of Information Systems, Issues in Accounting Education, and The Financial Review
- 2016 Best Instructional Case Award, from Accounting Information Systems Educators Conference
- 2015 KPMG Best Paper Award, from American Accounting Association Gender Issues & Work-Life Balance Section
- 2014 KPMG Best Paper Award, from American Accounting Association Gender Issues & Work-Life Balance Section

College of Education

Dr. Celeste (C.C.) Bates

Associate Professor of Literacy Education and Director, Clemson University Reading Recovery and Early Literacy Training Center for South Carolina; Department of Education and Human Development

Dr. Bates joined the Clemson faculty in 2009 and teaches post-graduate level courses for Reading Recovery Teacher Leaders who upon completion of their coursework serve as adjuncts for Clemson teaching courses for Reading Recovery Teachers statewide. Bates' research agenda focuses on the use of digital tools to enhance and deliver professional development for reading interventionists and K-2 classroom teachers, which stems from her ongoing inquiry into the teaching of children who are having difficulty learning to read and write. Accomplishments in the last two years include:

- $2,900,000 in state and federal funding. Not included in this figure is a five-year $2,100,000 Investing in Innovation (i3) Grant, which ended in 2015.
- 9 peer-reviewed articles (published or in press) in top-tier journals and 2 book chapters.
- Developed a Virtual Professional Learning Library (VPLL) for K-2 Classroom Teachers as part of an interdisciplinary partnership with Dr. David White, Chief Scientist and Technology Officer, Clemson Center for Geospatial Technologies. In the last two years the VPLL has had 408,915 page views, 65,148 users, and has been accessed in 172 countries.
- 135,000 downloads of the Record of Reading. The Record of Reading, an iOS app for oral reading assessment, was the result of an interdisciplinary partnership with Computer Science Ph.D. student Sam Bryfczynski.
- 2015 InnoVision in Education Award for the Record of Reading App. The InnoVision Awards Program, founded by Deloitte in 1999, is South Carolina's premier organization dedicated to the advancement of technology in the state through communication, education, and recognition of the spirit of innovation and technological progress. The Award is sponsored by McNair Attorneys.
- 2016 Eugene T. Moore School of Education Excellence in Innovation Award.

Dr. Antonis Katsiyannis

Alumni Distinguished Professor of Special Education; Education and Human Development

Dr. Katsiyannis has published extensively in the areas of legal and policy issues associated with special education, delinquency, and issues involving students with emotional or behavioral disorders in professional journals, such as *Behavioral Disorders, Exceptional Children*, *Remedial and Special Education*, *Journal of Emotional and Behavioral Disorders, the Journal of Special Education, and Fordham Urban Law Review*. Highlights include:

- Published (or in press) 25 articles since 2015; over 175 articles total (H-index 35)
- Serving as the **President of the Council for Exceptional Children**

- Served as the co editor of the **Journal of Disability Policy Studies**; currently associate Editor, **Remedial and Special Education**
- Ryan, J., Hodge, J., & Katsiyannis, A. (2014-2018). **Exemplary Personnel for Education,**
- **Research, and Teaching in Special Education (ExPERTiSE).** *Leadership Preparation*
- *Project Clemson University.* Sponsored by the U.S. Department of Education. $1,097,670. *Role-c*o investigator.
- Member, **Focus Group on Youth with Disabilities and Corrections** (April 25, 2016), Office of Special Education Programs

Dr. Rob Knoeppel

Professor and Chair; Department of Educational and Organizational Development

Dr. Knoeppel's research interests include the intersection of school finance and education accountability policy. His work has been regularly published in the *Journal of Education Finance* and *Educational Considerations,* the two top-tiered journals in the field of education finance.

- In 2015-2016 Dr. Knoeppel published four articles in refereed journals; two of these articles included a former doctoral student as author or co-author.
- In 2015-2016 Dr. Knoeppel presented 6 papers at national conferences, including two presentations at AERA.
- In 2015-2016 for the third consecutive year Dr. Knoeppel won the manuscript of the year award at NEFC.
- Dr. Knoeppel is PI on a funded research grant, sponsored by the Greenville Health System.
- Dr. Knoeppel serves on the Editorial Board for the *Journal of Educational Finance* and *Educational Considerations.*
- In 2015-2016 Dr. Knoeppel was elected to the Board of Trustees for the National Education Finance Academy.

College of Engineering, Computing, and Applied Sciences

Dr. Georges Fadel
Exxon Mobil Employees Chair and Professor; Department of Mechanical Engineering

Prof. Georges Fadel joined the Clemson University faculty in 1992 following a stay on the faculty at Georgia Tech where he had received his PhD in 1988. His area of expertise involves engineering design and the methodologies surrounding innovative design with optimization. This involves using mathematical tools to help engineers understand the impact of the design process in manufacturing. Dr. Fadel has been central in developing novel approaches in additive manufacturing, the general field that includes 3D printing. Fadel has served as a Visiting Professor at eight European universities. Dr. Fadel may be Clemson's greatest collaborator putting together numerous successful teams, including multidisciplinary activities with NASA and the US Army. He has been the PI or co-PI for over $11M in research funding at Clemson. For more than a decade, he has led and coordinated Clemson's activity in the Army Automotive Research Center, which has enabled over $3M in grants to faculty in several departments at Clemson. Fadel has written chapters in 8 books, published nearly 100 journal articles and 200 reviewed conference papers and hold 3 patents. In 2016, he received the prestigious international ASME Design Automation Award recognizing his sustained meritorious research contributions in design.

- Received the annual 2016 ASME Design Automation Award from the American Society of Mechanical Engineers.
- Published 13 refereed journal papers, 1 book chapter, and 1 patent application
- Advisor for 5 PhD and 2 MS students and graduated 3 PhD and 4 MS students
- Co-organizes the Endowed and Named Professors group allowing Clemson's best faculty a regular way to constructively interact between themselves and administration

Dr. O. Thompson Mefford
Associate Professor; Materials Science and Engineering

Research focuses on developing stable, biocompatible polymer-nanoparticle complexes and composites for biomedical applications. These applications include: developing materials for hyperthermia and MRI, investigating the thermal properties of macromolecule-nanoparticle complexes, and crosslinking networks of magnetic nanoparticles. The development of such complexes and composites will demonstrate the stability and interactivity of nanoparticles and improve upon them to give a better functionality for a given application.

- Prof Mefford published 7 referred journal articles in the first 6 months of 2016.
- He and his students made 11 presentations at National/International scientific meetings in 2015 including 3 invited presentations.
- The articles authored by Prof. Mefford have been cited more than 500 times in the scientific literature.
- h-index is 14.

- Recipient of the 2015 CES Young Alumni Award
- Recently awarded the College of Engineering and Science's 2016 Murray Stokely Award for Excellence in Engineering Education
- Currently serves as the Faculty Representative to the Board of Trustees
- Advised research of 13 undergraduates and currently runs 2 Creative Inquiry teams, and supervises 3 PhD students.
- Advises a group of Dixon Fellow students that meet at his house to discuss topics on University policy

Dr. Amod A. Ogale
Dow Chemical Professor of Chemical and Biomolecular Engineering and Director of Center for Advanced Engineering Fibers & Films (CAEFF)

Prof. Amod Ogale has been on Clemson faculty since 1986, having received his PhD in Chemical Engineering from University of Delaware and his BS from IIT Kanpur. His research expertise includes processing-microstructure-property relationships of carbon fibers, polymers, and composites. His current research involves studies of mesophase pitch and bio-mass precursors for high-performance and cost-competitive carbon fibers and their composites. He is a Fellow of the Society of Plastics Engineers, an honor bestowed upon only about 300 individuals world-wide for their sustained and life-long contributions to the field of polymers science and engineering. He is the recipient of 2013 Graffin Lecturer Award given each year to one individual by the American Carbon Society. He has published six book chapters, one patent, and over 100 research papers. He has served as the PI or co-PI on more than 50 individual research grants worth over $ 8 million, and has been a co-PI in the NSF-Engineering Research Center grant worth over $ 29 million given to CAEFF (1998-2009). Prof. Ogale has taught numerous courses, including specialized ones on polymer and composite engineering.

- Clemson Principal Investigator for DARPA project "Advanced Carbon Fibers" $2 million; PI on total six (6) research grants worth over $3.25 million
- Refereed journal papers and reviewed book chapters: 16
- Conference proceeding papers/presentations at national/international meetings: 5; Invited Keynote Speaker at the Korean Carbon Society Annual Meeting, South Korea
- Advisor and chair for 5 PhD students and graduated 1 PhD student; advisor for 2 post-doctoral research fellows
- Recipient of "2016 Composites Educator of the Year" award from the Society of Plastics Engineers Composites Division given each year to one professor nation-wide who has made a significant contribution to educating students in composite materials

College of Science

Dr. Barbara Campbell
Associate Professor, Department of Biological Sciences

Barbara Campbell is a microbial ecologist who studies the diversity and functions of microbes in aquatic ecosystems, including estuaries and local waterways. Her work is supported by the National Science Foundation and the Department of Energy. Microbes abound in all environments and are typically found on the order of a million cells per milliliter in natural water ecosystems, where they are very important in cycling of important compounds such as CO_2 and nitrogen. Microbes can also help remediate pollution, but some types also impact our water quality. Her lab uses a combination of traditional microbiological techniques combined with big data science, including bioinformatics, to characterize the types of microbes along with their activity and function in these environments. Specifically, members of her lab are involved in three different projects: 1) examining bacterial activity and growth rates using molecular methods and bioinformatics along an estuarine gradient to understand the influence of salinity and seawater rise on microbial processes; 2) studying coastal biodiversity by looking at the impact of environmental changes on the bacterial symbionts within lucinids, a common species of clam found in Southern coastal marine sediments; and 3) determining the sources of fecal contamination in our local tributaries to help understand the impact of current sewage treatment, agriculture and wildlife management practices on water quality. She currently has one postdoctoral associate, one visiting scholar, three graduate students and four undergraduate CI students in her lab.

- Sigma Xi Outstanding Young Investigator
- 14 presentations at local, regional and national meetings in 2015 and 2016, most were first authored by undergraduate or graduate students
- Four invited talks at other universities and government workshops.
- Book chapter
- Two published manuscripts
- Funding through the Department of Energy Joint Genome Program for sequencing and bioinformatics services (over $200,000)

Dr. Christopher S. McMahan
Assistant Professor, Department of Mathematical Sciences

Dr. McMahan's current research focuses in several areas, most of which revolve around biomedical applications. The main body of his interest involves developing new techniques for screening for infectious diseases. These new techniques significantly reduce the cost associated with diagnostic testing (in some cases by up to 80 or 90 percent) and increase diagnostic accuracy. Future work in this area will be funded over the next 3 years by a grant from the National Institutes of Health. Along these lines, he also works in the area of disease modeling. The

application of this work has been targeted toward monitoring and forecasting several common canine vector-borne diseases throughout the conterminous United States. This work has been continuously funded by the Companion Animal Parasite Council, has fully supported a graduate student for the past 2 years, and will be fully supporting 2 graduate students and a post-doctoral fellow during the 2016-2017 academic year. Recently, through a grant funded by Biorealm Inc., he has become involved with a project attempting to model rice production and resistance to climate change. This project is aimed at examining the genetic makeup of different rice varieties with the goal of identifying genetic markers which are predictive of yield and robustness to global climate change. Other research activities that he is currently involved include, but are not limited to, developing efficient algorithms for analyzing survival/time-to-event data, creating label fusion techniques that can be used to segment anatomical structures in brain images, environmental modeling, and the development of new computational efficient algorithms for fitting large scale spatio-temporal statistical models. In the last two years Dr. McMahan has:

- Seen 12 papers published or submitted.
- Presented three invited research talks outside of the US.
- Presented two invited research talks in the US.
- Been a contributing member of 14 presentations by others, including several by his PhD advisees.
- Received the American Statistical Association's Outstanding Statistical Application. Award, presented at the Joint Statistics Meeting (August 2014).
- Received the Outstanding Service to Graduate Students Award from the Department of Mathematical Sciences.
- Shepherded the signing of a Memorandum of Understanding between Clemson University and the U.S. Environmental supporting internships for students to gain real-world experience towards better understanding of the climate and environment.
- Participated in two grants (one as PI, one as co-PI), totaling $130,000, sponsored by the Companion Animal Parasite Council. One grant is for 2015-2016, the other is for 2016-2017.
- Served as co-PI on a $1,129,000 grant from the National Institutes of Health, for 2016-2019.
- Participated as PI on research sponsored by Biorealm Inc., begun in 2016 with initial funding of $21,494.
- Advised or co-advised 4 master's students and 1 PhD student.
- Served as a statistical consultant for WSPA/WYCW News channel 7, (March, 2016).
- Assisted in organizing 5 regional professional meetings.
- Served as both the vice president and president of the South Carolina American Statistical Association.

Dr. Andrew G. Tennyson
Assistant Professor, Department of Chemistry
Joint Appointment in Department of Materials Science and Engineering

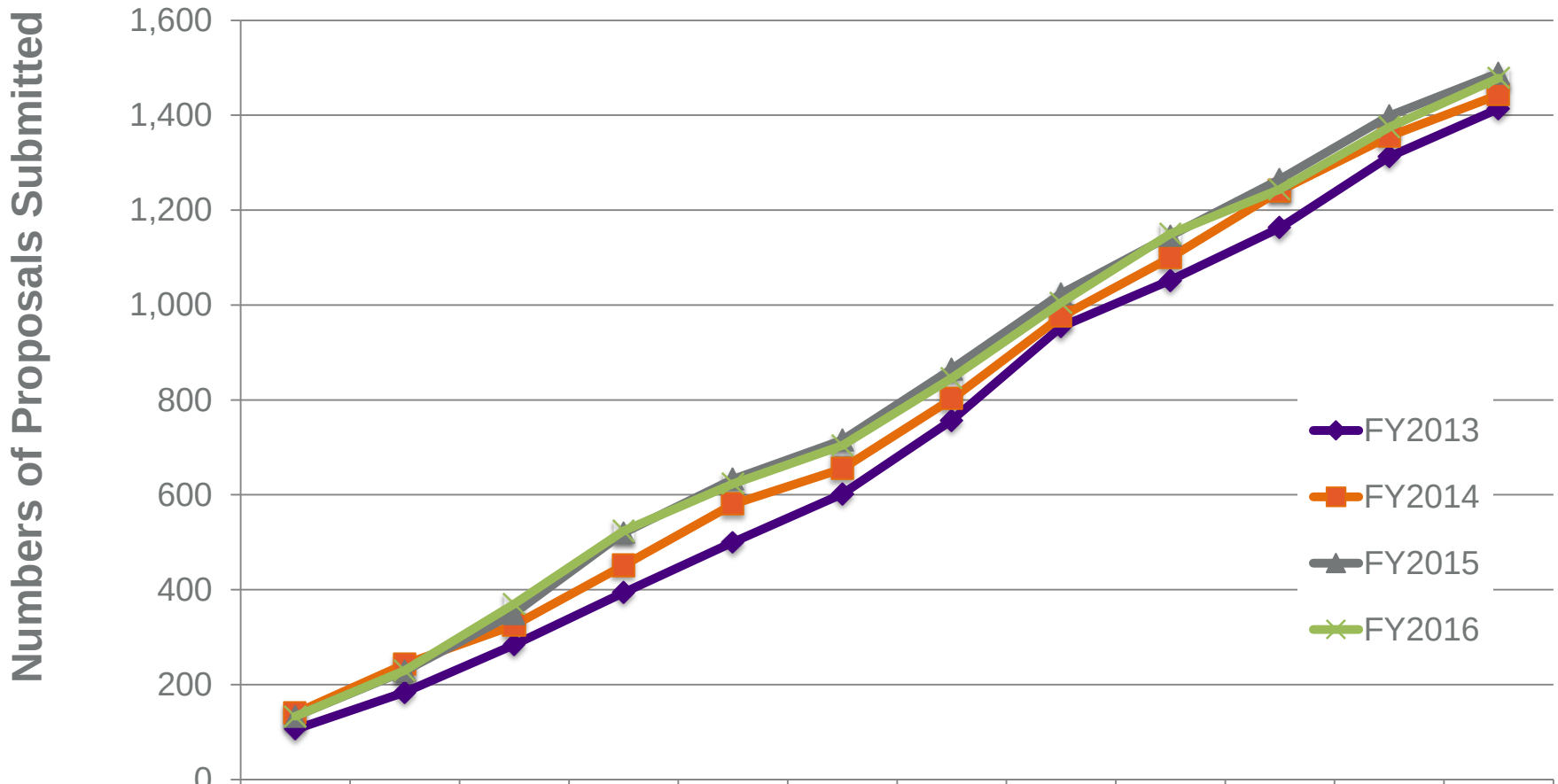
The human immune system reacts to artificial implants, such as replacement hip and knee joints, by attacking and chemically degrading them. Eventually, this damage causes the implant to fail

and it must be surgically replaced, but these are high-risk surgeries and are potentially life-threatening, particularly for elderly and infirm patients. The long-term goal of the Tennyson group is to develop implants that actively prevent chemical degradation of artificial implants by the immune system. Research in the Tennyson group is focused on modifying existing materials currently used in medical device implants, such as polyethylene and titanium, rather than inventing entirely new materials. This research will help extend the functional lifetime of artificial implants, reduce the need for high-risk surgeries, as well as decrease the pain and inflammation surrounding an artificial implant. Clemson University has recently been recognized as an R1 institution based in no small part on the high profile accomplishments of all of its faculty and the major grants they have been awarded. Contributing its part to the ongoing success of Clemson's research mission, the Tennyson group recently received a $500,000 NSF CAREER Award to support its research into artificial implants and it has been highlighted by *The Greenville News*, *The Independent Mail*, the *GSA Business Report*, and the American Society for Engineering Education. In addition, the NSF CAREER Award provides the support needed to create opportunities for Clemson undergraduate students to participate in cutting-edge biomaterials research.

- 14 refereed publications during 6-year independent career at Clemson (32 career total)
- 2 publications selected as journal Cover Features
- 2 publications in 2016 in journals with very high impact factors: *Angewandte Chemie International Edition* (12.060) and *Chemical Science* (9.211)
- H-index = 19
- 1 patent pending (No 14/955,936)
- 3 invited seminars
- 6 conference presentations
- NSF CAREER Award
- Featured in *The Greenville News* (May 24, 2016), *The Independent Mail* (May 17, 2016) and the *GSA Business Report* (May 17, 2016)
- 1 postdoctoral fellow advised
- 1 Ph.D. thesis awarded (this student won the Clemson University Distinguished Graduate Fellowship and a nationally-competitive 12-month internship at GlaxoSmithKline)
- 3 additional Ph.D. students in the group
- Mentored 65 undergraduate (12 Honors College) and 8 precollege researchers (68% female, 16% underrepresented minority/underserved population)
- 8 conference presentations by undergraduate researchers and 7 by graduate students

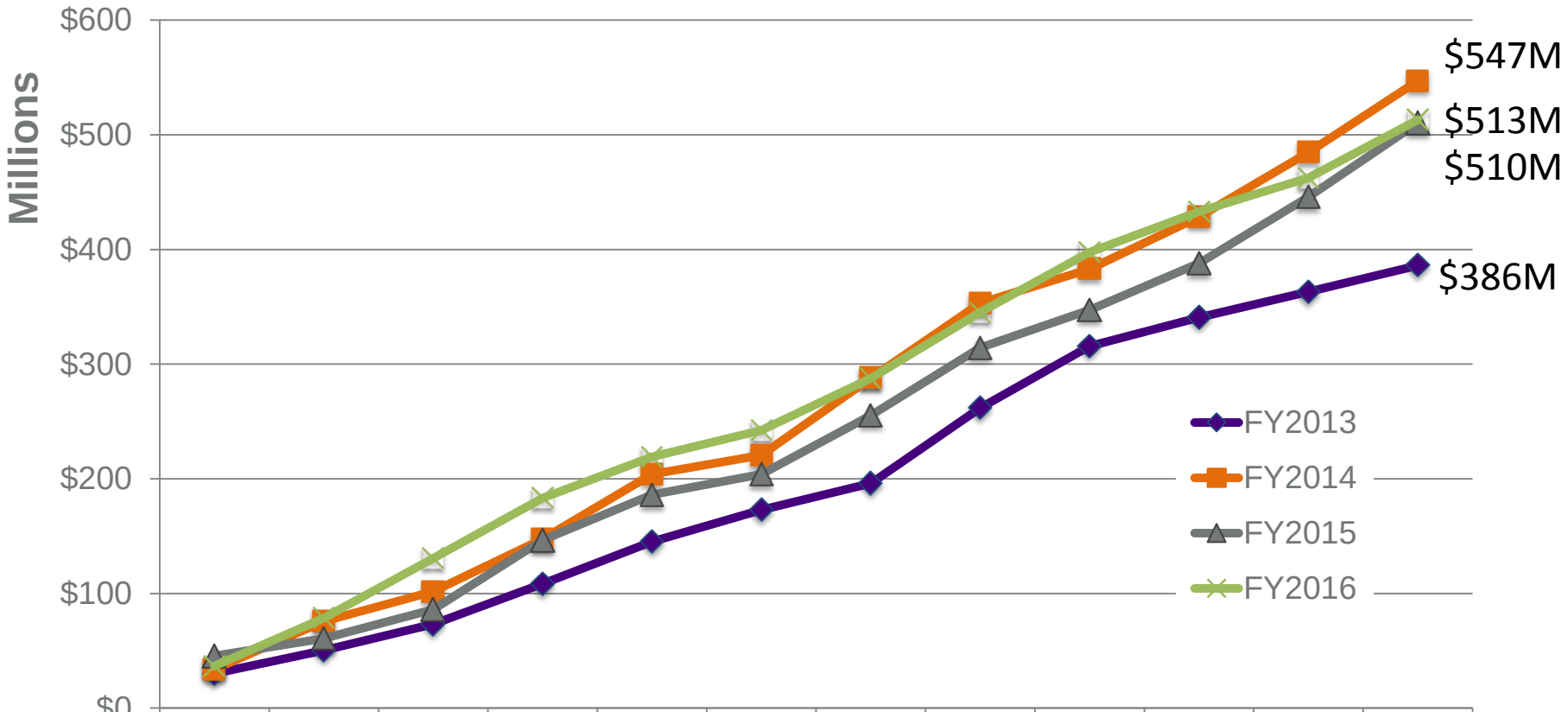
Research Metrics

CLEMSON CUMULATIVE PROPOSAL SUBMISSIONS COUNT (2013-2016)



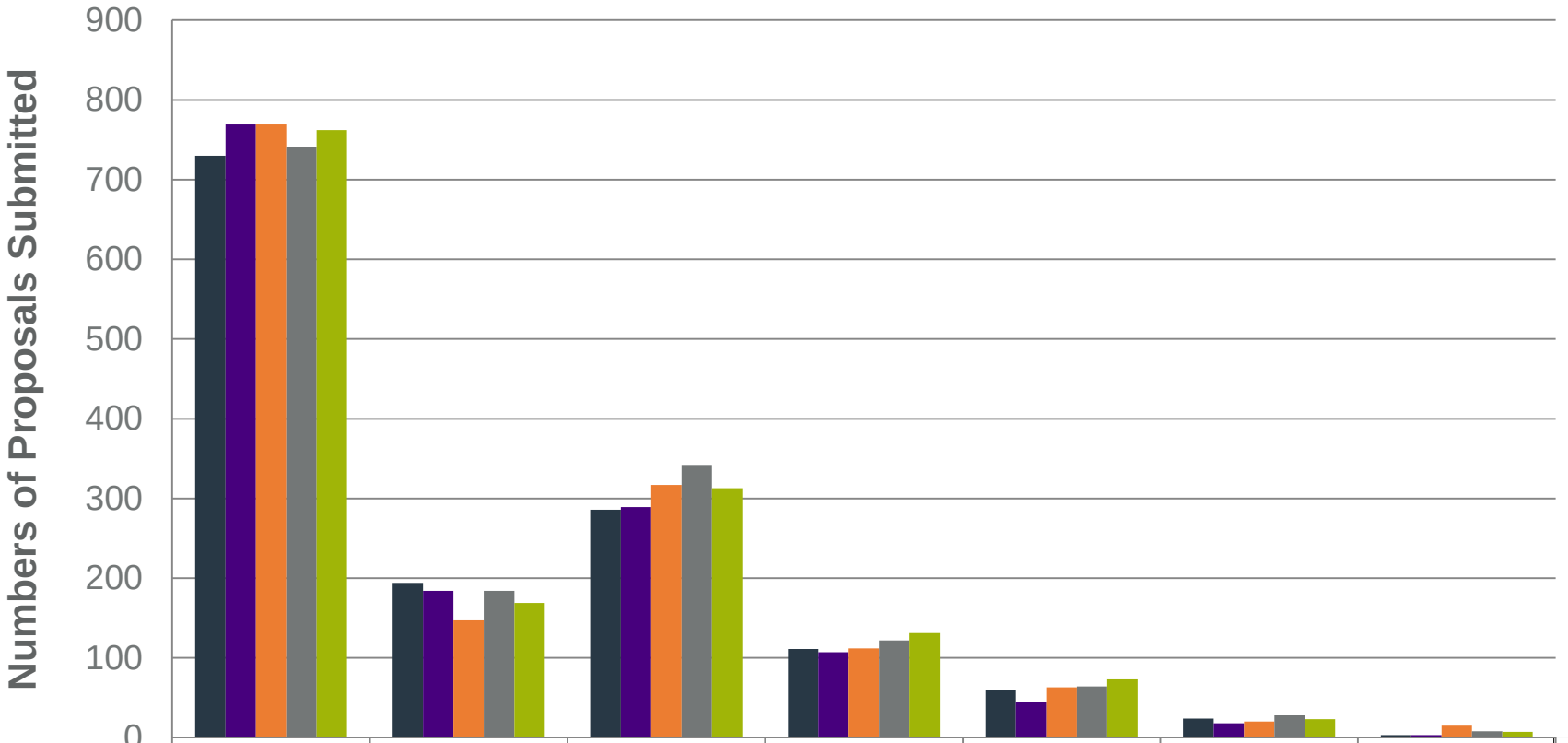
	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June
FY2013	106	184	284	394	500	602	757	954	1,052	1,163	1,313	1,414
FY2014	140	243	325	451	580	655	802	976	1,100	1,241	1,356	1,443
FY2015	133	229	350	520	633	715	865	1,024	1,146	1,265	1,399	1,489
FY2016	133	230	370	524	623	704	846	1,005	1,150	1,244	1,375	1,478

CLEMSON CUMULATIVE PROPOSAL SUBMISSIONS REQUESTED $ (2013-2016)



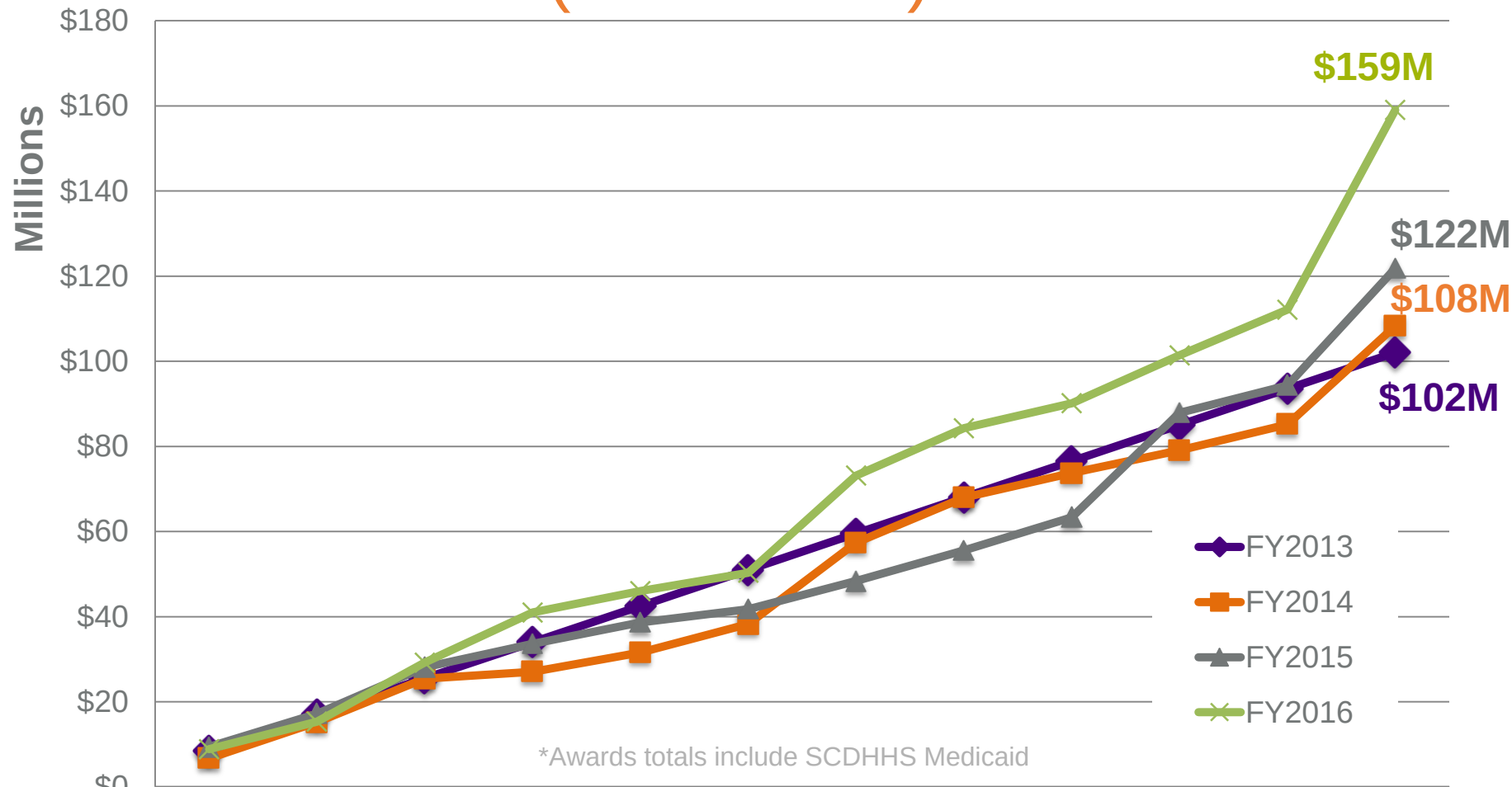
	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June
FY2013	$30	$50	$73	$108	$145	$173	$196	$262	$316	$341	$363	$386
FY2014	$34	$76	$102	$147	$204	$221	$288	$353	$383	$429	$485	$547
FY2015	$45	$61	$86	$146	$186	$204	$255	$314	$347	$388	$446	$510
FY2016	$37	$79	$131	$183	$219	$242	$288	$345	$398	$433	$462	$513

CLEMSON PROPOSAL SUBMISSIONS $ REQUESTED (2012-2016)



	< $100K	$100K-$200K	$200K-$500K	$500K-$1M	$1M-$2M	$2M-$5M	> $5M	>$1M
FY2012	730	194	286	111	60	24	3	87
FY2013	769	184	289	107	45	18	3	66
FY2014	769	147	317	112	63	20	15	98
FY2015	741	184	342	122	64	28	8	100
FY2016	762	169	313	131	73	23	7	103

CLEMSON CUMULATIVE AWARDS* (2013-2016)



	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June
FY2013	$9	$17	$26	$34	$43	$51	$60	$68	$77	$85	$94	$102
FY2014	$7	$15	$25	$27	$32	$38	$57	$68	$74	$79	$85	$108
FY2015	$9	$17	$28	$34	$39	$42	$48	$56	$63	$88	$94	$122
FY2016	$9	$15	$29	$41	$46	$50	$73	$84	$90	$101	$112	$159

Significant Awards

Clemson University's Top Ten Awards

Received Between June 22, 2016 and September 9, 2016

PI	Total Award	(Sponsor)Project Title	Abstract
Stephen Foulger	$6.0M	(NSF)RII Track-2 FEC: The Creation of Next Generation Tools for Neuroscience – Noninvasive Radioluminescence Approaches to Optogenetics	Researchers will use a novel, non-invasive method to stimulate brain neurons with light in order to better understand how neural circuits control behavior.
William Brown	$5.5M	(SCDHHS) Quality Assurance Services for the Bureau of Long Term Care Services	Investigation team will provide program evaluation to support decision-making to support quality assurance efforts of the SC Long Term Care and Behavioral Health Services of SCDHHS.
Robert Jones	$3.4M	(NSF) NSF ADVANCE: TIGERS ADVANCE Transforming the Institution through Retention and Support	The university strives to increase the numbers of women and, especially, women from underrepresented groups who join Clemson's STEM faculty.
Sez Atamturktur	$3.0M	(NSF) NRT-DESE: Preparing Resilient + Operationally Adaptive Communities through Interdisciplinary, Venture-Based Education (PROACTIVE)	Investigators will prepare students and community members for man-caused or natural-disaster-caused supply chain disruptions by providing training and certification in Model and Data Enabled Resilient Infrastructure.
Feng Ding	$1.8M	(NIH-DHHS) Inhibition of Human Islet Amyloid Polypeptide Aggregation	Investigators are testing the role of islet amyloid peptide (IAPP) in the promotion of Type-2 diabetes. Investigators will also examine the efficacy of a nanoparticle in the inhibition of IAPP.
Ronald Lamie	$0.80M	(USDA) Building Entrepreneurial Farm Management and Land	Clemson Extension will lead a farming collaborative to launch and support new and beginning farm businesses,

		Stewardship Capacity for South Carolina	especially among socially-disadvantaged, women and veteran farmers.
James Bottum	$0.75M	(NSF) RCN: Advancing Research and Education Through a National Network of Campus Research Computing Infrastructures – The CaRC Consortium	Intended to fund an advanced computing consortium focused on improving research computing capabilities at six universities by supporting cross-campus collaboration.
Celeste Bates	$0.60M	(SC Dept. of Education) Reading Recovery and Early Literacy Training Center for South Carolina	Clemson University will provide training for Reading Recovery teachers across the state of South Carolina. The Reading Recovery program supports first-grade students with extreme difficulty learning to read and write.
Hongxin Hu	$0.50M	(NSF) Collaborative Research: CICI: Secure and Resilient Architecture: SciGuard: Building a Security Architecture for Science DMZ based on SDN and NFV Technologies	Combining expertise in cybersecurity, advanced networking technology and cloud computing, researchers will develop an improved research-specific computing network to improve on existing networking technologies.
David Feliciano	$0.44M	(NIH-DHHS) SLC7A5-MTOR Regulation of Neural Development	Researchers will examine suspect cell metabolism pathways that may be implicated in neurological diseases like Autism-Spectrum Disorders.
Sez Atamturktur	$0.43M	(NSF) Simulation-Based Design of Polymer Nanocomposites for Structural Applications	Investigators will develop a new approach to developing novel materials with the ultimate goal of improving the function and durability of energy-generating wind turbines.

Item 2. Innovation Campus Review

CU-ICAR

Mr. Fred Cartwright

(presentation - no backup)

Item 3. Innovation Campus Review

Automotive Engineering

Dr. Zoran Filipi

(presentation - no backup)