



ANNUAL RESEARCH REPORT

TOGETHER, WE'LL
GUIDE THE FUTURE
OF TOMORROW'S
HEALTH CARE.

OFFICE OF RESEARCH AND SPONSORED PROGRAMS

July 1, 2019 - June 30, 2020

Historical Research Support and Activity Data

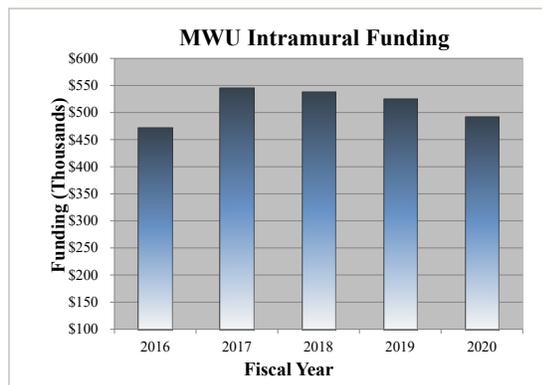
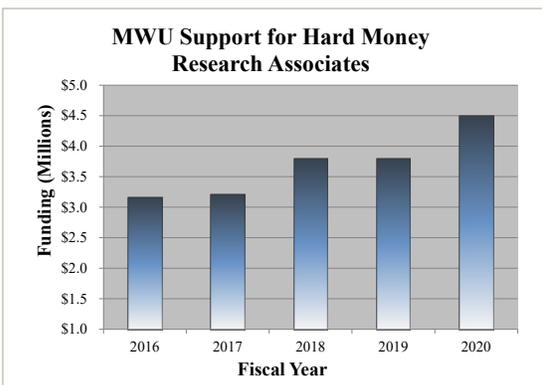
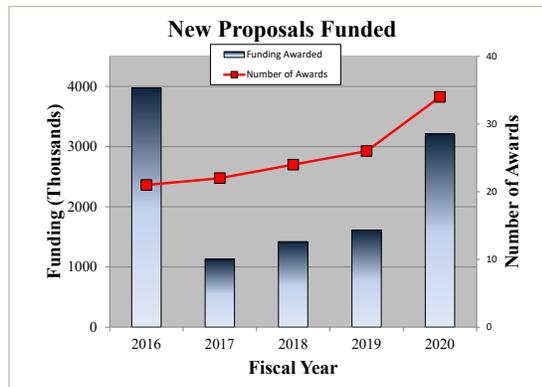
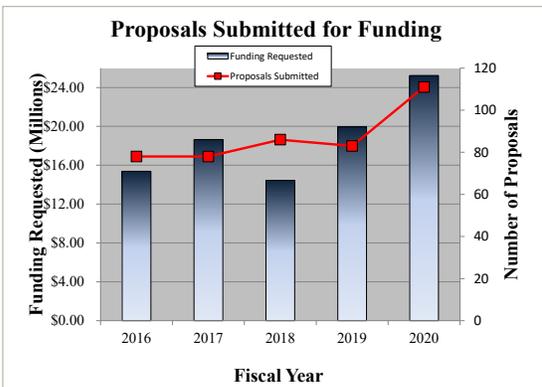
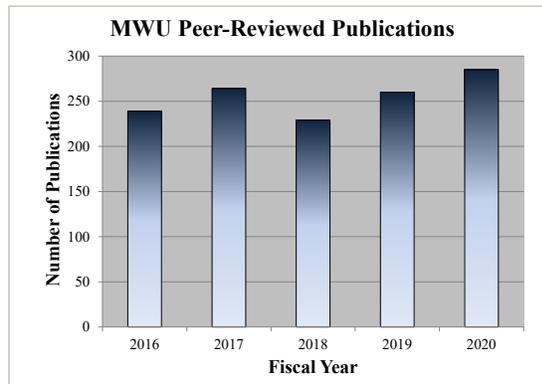
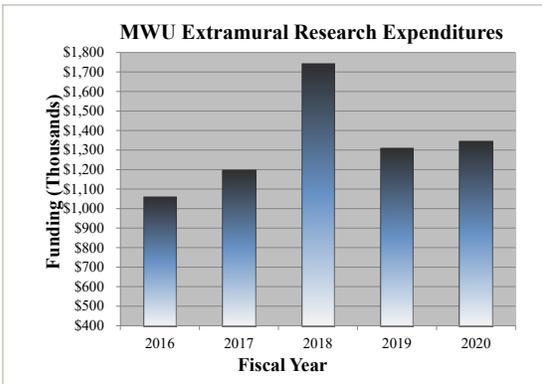
The Midwestern University (MWU) Annual Research Report demonstrates research achievements of which members of the MWU community should be proud. As you will see inside this report, support for research at MWU is strong. The graphs below show historical data over the last five years, highlighting MWU's research activity and support. THANK YOU to all of MWU's faculty members, research staff and students whose efforts have consistently strengthened MWU's research programs.



Theresa W. Fossum, DVM, PhD
Vice President of Research & Strategic Initiatives



James M. Woods, PhD
Director, Office of Research & Sponsored Programs



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Fast Research Facts 2019-2020

Support for Faculty Research

- All Midwestern University (MWU) faculty are in 100% “hard money” (university-funded) positions, where they are encouraged but not dependent upon bringing in extramural funding;
- Recaptured Salary Incentive: Faculty who receive grants which support “hard money” salary positions can earn “additional compensation”;
 - § MWU faculty received \$45,196 in such incentives in FY20;
- MWU provides “hard money” research technicians for faculty, including 68.3 Full Time Equivalents funded at \$4,545,868 for fiscal year FY 2020;
- New faculty are provided start-up packages;
- Faculty can request capital research equipment through the university;
 - § MWU purchased \$1,152,682 in capital research equipment during FY20;
 - § Each campus requested and received a new confocal microscope within FY 2013 or FY 2014;
- Competitive intramural funding is available for faculty who actively seek extramural funding, including \$490,777 awarded in FY 2020;

Support for Student Research

- MWU makes a significant commitment to student research, demonstrated through the awarding of 103 fellowships at a total cost of \$499,400 for research stipends in FY 2020;
- MWU’s Research Days, held on each campus, had a total of 233 abstracts in 2020 where almost all of these were by students engaged in research;
- MWU pays for high-quality poster printing for its students and faculty, including support of \$8,601 for printing research posters through the ORSP in FY 2020;
- MWU supports students to travel and present their research data, including up to \$500 of support for first author students who have an abstract accepted at a national meeting: \$20,199 in 2020;

Funding Success

- MWU’s extramural research expenditures for FY20 totaled \$1,343,972;
- MWU faculty have received more than 50 NIH grants, the majority of which have been R15 awards, but also include several R01, R21 and R03 awards;
- NSF & HRSA Grants;
- Foundation Grants: American Heart Association, American Optometric Foundation, HonorHealth, Leakey Foundation, Marfan Foundation, PhRMA Foundation, PetSmart Charities, Alzheimer’s Drug Discovery Foundation, National Assoc. of Chain Drug Stores, Pharmaceutical Research & Manufacturers of America Foundation, etc.;
- For-profit grants: Allegra Therapeutics, Boehringer Ingelheim, Johnson & Johnson, Merck, Nevakar, Hiossen, Sangart, etc.;

Office of Research & Sponsored Programs (ORSP)

- MWU's ORSP handles both pre-award and post-award grant and contract submissions, including 111 proposals submitted in FY 2020 requesting \$25,245,106;
- MWU's ORSP offers intramural funds to all colleges and the following full time positions to support faculty research:
 - § A Grants Specialist on each campus to assist faculty with grant and budget preparation and submission;
 - § Research Administrators on each campus to assist MWU's IACUC, IRB, Radiation Safety and Biosafety Committees;
 - § A Manager of Bio/Clinical Statistics and a Biostatistician to assist with data management and statistical needs;
 - § An ORSP Assistant Director and a Research Compliance Specialist to help ensure MWU performs research in a manner compliant with federal, state and MWU regulations;
- For faculty involved in animal research who are seeking extramural funding, the ORSP can waive animal *per diem* charges, including \$296,429 of waived charges in FY 2020;
- In FY 2020, MWU's ORSP offered \$10,198 to support a Research Seminar Series where faculty can bring in experts in their field (departments typically supplement the ORSP honorarium);

Research Facilities

- In 2020 a new vivarium for animal research was opened on the Glendale campus which added 18,500 additional square feet of research space for studying rodents at a cost of \$9,250,000;
- In 2020, new "dry lab" research space was opened in Dr. Arthur G. Dobbelaere Science Hall at a cost of more than \$1,159,000
- In 2014 MWU completed Cactus Wren, a new building with research facilities on our Glendale, Arizona campus:
 - § This building has 11,161 square feet of space dedicated to research;
 - § The research-related costs of the building totaled \$10,017,270;
- In 2011 MWU completed construction of a new Science Hall on our Downers Grove, Illinois campus:
 - § This provides researchers with 104,789 net assignable square feet dedicated to research;
 - § The research-related costs of the building totaled \$56,200,200;
 - § This includes a 13,170 square foot animal facility which received full AAALAC accreditation in 2015;

The Bottom Line

- Midwestern University's commitment to building and sustaining a vital research environment is genuine;
- Administrative support for research is very strong, because of a firm belief in the ingenuity of MWU faculty.

MULTIDISCIPLINARY EXTRAMURALLY-SUBMITTED PROPOSALS

Investigator/s	College	Department	Proposal Title	Submitted	Total	Agency	Start Date
*Kronstad, L. (CGS) & Lopez, B. (CVM)	CGS & CVM	Microbiology & Immunology and Pathology & Population Medicine	Bridging Viral Genetics and Host Immunity to Aid in Rational Influenza Vaccine Design	6/25/2020	\$450,000	NIH-R15 (REAP)	4/1/2021

Total of Multidisciplinary Extramurally-submitted Proposals: \$450,000

ARIZONA COLLEGE OF OPTOMETRY (AZCOPT): EXTRAMURALLY-SUBMITTED PROPOSALS

Investigator/s	College	Department	Proposal Title	Submitted	Total	Agency	Start Date
Feis, A.	AZCOPT	Optometry	A Pilot Randomized Clinical Trial Base - In Prism Spectacles for Intermittent Exotropia (IXT6)	10/1/2019	\$7,313	National Eye Institute Cooperative Agreement with JAEF Center for Health Research, Inc.	10/1/2019
Vasudevan, B.	AZCOPT	Optometry	A Multi-center, Double-masked, Randomized, Placebo-controlled, Phase 3 Study of the Safety and Efficacy of Atropine 0.1% and 0.01% Ophthalmic Solutions Administered with a Microdose Dispenser for the Reduction of Pediatric Myopia Progression (The CHAPERONE Study)	7/19/2019	\$590,035	Eyeovia	9/1/2019
Vasudevan, B.	AZCOPT	Optometry	Effect of LipiFlow on Ocular Surface Disease Management with Cataract Surgery	9/3/2019	\$270,000	Johnson & Johnson Surgical Vision Division	2/1/2020
Vasudevan, B. & Fintelman, R.	AZCOPT	Optometry	Comparison of Non-Diffractive IOL vs. enVista IOL Visual Performance	11/29/2019	\$155,000	Alcon, Inc.	1/1/2020
Vasudevan, B. & Helmuth, K.	AZCOPT	Optometry	Inflammatory Marker and Contact Lens Dropout	1/17/2020	\$130,000	Novartis	7/1/2020
Vasudevan, B., Helmuth, K., & Fintelman, R.	AZCOPT	Optometry	Efficacy of Cequa in Dry Eye Patients	2/6/2020	\$256,000	Sun Pharma	7/1/2020
Yeh, F., Kenworthy, P., Addy, L., Feis, A., Liao, G. & Vasudevan, B.	AZCOPT	Optometry	Clinical Evaluation of a Daily Wear Frequent Replacement Silicone Hydrogel Lens Trial	11/27/2019	\$56,600	Alcon, Inc.	3/1/2020

Total of AZCOPT Extramurally-submitted Proposals: \$1,464,948

CHICAGO COLLEGE OF PHARMACY (CCP): EXTRAMURALLY-SUBMITTED PROPOSALS

Investigator/s	College	Department	Proposal Title	Submitted	Total	Agency	Start Date
*Briyal, S.	CCP	Pharmaceutical Sciences	Endothelin B Receptor-mediated Neural Regeneration, Plasticity and Functional Improvement in Alzheimer's Disease	6/25/2020	\$450,000	NIH-R15 (REAP)	4/1/2021
Merker, A.	CCP	Pharmacy Practice	Midwest Integration of the National HIV Curriculum - Year 2	10/11/2019	\$10,000	HRSA, HIV/AIDS Bureau Subcontract from the University of Illinois Chicago	9/1/2019
*Ranjan, A.	CCP	Pharmaceutical Sciences	Effect of Endothelin B Receptors (ETBR) Signaling on Differentiation of Neural Stem/Progenitor Cells in Adult Brains After Ischemic Stroke	6/25/2020	\$446,451	NIH-R15 (REAP)	4/1/2021
Rhodes, N.	CCP	Pharmacy Practice	Whole-genome Sequence-based characterization and Prediction of Antibiotic Resistance in <i>Pseudomonas aeruginosa</i>	7/5/2019	\$45,685	NIH-R01 Subcontract from Northwestern University	4/1/2020
Rhodes, N.	CCP	Pharmacy Practice	Development of a Clinical Decision Algorithm for Adults Hospitalized with Pneumonia	8/16/2019	\$19,998	Society of Infectious Disease Pharmacists	11/1/2019
Rhodes, N.	CCP	Pharmacy Practice	Development of a Clinical Decision Algorithm for Adults Hospitalized with Pneumonia	9/18/2019	\$9,999	American Association of Colleges of Pharmacy	3/1/2020

CCP: EXTRAMURALLY-SUBMITTED PROPOSALS (Continued)

Investigator/s	College	Department	Proposal Title	Submitted	Total	Agency	Start Date
Rhodes, N.	CCP	Pharmacy Practice	Effect of Omadacycline Alone and in Combination with Meropenem Against Clinical <i>Acinetobacter baumannii</i> Isolates	9/30/2019	\$2,829	Paratek Pharmaceuticals Subcontract from Albany College of Pharmacy and Health Sciences	10/1/2019
*Rhodes, N.	CCP	Pharmacy Practice	COVID-19 Fast Grants	4/12/2019	\$99,999	Fastgrants	5/1/2020
*Rhodes, N.	CCP	Pharmacy Practice	Systems-based Pharmacologic Modelling to Elucidate Beta-Lactam Clinical Pharmacodynamics and Define Optimal Dosing Regimens in Severe Pneumonia	6/5/2020	\$2,380,970	NIH-R01 with a Subcontract to Northwestern University	4/1/2021
Scheetz, M.	CCP	Pharmacy Practice	Assessment of MODS and Personalized Exposure of Antibiotics (AMPLE)	2/5/2020	\$917,280	NIH-R01 Subcontract from Children's Hospital of Philadelphia	9/1/2020
*Scheetz, M.	CCP	Pharmacy Practice	Quantifying Antibiotic Induced Kidney Injury to Define Precision Dosing Strategies	6/5/2020	\$2,340,049	NIH-R01 with Subcontracts to Northwestern University, the European University of Cyprus and the Università degli Studi di Cagliari	4/1/2021
Wang, S.	CCP	Pharmacy Practice	Assessment of Patients' Perceptions on Antimicrobial Stewardship and Attitudes Towards Board Certified Clinical Pharmacists Within the Movement to Reduce Antimicrobial Resistance	9/6/2019	\$5,000	Board of Pharmacy Specialties	11/1/2019

Total of CCP Extramurally-submitted Proposals: \$6,728,260

COLLEGE OF DENTAL MEDICINE ARIZONA (CDMA): EXTRAMURALLY-SUBMITTED PROPOSALS

Investigator/s	College	Department	Proposal Title	Submitted	Total	Agency	Start Date
Beals, D. (Homer, A., CDMA '23)	CDMA	Dental Medicine	The Effect of Osseodensification Preparations on Dental Implant Stability	1/17/2020	\$2,100	AADR	4/1/2020
Mitchell, J.	CDMA	Dental Medicine	Biomimetic Oral Appliance Therapy for the Treatment of Mild to Moderate Obstructive Sleep Apnea (OSA) in Adults	8/6/2019	\$750,000	Vivos Therapeutics	1/1/2020
Mitchell, J. (Magee, A., CDMA '23)	CDMA	Dental Medicine	Mechanical Analysis of Mandibular Implant Supported Prostheses Constructed with Fiber Reinforced Resin	1/17/2020	\$2,100	AADR	4/1/2020
Pierre-Bez, A. (Olson, A., CDMA '23)	CDMA	Dental Medicine	The Effects of a Novel Fluoride Bioactive Glass-containing Sealant on Enamel Remineralization	1/17/2020	\$2,100	AADR	4/1/2020

Total of CDMA Extramurally-submitted Proposals: \$756,300

COLLEGE OF DENTAL MEDICINE ILLINOIS (CDMI): EXTRAMURALLY-SUBMITTED PROPOSALS

Investigator/s	College	Department	Proposal Title	Submitted	Total	Agency	Start Date
Ciancio, M. (Nierman, R., CDMI '22)	CDMI	Dental Medicine	Nodal and Cripto-1 Signal via TGF-Beta Related SMAD 2/3/4 Complex in Oral Squamous Cell Carcinoma	1/17/2020	\$2,100	AADR	4/1/2020
Cuevas-Nunez, M. (Portnoy, A., CDMI '22)	CDMI	Dental Medicine	The Clinical Efficacy of 660nm and 810nm Low Level Laser Therapy Adjuvant to Scaling and Root Planing in the Treatment of Periodontitis	1/17/2020	\$2,100	AADR	4/1/2020
Arnouk, H. (Ladnier, E., CDMI '22)	CDMI	Dental Medicine	Biological Significance of Cornulin in Oral Lichen Planus	1/17/2020	\$2,100	AADR	4/1/2020
Rocha de Oliveira, M. (Hu, C.H., CDMI '22)	CDMI	Dental Medicine	Salivary Level of Metals in Periodontal Disease	1/17/2020	\$2,100	AADR	4/1/2020

Total of CDMI Extramurally-submitted Proposals: \$8,400

COLLEGE OF GRADUATE STUDIES (CGS): EXTRAMURALLY-SUBMITTED PROPOSALS

Investigator/s	College	Department	Proposal Title	Submitted	Total	Agency	Start Date
*Al-Nakkash, L.	CGS	Physiology	Ability of 12 Weeks Moderate Exercise and/or Genistein (Soy) to Reverse Hyperglycemia, Hyperinsulinemia, Fatty Liver Disease and Microbiome Changes Induced by Chronic Consumption of High Fat High Sugar Diet	5/1/2020	\$40,000	Diabetes Action Research and Education Foundation	1/1/2021
*Al-Nakkash, L.	CGS	Physiology	Role of Genistein to Influence Growth and Intestinal Function in Cystic Fibrosis Mice	6/25/2020	\$435,300	NIH-R15 (REAP)	4/1/2021
Al-Nakkash, L. & Shim, M.	CGS	Physiology, Biochemistry	Genistein and Exercise Ameliorate Senescence and Inflammation to Preclude Progression of Alzheimer's Pathology	2/24/2020	\$50,000	U.S. National Academy of Medicine	7/1/2020
*Al-Nakkash, L., Broderick, T. & Shim, M.	CGS	Physiology, Biochemistry	Reversal of Diabetic Obesity with Dietary Modifications and/or Exercise Results in Improved Cognitive Ability, Inflammation, Senescence and thus Mitigation of AD-like Pathology	4/30/2020	\$26,075	Arizona Alzheimer's Consortium	7/1/2020
*Arnouk, H.	CGS	Pathology	Characterization of Cornulin and DJ-1 as Molecular Biomarkers for the Progression of Oral Squamous Cell Carcinoma	6/25/2020	\$416,438	NIH-R15 (REAP)	4/1/2021
Baab, K.	CGS	Anatomy	Testing Adaptive Hypotheses of Plio-Pleistocene Hominin Craniofacial Evolution	7/22/2019	\$381,605	National Science Foundation	1/1/2020
Baab, K.	CGS	Anatomy	Testing Adaptive Hypotheses of Plio-Pleistocene Hominin Craniofacial Evolution	1/27/2020	\$386,705	National Science Foundation	8/1/2020
*Ebeid, M.	CGS	Anatomy	The Role of Prdm16 in Mammalian Cochlear Development	6/26/2020	\$450,000	NIH-R21	4/1/2021
*Esfandiarei, M.	CGS	Biomedical Sciences	Severity of Neuroinflammation and Neurovascular/Neurotransmission of Dysregulation After Traumatic Brain Injury in a Mouse Model of Marfan Syndrome	6/1/2020	\$100,000	Marfan Foundation with a Subcontract to the University of Arizona	1/1/2021
*Esfandiarei, M.	CGS	Biomedical Sciences	Neurovascular and Neuropathophysiology Before and After Traumatic Brain Injury in a Model of Connective Tissue Disorder	6/16/2020	\$77,097	NIH-R21 Subcontract from the University of Arizona	4/1/2021
Haley, N.	CGS	Microbiology & Immunology	Evaluation of the Susceptibility of Whitetail Deer with Rare Prnp Genotypes to CWD	7/11/2019	\$441,946	USDA AFRI NIFA	1/1/2020
*Hull, E.	CGS	Biomedical Sciences	The Influence of Iron Regulatory Proteins on Ferroptosis	6/25/2020	\$43,537	NIH-R15 Subcontract from Oklahoma State University	4/1/2021
Jadavji, N.	CGS	Biomedical Sciences	Identification of Developmental Factors Involved in Ischemic Stroke Outcomes in Adulthood and Old Age	7/16/2019	\$152,735	American Heart Association - AIREA	1/1/2020
Jadavji, N.	CGS	Biomedical Sciences	Neurobiology of Aging	9/11/2019	\$75,000	Alfred P. Sloan Foundation	9/15/2020
Jadavji, N.	CGS	Biomedical Sciences	Identifying the Role of Maternal and Postnatal Dietary Deficiencies on Peripheral and Cerebral Vasculature and Stroke Outcome in Middle- and Old-age Offspring	2/24/2020	\$450,000	NIH-R15 (REAP) with a Subcontract to Baylor Research Institute	1/1/2021
*Jadavji, N.	CGS	Biomedical Sciences	Future Principal Investigator STEM Survey	4/15/2020	\$90,000	University of North Dakota Seed Grant	7/1/2020
*Jadavji, N.	CGS	Biomedical Sciences	The Impact of Dietary Vitamin B12 Deficiency on Ischemic Stroke Outcome in Aged Female and Male Mice	4/30/2020	\$19,908	Arizona Alzheimer's Consortium	7/1/2020

CGS: EXTRAMURALLY-SUBMITTED PROPOSALS (Continued)

Investigator/s	College	Department	Proposal Title	Submitted	Total	Agency	Start Date
*Jentarra, G., Jones, T.B., & Gonzalez, F.	CGS	Precision Medicine, Anatomy, Microbiology & Immunology	Identification and Culture of Microbes in Brain Tissue from Alzheimer's Disease Patients and Controls	4/30/2020	\$34,890	Arizona Alzheimer's Consortium	7/1/2020
*Kim, C.	CGS	Biochemistry & Molecular Genetics	Structure, Assembly and Function of Polycomb Repression Complex 1	6/5/2020	\$1,625,000	NIH-R01 with a Subcontract to the Institut de Recherches Cliniques de Montréal	4/1/2021
Korch, S. & Norris, J.	CGS	Pharmacology	<i>In vitro</i> and <i>in vivo</i> Analysis of Metabolic Adaptations in Non-small Cell Lung Cancer as a Function of p53 and Energy Status Using a Novel, Direct ATP Chelation Methodology	10/25/2019	\$450,000	NIH-R15 (REAP)	7/1/2020
Kopf, P.	CGS	Pharmacology	The Pathophysiology of Moderately High Salt-induced Hypertension	7/17/2019	\$139,055	American Heart Association - AIREA	1/1/2020
Martinez-Guryrn, K.	CGS	Biomedical Sciences	The Impact of Emodin in Microbiome-Epigenetic Interactions Linked to Inflammatory Heart Disease	7/24/2019	\$174,657	USDA Subcontract from the University of Nevada-Reno	9/1/2019
Martinez-Guryrn, K.	CGS	Biomedical Sciences	Developmental Regulation of Obesity and Fat Absorption by Neonatal Colonization with Gut Microbes	2/16/2020	\$375,000	NIH-R21	9/1/2020
Martinez-Guryrn, K.	CGS	Biomedical Sciences	Implications of a Novel Food Bioactive Compound on Health: Effects of Beef-derived microRNAs on the Gut Cells and Microbiota	3/25/2020	\$58,032	USDA Subcontract from the University of Nevada-Reno	1/1/2021
*Mejia-Alvarez, R.	CGS	Physiology	Evaluation of the Use of Nanoparticled and Functionalized Citric Extracts in Healthy Volunteers and its Therapeutic Potential in Patients Infected with COVID-19	4/24/2020	\$5,511	National Council of Science and Technology (CONACYT) - Mexico Subcontract from Universidad Autonoma Metropolitana	6/1/2020
O'Neill, M.	CGS	Anatomy	Collaborative Research: Measuring Leaping Performance, Evaluating its Anatomical Correlates, and Reconsidering Leaping in Primate Origins and Early Evolution	8/2/2019	\$226,009	National Science Foundation	1/1/2020
O'Neill, M.	CGS	Anatomy	Collaborative Research: The Effects of Musculoskeletal Design on Bipedal Walking and Running Performance in Humans, Chimpanzees and Early Hominims	1/21/2020	\$262,917	National Science Foundation	9/1/2020
O'Neill, M.	CGS	Anatomy	Collaborative Research: Measuring Leaping Performance, Evaluating its Anatomical Correlates, and Reconsidering Leaping in Primate Origins and Early Evolution	1/31/2020	\$226,009	National Science Foundation	8/1/2020
Pierce, M.	CGS	Pharmacology	Effect of Oxytocin Analogs on Pharmacological Signaling and Neuronal Connectivity in Murine Primary Neuronal Cultures	9/1/2019	\$100,000	PhRMA Foundation	2/1/2020
Pierce, M.	CGS	Pharmacology	Effect of Oxytocin Analogs on Social Behaviors, Pharmacological Signaling, and Neuronal Connectivity in a Mouse Model of Autism	9/13/2019	\$300,000	Simons Foundation Autism Research Initiative	4/1/2020
Pierce, M.	CGS	Pharmacology	Effect of Oxytocin Analogs on Learning and Memory, Pharmacological Signaling, and Neuronal Connectivity in a Mouse Model of Autism	1/1/2020	\$225,000	The McKnight Endowment Fund for Neuroscience	7/1/2020
Pierce, M.	CGS	Pharmacology	Effect of Oxytocin Analogs on Pharmacological Signaling, Neurite Outgrowth, and Neuronal Connectivity in Human-derived <i>in vitro</i> Neuronal Cell Models	2/16/2020	\$150,000	NIH-R03	9/1/2020

CPG: EXTRAMURALLY-SUBMITTED PROPOSALS (Continued)

Investigator/s	College	Department	Proposal Title	Submitted	Total	Agency	Start Date
*Plotkin, B.	CGS	Microbiology & Immunology	Statin Co-Drug Activity and Efficacy Against Urgent and Serious Threat Microbes	6/25/2020	\$447,524	NIH-R15 (REAP)	4/1/2021
Puthanveetil, P.	CGS	Pharmacology	Chrysin-mediated Cardioprotection Against High Calorie-induced Nitrosative Stress	7/17/2019	\$139,729	American Heart Association - AIREA	1/1/2020
Puthanveetil, P.	CGS	Pharmacology	Chrysin-mediated Cardioprotection Against High Calorie-induced Nitrosative Stress	10/25/2019	\$440,269	NIH-R15 (REAP)	7/1/2020
Revill, A.	CGS	Physiology	Cholinergic Modulation of XII Motoneurons and XII Premotoneurons	10/25/2019	\$447,700	NIH-R15 (REAP)	7/1/2020
Revill, A.	CGS	Physiology	Excitatory and Inhibitory Cholinergic Modulation of XII Motoneurons and XII Premotoneurons Across Postnatal Development	12/30/2019	\$225,000	McKnight Foundation	7/1/2020
Revill, A.	CGS	Physiology	Excitatory and Inhibitory Cholinergic Modulation of XII Motoneurons Across Postnatal Maturation	1/15/2020	\$50,000	Sleep Research Society Foundation	7/1/2020
Riede, T.	CGS	Physiology	Obesity and Laryngeal Function	8/13/2019	\$75,000	MMPC MICROMouse	1/1/2020
*Riede, T.	CGS	Physiology	The Effect of Obesity on the Form and Function of the Upper Respiratory Airways in the Mouse Model	4/30/2020	\$75,000	MMPC MICROMouse	8/1/2020
Simons, R.	CGS	Anatomy	The Development of Bone Laminarity and Collagen Fiber Orientation in Chickens	12/2/2019	\$6,000	American Philosophical Society	4/1/2020
Smith, H.	CGS	Anatomy	Palaeohistological and Computed Microtomographic Analyses of Cenomanian Turtle Fossils and Other Associated Fauna from the Arlington Archosaur Site (Texas, USA)	2/24/2020	\$9,566	The Paleontological Association	8/1/2020
Soby, S.	CGS	Biomedical Sciences	Inhibition of Pathogenic Fungal Growth by Bacterial Volatile Compounds	10/25/2019	\$457,081	NIH-R15 (REAP) with a Subcontract to Arizona State University	7/1/2020
*Strizzi, L.	CGS	Pathology	Determining the Mechanisms that Drive Phenotype Changes in Cancer Cells	6/5/2020	\$35,456	NIH-R01 Subcontract from Clemson University	4/1/2021
*Swanson, M. & Bae, N.	CGS	Biochemistry & Molecular Genetics	The Role of Phosphorylation on the Function of the Telomere Protection Protein RAP1	4/30/2020	\$19,127	Arizona Alzheimer's Consortium	7/1/2020
Swartzendruber, J.	CGS	Microbiology & Immunology	Prevention of House Dust Mite-induced asthma with <i>Bacillus subtilis</i>	10/25/2019	\$448,323	NIH-R15 (REAP)	7/1/2020
Townsend, K.E.B.	CGS	Anatomy	Collaborative Research: After the Bridgerian Crash - An Integrated Analysis of Mammalian Paleocommunities and Paleoecologies During the Middle Eocene	10/31/2019	\$239,596	National Science Foundation	7/1/2020
Townsend, K.E.B. & Adrian, B.	CGS	Anatomy	Comparative Cranial Morphology of "Desert" Gopherus species: Implications for Conservation and Management	12/2/2019	\$2,500	Desert Tortoise Council	7/1/2020
Wellensiek, B.	CGS	Biomedical Sciences	Partnership: Development of an African Swine Fever Virus Vaccine	7/11/2019	\$22,000	USDA AFRI NIFA Subcontract from Arizona State University	1/1/2020

Total of CGS Extramurally-submitted Proposals: \$11,128,297

**COLLEGE OF HEALTH SCIENCES-DOWNERS GROVE (CHS-DG):
EXTRAMURALLY-SUBMITTED PROPOSALS**

Investigator/s	College	Department	Proposal Title	Submitted	Total	Agency	Start Date
Cueller, M.	CHS-DG	Speech Language Pathology	A Game-based Health Promotion Program to Improve Activities of Daily Living, Social Interaction and Overall Quality of Life in Long-term Care Facility Residents in the state of Illinois	10/15/2019	\$459,206	Illinois Department of Public Health, Office of Health Care Regulation	7/1/2020
Evans, C.	CHS-DG	Physical Therapy	Patterns and Sources for Contamination and Effectiveness of Cleaning Strategies in an Outpatient Physical Therapy Clinic	9/16/2019	\$990	Illinois Physical Therapy Foundation	1/1/2020
Helminski, J.	CHS-DG	Physical Therapy	Vestibular Function and Balance in People with Diabetes Mellitus	3/2/2020	\$14,000	RR&D Small Projects in Rehabilitation Research (SPiRE) Subcontract from the Department of Veterans Affairs, Office of Research and Development	10/1/2020
*Mahaffey, L.	CHS-DG	Occupational Therapy	Tiered School Mental Health for Support Services: Preparing Related Services Personnel to Work with Children with Mental Health Needs	5/29/2020	\$1,095,809	U.S. Department of Education - Office of Special Education and Rehabilitative Services	9/1/2020

Total of CHS-DG Extramurally-submitted Proposals: \$1,570,005

COLLEGE OF HEALTH SCIENCES-GLENDALE (CHS-GD): EXTRAMURALLY-SUBMITTED PROPOSALS

Investigator/s	College	Department	Proposal Title	Submitted	Total	Agency	Start Date
de Diego Lazaro, B.	CHS-GD	Speech Language Pathology	Home Language Support Pilot Program for Children with Hearing Loss from Spanish-speaking Families	11/8/2019	\$19,704	HRSA Subcontract from Arizona Department of Health Services	4/1/2020
de Diego Lazaro, B.	CHS-DG	Speech Language Pathology	Spaced-Word Retrieval as a Vocabulary Teaching Strategy for Children with Hearing Loss	2/3/2020	\$7,096	Society for Research in Child Development	7/1/2020
*de Diego Lazaro, B.	CHS-DG	Speech Language Pathology	Spaced-Word Retrieval as a Vocabulary Teaching Strategy for Children with Hearing Loss	4/15/2020	\$10,000	American Speech-Language-Hearing Foundation	12/1/2020
Eikenberry, M.	CHS-GD	Physical Therapy	Development of a New Robotic Approach to Quantify Intrinsic and Reflexive Ankle Mechanics in the Control of Postural Balance	7/15/2019	\$4,706	NIH-R03 Subcontract from Arizona State University	4/1/2020
Eikenberry, M.	CHS-GD	Physical Therapy	Robotic Walking Training on a Compliance-controlled Ground for Stroke Patients	10/15/2019	\$11,745	American Heart Association Subcontract from Arizona State University	4/1/2020
Eikenberry, M.	CHS-GD	Physical Therapy	Dual Locomotor Adaptation to Visual and Split-Belt Perturbations	2/3/2020	\$3,460	National Science Foundation Subcontract from Arizona State University	8/1/2022
*Eikenberry, M.	CHS-GD	Physical Therapy	A Robotic Approach to Quantify Asymmetry of Bilateral Ankle Mechanics During Standing Balance Post-stroke	6/16/2020	\$3,984	NIH-R21 Subcontract from Arizona State University	4/1/2022
*Lacroix, A.	CHS-GD	Speech Language Pathology	Impact of Attention on Sentence Comprehension in Aphasia	4/15/2020	\$10,000	American Speech-Language-Hearing Foundation	12/1/2020

Total of CHS-GD Extramurally-submitted Proposals: \$70,695

COLLEGE OF PHARMACY-GLENDALE (CPG): EXTRAMURALLY-SUBMITTED PROPOSALS

Investigator/s	College	Department	Proposal Title	Submitted	Total	Agency	Start Date
Elbayoumi, T.	CPG	Pharmaceutical Sciences	Investigating Anti-CD47 Antibody-targeted Combination of Immuno-modulatory Mifamurtide Liposomes: Resurrection of Hope for Advanced Osteosarcoma Patients	1/8/2020	\$50,000	Sarcoma Foundation of America	7/1/2020
*Elbayoumi, T.	CPG	Pharmaceutical Sciences	Investigating Enhanced Anti-CD47 Antibody-targeted Combination of Immuno-modulatory Mifamurtide Liposomes: Retrieval of Hope for Childhood Osteosarcoma Patients	4/30/2020	\$125,886	Elsa U. Pardee Foundation	7/1/2020
Huang, V. (Nguyen, R., CPG '21)	CPG	Pharmacy Practice	<i>In vitro</i> Activity of Ceftaroline Alone and in Combination with Daptomycin at High and Low Doses Against Methicillin-resistant <i>Staphylococcus aureus</i> in an <i>in vitro</i> Pharmacodynamic Model	2/24/2020	\$5,000	American Foundation for Pharmaceutical Education	6/1/2020
Olsen, M.	CPG	Pharmaceutical Sciences	Developing a Safe and Effective Anticoronaviral Therapy for Client-owned Cats with FIP	12/9/2019	\$7,000	Winn Feline Foundation Subcontract from the University of California-Davis	4/1/2020
*Olsen, M.	CPG	Pharmaceutical Sciences	Design, Synthesize and Validate New THB-base Compounds for Smoke Cessation	6/5/2020	\$90,000	NIH-R01 Subcontract from Dignity Health	4/1/2021
Veltri, C.	CPG	Pharmaceutical Sciences	Pharmacological and Phytochemical Investigations of Kratom (<i>Mitragyna speciosa</i> Korth.) in the Nematode <i>Caenorhabditis elegans</i>	9/29/2019	\$9,978	Center for Plant Science and Health	12/1/2019
Weissig, V.	CPG	Pharmaceutical Sciences	Discovering Novel Mechanisms for Aging-related Dementia: Probing Medin and Abeta Vasculopathy	3/6/2020	\$24,000	Phoenix VA Health Care System	4/1/2021
*Weissig, V.	CPG	Pharmaceutical Sciences	Development Supplement Request: Testing and Development of Monosialoganglioside-containing Nanoliposomes to Mitigate Damage from Cerebrovascular Disease	4/24/2020	\$8,000	Phoenix VA Health Care System	6/1/2020

Total of CPG Extramurally-submitted Proposals: \$319,864

COLLEGE OF VETERINARY MEDICINE (CVM): EXTRAMURALLY-SUBMITTED PROPOSALS

Investigator/s	College	Department	Proposal Title	Submitted	Total	Agency	Start Date
*Bradley-Siemens, N. & Okwumabua, O.	CVM	Veterinary Medicine	COVID-19 Testing in Dogs and Cats from Communities of Need	6/3/2020	\$22,699	PetSmart Charities	7/1/2020
Lopez, B.	CVM	Veterinary Medicine	Bovine Neonatal Dendritic Cell Function During <i>Cryptosporidium parvum</i> Infection	7/11/2019	\$488,520	USDA AFRI NIFA	1/1/2020
*Lopez, B.	CVM	Veterinary Medicine	Host-Pathogen Interaction During Cryptosporidiosis - A Model for Disease Pathogenesis and Discovery of Effective Therapeutics	4/30/2019	\$413,410	USDA AFRI NIFA	1/1/2021
Murthy, A.	CVM	Veterinary Medicine	Boehringer Ingelheim Veterinary Scholars Program	10/31/2019	\$20,000	Boehringer Ingelheim	6/1/2020
Murthy, A.	CVM	Veterinary Medicine	Synthesis of Clp Protease Proteolytic Subunit (ClpP) Activators to Treat Chlamydial Infections	11/5/2019	\$177,596	NIH-R01 Subcontract from the University of Nebraska Medical Center	10/1/2023
Murthy, A.	CVM	Veterinary Medicine	PetSmart Charities Veterinary Research Fellowship	12/11/2019	\$8,500	PetSmart Charities, Inc.	1/1/2020
Murthy, A.	CVM	Veterinary Medicine	Synthesis of Clp Protease Proteolytic Subunit (ClpP) Activators to Treat Chlamydial Infections	3/5/2020	\$210,445	NIH-R01 Subcontract from the University of Nebraska Medical Center	10/1/2020

CVM: EXTRAMURALLY-SUBMITTED PROPOSALS (Continued)

Investigator/s	College	Department	Proposal Title	Submitted	Total	Agency	Start Date
Struthers, J.	CVM	Veterinary Medicine	Optimizing a Patient-specific Larynx Implant for Functional Restoration after Cancer Surgery	2/5/2020	\$68,364	NIH-R01 Subcontract from the Mayo Clinic	10/1/2020
Thangamani, S.	CVM	Veterinary Medicine	Investigating the Antifungal Mechanism of Action of Novel Small Molecule Inhibitors	2/14/2020	\$413,400	NIH-R21 with Subcontracts to Purdue University and Laval University	9/1/2020
*Thangamani, S.	CVM	Veterinary Medicine	Bile Acid Target Genes and Pathways in <i>Candida albicans</i>	6/12/2020	\$415,100	NIH-R21 with Subcontracts to Purdue University and the University of Montréal	4/1/2021
*Thangamani, S.	CVM	Veterinary Medicine	Role of Bile Acids in the Gastrointestinal Colonization and Pathogenesis of <i>Candida albicans</i>	6/25/2020	\$442,203	NIH-R15 with Subcontracts to Purdue University and the University of Montréal	4/1/2021

Total of CVM Extramurally-submitted Proposals: \$2,680,237

INSTITUTE FOR HEALTHCARE INNOVATION (IHI): EXTRAMURALLY-SUBMITTED PROPOSALS

Investigator/s	College	Department	Proposal Title	Submitted	Total	Agency	Start Date
Woods, C., Thomas, K. & Gonzalez-Cintron, O.	IHI, CVM	Animal Health Institute	PIVOTAL: Multi-center, Masked, Randomized Clinical Field Study to Evaluate the Effectiveness and Safety of Resiniferatoxin (RTX) Compared to a Sham Injection for the Control of Pain Associated with Osteoarthritis of the Elbow in Dogs	8/5/2019	\$43,850	Pharmaceutical Sponsor	8/25/2019
Woods, C., VanDenBerg, C. & Acierno, M.	IHI, CVM	Animal Health Institute	A Single-center Pilot Study to Evaluation the Effectiveness and Field Safety of SB-001 for the Treatment of Anemia Associated with Chronic Kidney Disease in Cats	10/21/2019	\$19,250	Pharmaceutical Sponsor	1/1/2020
Woods, C., VanDenBerg, C., Venable, R., Thomas, K. & Keenan, L.	IHI, CVM, CPG	Animal Health Institute	Clinical Evaluation of Dexamethasone Formulation (AVM0703) in Dogs with Lymphoma	10/21/2019	\$5,000	Pharmaceutical Sponsor	1/1/2020

Total of IHI Extramurally-submitted Proposals: \$68,100

MWU SUBMITTED 111 EXTRAMURAL PROPOSALS FROM ALL COLLEGES THROUGH Q4 OF FISCAL YEAR 2020 TOTALING \$25,245,106

*The asterisk denotes new material. All material in this report is cumulative from July 1, 2019 through June 30, 2020, with the exception of active extramurally-funded research.

**MULTIDISCIPLINARY: ALL EXTRAMURALLY-FUNDED
ACTIVE RESEARCH AWARDS DURING THE REPORTING PERIOD**

Investigator/s	College	Department	Proposal Title	Total	Agency	Start Date	End Date
Eckman, D. (CGS), Jones, C. (CGS), Jones, T.B. (CGS), Vallejo-Elias, J. (CGS), Virden, T. (CHS-GD) & Powell, J. (CHS-GD)	CGS & CHS-GD	Multidisciplinary	Cerebrovascular Dysfunction and Cognitive Decline in Aging APOE2, APOE3 and APOE4 Targeted-Replacement Mice	\$225,000	Arizona Department of Health Services through the Arizona Biomedical Research Commission	4/1/2018	3/31/2021
Mitchell, J., Fitzgerald, N., Chen, G. & Wooden, E.	CDMA, AZCOM	Multidisciplinary	An Inch-loss Study Using the NovoPod Photomodulation Bed	\$150,000 (Value of)	Thor Photomedicine	6/1/2018	Open

Total of Multidisciplinary Active Extramurally-funded Research Awards: \$375,000

ARIZONA COLLEGE OF OSTEOPATHIC MEDICINE (AZCOM):

ALL ACTIVE EXTRAMURALLY-FUNDED RESEARCH AWARDS DURING THE REPORTING PERIOD

Investigator/s	College	Department	Proposal Title	Total	Agency	Start Date	End Date
Finch, C. & Nydam, R.	AZCOM	Clinical Education & Administration	Multi-Institutional Program for Ultrasound Based Training for Osteopathic Practitioners in Arizona	\$217,456	HonorHealth Foundation Phoenix General Hospital Osteopathic Endowment Fund	1/1/2018	6/30/2020

Total of AZCOM Active Extramurally-funded Research Awards: \$217,456

**AZCOPT: ALL ACTIVE EXTRAMURALLY-FUNDED
RESEARCH AWARDS DURING THE REPORTING PERIOD**

Investigator/s	College	Department	Proposal Title	Total	Agency	Start Date	End Date
Esposito, C.	AZCOPT	Optometry	Measurements of Microsaccades and Fixational Eye Movements in Acquired Brain Injury Patients Pre- and Post-Vision Therapy Utilizing the Tracking Scanner Laser	\$3,500	College of Optometrists in Vision Development	7/2/2019	6/30/2020
Feis, A.	AZCOPT	Optometry	Binocular Dig Rush Game Treatment for Amblyopia (ATS20)	\$11,938	National Eye Institute Cooperative Agreement with JAEB Center for Health Research, Inc.	4/10/2017	12/31/2019
Feis, A.	AZCOPT	Optometry	A Randomized Clinical Trial of Overminus Spectacle Therapy for Intermittent Exotropia (IXT5)	\$14,625	National Eye Institute Cooperative Agreement with JAEB Center for Health Research, Inc.	6/12/2017	12/31/2019
Feis, A.	AZCOPT	Optometry	A Pilot Randomized Clinical Trial of Base - In Prism Spectacles for Intermittent Exotropia (IXT6)	\$7,313	National Eye Institute Cooperative Agreement with JAEB Center for Health Research, Inc.	10/1/2019	12/31/2020
Vasudevan, B.	AZCOPT	Optometry	A Multi-center, Double-masked, Randomized, Placebo-controlled, Phase 3 Study of the Safety and Efficacy of Atropine 0.1% and 0.01% Ophthalmic Solutions Administered with a Microdose Dispenser for the Reduction of Pediatric Myopia Progression (The CHAPERONE Study)	\$313,000	Eyenovia	9/1/2019	8/31/2023
Vasudevan, B.	AZCOPT	Optometry	Effect of LipiFlow on Ocular Surface Disease Management with Cataract Surgery	\$273,000	Johnson & Johnson Surgical Services	2/1/2020	1/31/2021
Yeh, F., Kenworthy, P., Addy, L., Feis, A., Liao, G. & Vasudevan, B.	AZCOPT	Optometry	Clinical Evaluation of a Daily Wear Frequent Replacement Silicone Hydrogel Lens Trial	\$53,000	Alcon, Inc.	3/1/2020	8/31/2020

Total of AZCOPT Active Extramurally-funded Research Awards: \$676,376

**CHICAGO COLLEGE OF OPTOMETRY: ALL ACTIVE EXTRAMURALLY-FUNDED
RESEARCH AWARDS DURING THE REPORTING PERIOD**

Investigator/s	College	Department	Proposal Title	Total	Agency	Start Date	End Date
Rice, S.	CCO	Optometry	Binocular Dig Rush Game Treatment for Amblyopia (ATS20)	\$23,125	National Eye Institute Cooperative Agreement with JAEB Center for Health Research, Inc.	9/1/2018	12/31/2019
Rice, S.	CCO	Optometry	A Multi-center, Double-masked, Randomized, Placebo-controlled, Phase 3 Study of the Safety and Efficacy of Atropine 0.1% and 0.01% Ophthalmic Solutions Administered with a Microdose Dispenser for the Reduction of Pediatric Myopia Progression (The CHAPERONE Study)	\$313,000	Eyenovia	2/1/2020	1/31/2024

Total of CCO Active Extramurally-funded Research Awards: \$336,125

CCP: ALL ACTIVE EXTRAMURALLY-FUNDED RESEARCH AWARDS DURING THE REPORTING PERIOD

Investigator/s	College	Department	Proposal Title	Total	Agency	Start Date	End Date
Gulati, A.	CCP	Administration	Mentor and Train PCCM and NPM Fellows for Scholarly Activity	\$170,000	Advocate Health and Hospitals Corporation	1/1/2018	12/31/2019
Merker, A.	CCP	Pharmacy Practice	Midwest Integration of National HIV Curriculum	\$10,000	HRSA, HIV/AIDS Bureau Subcontract from the University of Illinois at Chicago	3/1/2019	8/31/2019
Merker, A.	CCP	Pharmacy Practice	Midwest Integration of the National HIV Curriculum - Year 2	\$10,000	HRSA, HIV/AIDS Bureau, Subcontract from the University of Illinois Chicago	9/1/2019	8/30/2020
Rhodes, N.J.	CCP	Pharmacy Practice	Effect of Omadacycline Alone and in Combination with Meropenem Against Clinical <i>Acinetobacter baumannii</i> Isolates	\$2,829	Paratek Pharmaceuticals Subcontract from Albany College of Pharmacy and Health Sciences	1/8/2020	1/7/2021
Rhodes, N.J.	CCP	Pharmacy Practice	Development of a Clinical Decision Algorithm for Adults Hospitalized with Pneumonia	\$9,999	American Association of Colleges of Pharmacy	3/1/2020	2/28/2021
Scheetz, M.	CCP	Pharmacy Practice	Defining the Link Between Cefepime Exposure and Effect in Canine Pneumonia: A Two-Way Bridge Serving Dogs and Humans	\$12,500	CARE Foundation	1/1/2016	1/1/2020
Scheetz, M.	CCP	Pharmacy Practice	A Retrospective Study to Understand the Risk Factors/Drivers of "Inappropriate" Antimicrobial Use and the Performance Evaluation of a Clinical Decision Support Tool that Facilitates Prediction of Outbreaks of Inappropriate Antibiotic Use	\$159,835	Merck Sharp & Dohme Corp. with a Subcontract to the University of Michigan and Wayne State University	9/13/2017	6/30/2020
Scheetz, M.	CCP	Pharmacy Practice	A Pilot Study to Define Colistin Population PK and Interrogate Renal TD	\$32,400	Cystic Fibrosis Foundation Subcontract from Northwestern University	11/1/2017	10/31/2019
Scheetz, M.	CCP	Pharmacy Practice	Nanoparticle-Polymyxin B Conjugates for Treating Infections in CF Patients	\$70,403	Cystic Fibrosis Foundation Subcontract from Northwestern University	11/1/2017	10/1/2020
Scheetz, M.	CCP	Pharmacy Practice	Defining the Blood Brain Barrier Transit of Cefepime/AAI101 in a Sprague Dawley Rat Model	\$15,075	Allegra Therapeutics	8/31/2018	8/20/2020
Scheetz, M.	CCP	Pharmacy Practice	AKI001 Vancomycin (MEEK) and AKI002 Liposomal Vancomycin	\$124,718	Nevakar, Inc.	11/9/2018	TBD

CCP: ALL ACTIVE EXTRAMURALLY-FUNDED AWARDS (Continued)

Investigator/s	College	Department	Proposal Title	Total	Agency	Start Date	End Date
Scheetz, M.	CCP	Pharmacy Practice	Evaluation of Lipid Nanoparticles of Potent Antibiotics for Reversal of Drug Resistance of Superbug Infections	\$9,000	Wayne State University	5/10/2019	12/31/2019
Scheetz, M.	CCP	Pharmacy Practice	Quantifying Renal Injury Among the Most Commonly Used Antibiotic Combinations	\$412,500	NIH-R21	1/16/2020	12/31/2021
Scheetz, M.	CCP	Pharmacy Practice	Patient-oriented Research on <i>Pseudomonas aeruginosa</i>	\$39,760	NIH-K24 Subcontract from Northwestern University	2/22/2020	1/31/2025
Tran, T. & Fjortoft, N.	CCP	Pharmacy Practice & Administration	Preparing Pharmacy Students for their Role in the Opioid Crisis: Advancing the Pharmacy Curriculum	\$20,000	National Association of Chain Drug Stores	10/1/2016	5/31/2019
Wang, S.	CCP	Pharmacy Practice	Assessment of Patients' Perceptions on Antimicrobial Stewardship and Attitudes Towards Board Certified Clinical Pharmacists Within the Movement to Reduce Antimicrobial Resistance	\$5,000	Board of Pharmacy Specialties	11/1/2019	10/30/2020

Total of CCP Active Extramurally-funded Research Awards: \$1,104,019

CDMA: ALL ACTIVE EXTRAMURALLY-FUNDED RESEARCH AWARDS DURING THE REPORTING PERIOD

Investigator/s	College	Department	Proposal Title	Total	Agency	Start Date	End Date
Atkinson, J.	CDMA	Dental Medicine	Emotional Quotient Testing for Curriculum Assessment	\$11,500 (Value of)	Six Seconds Emotional Intelligence Network	10/1/2018	9/30/2020
Gibbons, J. & Mitchell, J.	CDMA	Dental Institute	Dentures: A Patient Preference Study	\$80,000 (Value of)	White Square Company	12/6/2016	Open
Fountain, A., Florento, G. & Mitchell, J.	CDMA	Dental Institute	A Bleach Rinse a Day Keeps the Gum Disease Away?	\$29,800 (Value of)	Century Pharmaceuticals, Inc.	1/26/2017	1/25/2020
Mitchell, J.	CDMA	Dental Medicine	The Effects of a One-step Oxidative Etching Process on Cell Differentiation, Proliferation and Attachment Compared to Conventional Micro- and Nano-scale Topography of Titanium Implants	\$5,000 (Value of)	Institut Straumann AG	12/14/2018	12/13/2019
Mitchell, J., Haering H., Carroll, A., Beals, D., & Carpenter, R.	CDMA	College of Dental Medicine & Dental Institute	Bicon SHORT® Implants: A Preclinical and Clinical Research Study	\$949,363 (Value of)	Bicon Dental Implants	5/6/2016	5/5/2022
Mitchell, J., Schuster, G., Brannock, M. Cohn, M., Carroll, A. & Brachvogel, W.	CDMA	Dental Institute	Anesthesia-free Dentistry?	\$840,000 (Value of)	Convergent Dental	9/30/2017	Open
Mitchell, J., Velazquez D., Mathews, J., Ferguson, G. & Sheram, D.	CDMA	Dental Institute	Tooth Whitening with Sodium Bicarbonate versus Carbamide Peroxide	\$6,000 (Value of)	Oralgen, LTD & Ivoclar Vivadent	12/1/2017	11/30/2019
Mitchell, J. (Magee, A., CDMA '23)	CDMA	Dental Medicine	Mechanical Analysis of Mandibular Implant Supported Prostheses Constructed with Fiber Reinforced Resin	\$2,100	American Association of Dental Research	4/1/2020	3/31/2021
Smith, B. & Beals, D.	CDMA	Dental Medicine	A Partnership Protocol for Treatment of Oral Mucositis Using LLLT	\$25,000	Dental Trade Alliance Foundation	10/1/2018	12/31/2019

Total of CDMA Active Extramurally-funded Research Awards: \$1,948,763

CGS: ALL ACTIVE EXTRAMURALLY-FUNDED RESEARCH AWARDS DURING THE REPORTING PERIOD

Investigator/s	College	Department	Proposal Title	Total	Agency	Start Date	End Date
Al-Nakkash, L.	CGS	Physiology	High Fat Induced Diabetes is Abolished by Combined Genistein and Exercise Treatment: Identifying the Mechanisms	\$10,000	Diabetes Action Research and Education Foundation	1/1/2019	12/31/2019
Al-Nakkash, L., Broderick, T., & Shim, M.	CGS	Physiology & Biochemistry & Molecular Genetics	Diabetic Obesity Results in Cognitive Impairment: Evaluation of the Relationship Between Inflammation and Senescence in the Gut-Brain Axis, and the Response to Exercise and Genistein Treatment	\$24,896 (includes a \$12,448 match from MWU)	Arizona Department of Health Services through the Arizona Alzheimer's Research Center, Inc.	7/1/2019	6/30/2020
Bae, N. & Swanson, M.	CGS	Biochemistry & Molecular Genetics	Studies on the Effects of Telomere Protection Protein RAP1 and the Epsilon Isoform of Gial Fibrillary Acidic Protein on Amyloid Peptides Produced by Gamma-secretase	\$6,219 (includes a \$3,109 match from MWU)	Arizona Department of Health Services through the Arizona Alzheimer's Research Center, Inc.	7/1/2019	6/30/2020
Edwards, J.	CGS	Pharmacology	Mechanisms of Cadmium-induced Dysglycemia	\$446,697	NIH-R15 (AREA)	8/15/2017	7/31/2020
Ellermeier, J.	CGS	Microbiology & Immunology	Genetic Regulation of the Twin Arginine Translocation System in <i>Salmonella enterica</i> serovar Typhimurium	\$150,000	NIH-R03	6/17/2019	12/31/2020
Esfandiarei, M.	CGS	Biomedical Sciences	Children and Adolescents with Marfan Syndrome - 10,000 Healthy Steps and Beyond	\$30,484	Marfan Foundation Subcontract from Stanford University	1/1/2017	12/31/2019
Esfandiarei, M.	CGS	Biomedical Sciences	Targeting Endothelial Dysfunction in a Genetic Mouse Model of Aortic Aneurysm: Implications for Prevention and Therapy	\$441,048	NIH-R15 (AREA)	1/15/2019	12/31/2021
Haley, N.	CGS	Microbiology & Immunology	Managing CWD in Farmed Cervids through Antemortem Testing, Targeted Culling, and Development of Genetic Resistance Breeding Programs	\$48,593	North American Deer Farmers Association	3/1/2016	3/1/2021
Hall, M.	CGS	Anatomy	Functional and Developmental Diversity in Mammal Body Wall Composition	\$1,000	American Association of Anatomists	7/8/2019	6/30/2020
Henderson, K.	CGS	Physiology	Analytical Assessment of the Cranial Rhythmic Impulse	\$8,000	American Academy of Osteopathy	6/15/2017	6/15/2020
Jadavji, N.	CGS	Biomedical Sciences	Identification of Developmental Factors Involved in Ischemic Stroke Outcomes in Adulthood and Old Age	\$152,735	American Heart Association	1/1/2020	12/31/2021
Jentarra, G. & Jones, T.B.	CGS	Biochemistry & Molecular Genetics, Anatomy	Follow the Evidence: The Role of Microbes in the Development of Alzheimer's Disease	\$40,184 (includes a \$20,092 match from MWU)	Arizona Department of Health Services through the Arizona Alzheimer's Research Center, Inc.	7/1/2019	12/31/2020
Kim, C.	CGS	Biochemistry & Molecular Genetics	The Role of SAM Polymerization in Polycomb-dependent Chromatin Structures	\$1,019,683	NIH-R01 with a Subcontract to the Institut de Recherchers Cliniques de Montréal	6/1/2016	5/31/2021
Muldoon, K.	CGS	Anatomy	Collaborative Research: Human and Non-human Influences on Species Biodiversity in an Island Ecosystem	\$44,144	National Science Foundation	3/1/2018	2/21/2021
Olson, C.	CGS	Physiology	Vocalizing in a Complex and Crowded Forest: An Investigation of a Unique Hummingbird Solution	\$30,000	National Geographic Society	10/4/2018	10/20/2020
Riede, T.	CGS	Physiology	Collaborative Research: Evolution of Long-distance Communication in Vocal Rodents	\$193,774	National Science Foundation	8/1/2018	7/31/2021
Riede, T.	CGS	Physiology	The Role of Vocal Ligament in Fundamental Frequency and Adduction Control	\$201,055	NIH-R01 Subcontract from the University of Utah	1/1/2020	12/31/2024

CGS: ALL ACTIVE EXTRAMURALLY-FUNDED AWARDS (Continued)

Investigator/s	College	Department	Proposal Title	Total	Agency	Start Date	End Date
Shim, M.	CGS	Biochemistry & Molecular Genetics	Cyclooxygenase-2 Signaling in Cell Senescence and its Role in Chemotherapy-induced Long-term Adverse Sequelae	\$450,000	NIH-R15 (REAP)	12/1/2019	11/30/2022
Shim, M., Broderick, T. & Al-Nakkash, L.	CGS	Biochemistry & Molecular Genetics, Physiology	Exercise-mediated Mitigation of Cellular Senescence as a Peripheral Control Mechanism for Alzheimer's Disease Risk	\$28,702 (includes a \$14,351 match from MWU)	Arizona Department of Health Services through the Arizona Alzheimer's Research Center, Inc.	7/1/2019	6/30/2020
*Townsend, K.E.B.	CGS	Anatomy	Collaborative Research: After the Bridgerian Crash - An Integrated Analysis of Mammalian Paleocommunities and Paleoecologies During the Middle Eocene	\$239,596	National Science Foundation	5/15/2020	4/30/2023

Total of CGS Active Extramurally-funded Research Awards: \$3,566,810

CHS-DG: ALL ACTIVE EXTRAMURALLY-FUNDED RESEARCH AWARDS DURING THE REPORTING PERIOD

Investigator/s	College	Department	Proposal Title	Total	Agency	Start Date	End Date
Evans, C.	CHS-DG	Physical Therapy	Patterns and Sources for Contamination and Effectiveness of Cleaning Strategies in an Outpatient Physical Therapy Clinic	\$990	Illinois Physical Therapy Association Foundation	1/1/2020	12/31/2021
Mahaffey, L.	CHS-DG	Occupational Therapy	Tiered Occupational Therapy (TOT): Preparing Scholars to Work in School Mental Health	\$1,157,279	U.S. Department of Education	12/1/2015	11/30/2020
Saletta, M.	CHS-DG	Speech Language Pathology	Advancing Academic and Research Careers	\$4,280	American Speech-Language-Hearing Association	8/18/2019	10/31/2020

Total of CHS-DG Active Extramurally-funded Research Awards: \$1,162,549

CPG: ALL ACTIVE EXTRAMURALLY-FUNDED RESEARCH AWARDS DURING THE REPORTING PERIOD

Investigator/s	College	Department	Proposal Title	Total	Agency	Start Date	End Date
Huang, V.	CPG	Pharmacy Practice	A Multicenter Evaluation of Vancomycin-associated Nephrotoxicity in Hospitalized Patients with Acute Bacterial Skin and Skin Structure Infections	\$4,500	Subcontract from Motif BioSciences, Inc.	6/1/2018	Open
*Olsen, M.	CPG	Pharmaceutical Sciences	Developing a Safe and Effective Anticoronaviral Therapy for Client-owned Cats with FIP	\$7,000	Winn Feline Foundation Subcontract from the University of California-Davis	4/1/2020	12/31/2021
Veltri, C.	CPG	Pharmaceutical Sciences	Pharmacological and Phytochemical Investigations of Kratom (<i>Mitragyna speciosa</i> Korth.) in the Nematode <i>Caenorhabditis elegans</i>	\$9,978	Center for Plant Science and Health	12/1/2019	11/30/2020
Weissig, V.	CPG	Pharmaceutical Sciences	Cationic Bolaamphiphiles (CAB) and Phosphorothioate Gapmers as Antisense Therapy for <i>C. difficile</i>	\$18,567	NIH-R21 Subcontract from the University of Arizona	6/5/2017	5/31/2020
*Weissig, V.	CPG	Pharmaceutical Sciences	Development Supplement Request: Testing and Development of Monosialoganglioside-containing Nanoliposomes to Mitigate Damage	\$8,000	Phoenix VA Health Care System	6/1/2020	5/31/2021
Yao, M. & Elbayoumi, T.	CPG	Pharmaceutical Sciences	Novel Therapeutic Strategy for Pulmonary Arterial Hypertension: Abrogation of Excess Thrombospondin 1 by Pharmaceutical Formula of CD47 Peptide	\$96,670	Cardiovascular Medical Research and Education Fund	11/1/2017	10/31/2019

CPG: ALL ACTIVE EXTRAMURALLY-FUNDED AWARDS (Continued)

Investigator/s	College	Department	Proposal Title	Total	Agency	Start Date	End Date
Yao, M. & Elbayoumi, T.	CPG	Pharmaceutical Sciences	Atrial Fibrillation Strategically Focused Research Network: Atrial Substrate in Atrial Fibrillation and AF-associated Brain Disease	\$126,979	American Heart Association Subcontract from Northwestern University	7/1/2018	6/30/2022

Total of CPG Active Extramurally-funded Research Awards: \$271,694

CVM: ALL ACTIVE EXTRAMURALLY-FUNDED RESEARCH AWARDS DURING THE REPORTING PERIOD

Investigator/s	College	Department	Proposal Title	Total	Agency	Start Date	End Date
Jaffey, J.	CVM	Veterinary Medicine	Immune Function and Vitamin D in Shelter Dogs	\$5,000	Maddie's Fund IDEA Lab	4/1/2019	7/31/2019
Jaffey, J. (Allison, L., CVM '21)	CVM	Veterinary Medicine	The Role of Vitamin D as a Biomarker for Immune Function in Shelter Dogs	\$5,500	Maddie's Fund Summer Scholar Program	6/1/2019	8/1/2019
Lee, J.K.	CVM	Veterinary Medicine	Photothermal Nanocomposites for Tissue Repair	\$76,876	NIH-R01 Subcontract from Arizona State University	9/9/2015	5/31/2021
Murthy, A.	CVM	Veterinary Medicine	Mechanism(s) of CD8 ⁺ T Cell-mediated Chlamydia-induced Reproductive Pathology	\$450,000	NIH-R15 (REAP)	7/1/2019	6/30/2022
Murthy, A.	CVM	Veterinary Medicine	Boehringer Ingelheim Veterinary Scholarship Program	\$30,000 (includes a \$15,000 match from MWU)	Boehringer Ingelheim	5/1/2019	10/31/2019
Murthy, A.	CVM	Veterinary Medicine	MWU-PSC Student Summer Fellowship	\$10,000	PetSmart Charities, Inc.	6/1/2018	9/1/2019
Murthy, A.	CVM	Veterinary Medicine	USDA Animal Health and Disease Research Grant	\$25,604	USDA National Institute of Food and Agriculture	10/1/2018	9/30/2020
Murthy, A.	CVM	Veterinary Medicine	USDA Animal Health and Disease Research Grant	\$22,902	USDA National Institute of Food and Agriculture	10/1/2019	9/30/2020
Murthy, A.	CVM	Veterinary Medicine	PetSmart Charities Veterinary Research Fellowship	\$8,500	PetSmart	1/1/2020	5/31/2021
Murthy, A.	CVM	Veterinary Medicine	Boehringer Ingelheim Veterinary Scholars Program	\$25,000 (includes a \$10,000 match from MWU)	Boehringer Ingelheim	4/15/2020	9/30/2020

Total of CVM Active Extramurally-funded Research Awards: \$659,382

IHI: ALL ACTIVE EXTRAMURALLY-FUNDED RESEARCH AWARDS DURING THE REPORTING PERIOD

Investigator/s	College	Department	Proposal Title	Total	Agency	Start Date	End Date
Impens, A.	IHI	Institute for Healthcare Innovation	Electronic Course: Making Medicines: The Process of Drug Development	\$4,200 (In-Kind)	Lilly USA, LLC	9/1/2019	8/31/2021
Woods, C., Eberhardt, J., Thomas, K., Robbins, E., Keenan, L., Huang, V. & Soby, S.	IHI, CHS, CVM, CPG, CGS	Animal Health Institute	Comparison of Chelating Agent Along or in Combination with Standard of Care Otic Formulation for Treatment of Canine Chronic Otitis Externa	\$45,630	Pharmaceutical Sponsor	9/6/2017	6/30/2020
Woods, C., Gulati, A., & Evans, J.	IHI, CVM	Animal Health Institute	Therapeutic Effect of Endothelin Agonist in Dogs with Degenerative Myelopathy	10,000	Pharmaceutical Sponsor	1/3/2018	6/30/2020

IHI: ALL ACTIVE EXTRAMURALLY-FUNDED AWARDS (Continued)

Investigator/s	College	Department	Proposal Title	Total	Agency	Start Date	End Date
Woods, C., Thomas, K. & Gonzalez-Cintron, O.	IHI, CVM	Animal Health Institute	PILOT: Multi-center, Masked, Randomized Clinical Field Study to Evaluate the Effectiveness and Safety of Resiniferatoxin (RTX) Compared to a Sham Injection for the Control of Pain Associated with Osteoarthritis of the Elbow in Dogs	~\$62,000	Pharmaceutical Sponsor	8/5/2019	Open
Woods, C. & VanDenBerg, C.	IHI	Animal Health Institute	Evaluation of an Immune Support Formula in Dogs with Valley Fever	~\$18,250	Pharmaceutical Sponsor	10/9/2019	Open
*Woods, C. & VanDenBerg, C.	IHI	Abrazo Arizona Heart Hospital	Medical Device Study in Patients with Cardiovascular Disease	~\$100,000	Medical Device Sponsor	11/1/2018	Open
Woods, C., VanDenBerg, C., Thomas, K., Keenan, L., Nickell, J., Jones, T., Gonzalez-Cintron, O., Shaver, S. & Veltri, C.	IHI, CVM, CPG	Animal Health Institute	Evaluation of Post-operative Pain Control Outcomes Using Subcutaneous Continuous Rate Infusion of an Analgesic in Dogs Undergoing Soft Tissue Surgery	\$5,000	Medical Device Sponsor	8/9/2018	6/30/2020

Total of IHI Active Extramurally-funded Research Awards: \$245,080

Proposals included are defined as active grants based on end dates reported to the ORSP on the Principal Investigator's Proposal Approval Form plus any granted no-cost extension or contract addendum.

Total MWU Active Extramurally-funded Research Awards: \$10,563,254

PEER-REVIEWED PUBLICATIONS - MULTI-COLLEGE COLLABORATIONS

***Al-Nakkash L** (CGS) & **Kubinski A** (AZCOM). (2020) Soy isoflavones and gastrointestinal health. *Current Nutrition Reports* May 15: epub ahead of print.

Arnouk H (CGS) & **Moqet S** (CCOM). (2019) Are we there yet? The long and winding road to cancer immunotherapy. In H Arnouk (Ed.) *Cancer Immunotherapy and Biological Cancer Treatments*. (pp.1-8). London, United Kingdom: IntechOpen.

Borchert JS (CCP), **Wang B** (CCOM), **Ramzanali M** (CCP), **Stein AB** (ORSP), **Malaiyandi LM** (CGS) & **Dineley KE** (CGS). (2019) Adverse events due to insomnia drugs reported in a regulatory database and online patient reviews: Comparative study. *Journal of Medical Internet Research* 21(11):e13371.

Burns A (CPG), **Goodlet KJ** (CPG), **Chapman A** (CGS) & **Roberts EP** (CDMA). (2020) A case report of self-medication with over-the-counter fish antibiotic: Implications for pharmacists. *Journal of the American Pharmacists Association* January 30: epub ahead of print.

Chu Fountain A (CDMA), **Roberts EP** (CDMA), **Schuster G** (CDMA), **Breitmeyer AM** (CHS-GD) & **Buros Stein A** (ORSP). (2019) Dental faculty, student, and alumni perceptions of happiness and life satisfaction in dental school: Foundations for resilience and well-being. *Journal of Dental Education* November 25: epub ahead of print.

Eaton KJ (AZCOM) & **Smith HF** (CGS). (2019). Clinical implications of aberrant neurovascular structures coursing through the submandibular gland. *PeerJ* 7e:7823.

Grundmann O, Brown PN, Boyer EW, Swogger MT, Walsh Z, **Prozialeck W** (CGS), Kruegel AC, **Veltri CA** (CPG) & Dudley S. (2019) Critique of “Kratom Use and Toxicities in the United States”. *Pharmacotherapy* 39(11):1119-1120.

Gutierrez D (CVM), **Weinstock A** (AZCOM), Antharam VC, Gu H, Jasbi P, Shi X, Dirks B, Krajmalnik-Brown R, Maldonado J, **Guinan J** (CVM) & **Thangamani S** (CVM). (2019) Antibiotic-induced gut metabolome and microbiome alterations increase the susceptibility to *Candida albicans* colonization in the gastrointestinal tract. *FEMS Microbiology Ecology* November 26: epub ahead of print.

*Hagemann TM, Reed BN, Bradley BA, Clements JN, Cohen LJ, Coon SA, Derington CG, DiScala SL, **El-Ibiary S** (CPG), Lee KC, May A, Oh S, **Phillips JA** (CCP) & Rogers KM. (2020) Burnout among clinical pharmacists: Causes, interventions, and a call to action. *Journal of the American College of Clinical Pharmacy* 3(4):832-842.

Haley NJ (CGS), Merrett K, **Buros Stein A** (ORSP), Simpson D, Carlson A, Mitchell G, Staskevicius A, Nichols T, Lehmkuhl AD & Thomsen BV. (2019) Estimating relative CWD susceptibility and disease progression in farmed white-tailed deer with rare PRNP alleles. *Public Library of Science ONE* 14(12):e0224342.

Hellings A (AZCOM), **Buchan L** (AZCOM), **Castro M** (CGS), **St Aubin CR** (CGS), **Fisher AL** (CGS), **Al-Nakkash L** (CGS), **Broderick T** (CGS) & Plochocki JH. (2019) Bone strength is improved with genistein treatment in mice with diet-induced obesity. *Current Developments in Nutrition* October 23: epub ahead of print.

***Johnson GM** (CDMA), **Stein AB** (ORSP), **Fitzgerald NM** (CDMA), **Copeland CC** (CDMA), **Velazquez DM** (CDMA) & **Trowbridge T** (CDMA). (2020) Predictors of preclinical hand skill performance in dental school. *Journal of Dental Education* June 27: epub ahead of print.

Joshi MD (CCP), **Pais GM** (CCP), **Chang J** (CCP), **Hlukhenka K** (CCP), **Avedissian SN** (CCP), **Gulati A** (CCP), **Prozialeck WC** (CGS), **Lamar PC** (CGS), **Zhang Z** (CCP), **Scheetz MH** (CCP) & **Griffin B** (CCP). (2019) Evaluation of fetal and maternal vancomycin-induced kidney injury during pregnancy in a rat model. *Antimicrobial Agents and Chemotherapy* September 23: epub ahead of print.

Jurgens-Toepke P (CDMI), **Obucina L** (CDMI) & **Gettig J** (CCP). (2019) A comparison study of dental student's attitudes on the effectiveness of two different mock employment interview techniques. *International Journal of Social Sciences and Education* 9(1):28-36.

Kolanczyk DM (CCP), **Borchert JS** (CCP) & **Lempicki KA** (SIM CENTER). (2019) Focus group describing simulation-based learning for cardiovascular topics in US colleges and schools of pharmacy. *Currents in Pharmacy Teaching and Learning* 11(11):1144-1151.

- ***Kristjansdottir K** (CGS), **Bodenstine TM** (CGS) & **Noronha S** (CHS-DG). (2020) Neoplasia. In N Tkacs, L Herrmann & R Johnson (Eds.) *Advanced Physiology and Pathophysiology*. (pp.215-240). New York, NY: Springer Publishing.
- ***Lawson S** (AZCOM), Arumugam N, Almansour AI, Kumar RS & **Thangamani S** (CVM). (2020) Dispiropyrrolidine tethered piperidone heterocyclic hybrids with broad-spectrum antifungal activity against *Candida albicans* and *Cryptococcus neoformans*. *Bioorganic Chemistry* April 20:epub ahead of print.
- ***Memedovski Z** (CGS), **Czerwonka E** (CGS), **Han J** (CDMI), **Mayer J** (CDMI), **Luce M** (CDMI), **Klemm LC** (CGS), **Hall ML** (CGS) & **Mayer AMS** (CGS). (2020) Classical and alternative activation of rat microglia treated with ultrapure *Porphyromonas gingivalis* lipopolysaccharide *in vitro*. *TOXINS* 12(5):E333.
- ***Mitzel K** (AZCOM), **Storjohann T** (CPG), **Herrick A** (CHS-GD), **Davis L** (CPG), **Shamblen C** (CHS-GD) & **Bonnin K** (CHS-GD). (2020) Interprofessional objective structured clinical examination with physician assistant and pharmacy students – A qualitative and quantitative study. *Currents in Pharmacy Teaching & Learning* 12(2):174-180.
- Nielsen C** (CGS), **Ratiu I** (CHS-GD), **Esfandiarei M** (CGS), Chen A & Tierney ESS. (2019) A review of psychosocial factors of Marfan Syndrome: Adolescents, adults, families, and providers. *Journal of Pediatric Genetics* 8(3):109-122.
- Olson J** (AZCOM), **Rinehart J** (SIM CENTER), **Jordan Spiegel J** (SIM CENTER) & **Al-Nakkash L** (CGS). (2019) Student perception on the integration of simulation experiences into human physiology curricula. *Advances in Physiology Education* 43(3):332-338.
- Pais GM** (CCP), **Liu J** (CCP), **Avedissian SN** (CCP), **Hiner D** (CCP), Xanthos T, Chalkias A, d'Aloja E, Locci E, **Gilchrist A** (CCP), **Prozialeck WC** (CGS), **Rhodes NJ** (CCP), Lodise TP, Fitzgerald JC, Downes KJ, Zuppa AF & **Scheetz MH** (CCP). (2020) Lack of synergistic nephrotoxicity between vancomycin and piperacillin/tazobactam in a rat model and a confirmatory cellular model. *Journal of Antimicrobial Chemotherapy* February 3:epub ahead of print.
- Rafie S, Cieri-Hutcherson NE, Frame TR, **Griffin B** (CCP), Harris JB, Horlen C, Shealy K, **Buros Stein A** (ORSP), Stone RH, **Vest K** (CCP), Westberg S & Yancey AM. (2019) Pharmacists' perspectives on prescribing and expanding access to hormonal contraception in pharmacies in the United States. *Journal of Pharmacy Practice* August 7:epub ahead of print.
- Riede T** (CGS), **Schaefer C** (CGS) & **Stein A** (ORSP). (2020) Role of deep breaths in ultrasonic vocal production of Sprague-Dawley rats. *Journal of Neurophysiology* 123:966-979.
- Rizkalla M** (CCOM), **Kowalkowski B** (CCOM) & **Prozialeck WC** (CGS). (2020) Antidepressant discontinuation syndrome: A common but underappreciated clinical problem. *The Journal of the American Osteopathic Association* 120(3):174-178.
- Roberts BS** (CDMA), **Roberts EP** (CDMA), **Brachvogel W** (CDMA) & **Buros Stein A** (ORSP). (2020) Practice management curricular changes may lead to enhance preparedness for practice. *Journal of Dental Education* February 13:epub ahead of print.
- Roberts EP** (CDMA), Delapp JA, **Florento G** (CDMA), **Kramer RT** (CDMA), **Brownstein SA** (CDMA) & **Buros Stein A** (ORSP). (2019) Pre-clinical competency testing in North American dental schools and opinions about possible standardization. *Journal of Dental Education* October 28:epub ahead of print.
- ***Roberts EP** (CDMA), **Roberts BS** (CDMA), **Burns A** (CPG), **Goodlet KJ** (CPG), **Chapman A** (CGS), **Cyphers R** (CDMA) & **Atkinson J** (CDMA). (2020) Prevalence and dental professional awareness of antibiotic self-medication among older adults: Implications for dental education. *Journal of Dental Education* May 16:epub ahead of print.
- Stone RH, Rafie S, **Griffin B** (CCP), Shealy K & **Buros Stein A** (ORSP). (2020) Pharmacist self-perception of readiness to prescribe hormonal contraception and additional training needs. *Currents in Pharmacy Teaching and Learning* 12(1):27-34.
- ***Van Dril E**, **Schumacher C** (CCP), **Kliethermes MA** (CCP), **Borchert JS** (CCP) & **Stein AB** (ORSP). (2020) Workload evaluation of clinical pharmacists in the ambulatory core setting. *Journal of the American College of Clinical Pharmacy* April 12:epub ahead of print.

PEER-REVIEWED PUBLICATIONS - MULTI-COLLEGE COLLABORATIONS (Continued)

Verdone M, **Joshi MD** (CCP), **Bodenstine TM** (CGS), **Green JM** (CGS), **Lynch SM** (CGS), **Gettig JP** (CCP) & **Fjortoft N** (CCP). (2020) Impact of an online, self-directed pharmacy bridging course on first-year students' learning. *American Journal of Pharmaceutical Education* 84(3):7864.

***Villa S** (CGS), **Hamideh M** (CGS), **Weinstock A** (AZCOM), Qasim MN, Hazbun TR, Sellam A, Hernday AD & **Thangamani S** (CVM). (2020) Transcriptional control of hyphal morphogenesis in *Candida albicans*. *FEMS Yeast Research* 20(1):foaa005.

Vimmerstedt JC (AZCOM), Padilla Pérez DJ, Angilletta Jr MJ & **VandenBrooks JM** (CGS). (2019) Oxygen supply limits the heat tolerance of avian embryos. *Biology Letters* 15:20190566.

*Wagner JL, **Rhodes NJ**, **Scheetz MH**, Bosso JA, Goff DA, Rybak MJ & Davis SL (for the MAD-ID Research Network). (2020) Opportunities for antimicrobial stewardship among carbapenem-treated patients in 18 North American hospitals. *International Journal of Antimicrobial Agents* 55(6):105970.

PEER-REVIEWED PUBLICATIONS - AZCOPT

***Kozlowski MR** & Kozlowski RE. (2020) A novel, small peptide with activity against human pancreatic cancer. *American Journal of Cancer Research* 10(5):1356-1365.

Lin Y, Ding Y, Jiang D, Li C, Huang X, Liu L, Xiao H, **Vasudevan B** & Chen Y. (2020) Genome-wide association of genetic variants with refraction, axial length, and corneal curvature: A longitudinal study of Chinese school children. *Frontiers in Genetics* 11:276.

Lin Z, **Vasudevan B**, Ciuffreda KJ, Gao TY, Zhou HJ & Liang YB. (2019) Generational difference of axial length and its risk factors in urban and rural China. *Journal of Ophthalmology* 2019:1607064.

***Roe M**, **Varney K**, **Ramos Roe E**, **Miller C**, **Feis A**, **Osmotherly K**, **Bland T** & **Esposito C**. (2020) Implementation of telehealth for vision therapy in an academic setting. *Vision Development & Rehabilitation* 6(2):173-181.

Sheehy CK, Bensinger ES, Romeo A, Rani L, Stepien-Bernabe N, Shi B, Helft Z, **Putnam N**, Cordano C, Gelfand JM, Bove R, Stevenson SB & Green AJ. (2020) Fixational microsaccades: A quantitative and objective measure of disability in multiple sclerosis. *Multiple Sclerosis Journal* 26(3):343-353.

PEER-REVIEWED PUBLICATIONS - AZCOM

Garberoglio FF, Apesteguía S, Simões TR, Palci A, Gómez RO, **Nydam RL**, Larsson HCE, Lee MSY & Caldwell MW. (2019) New skulls and skeletons of the Cretaceous legged snake *Najash*, and the evolution of the modern snake body plan. *Science Advances* 5:eaax5833.

Hsiou AS, **Nydam RL**, Simões TR, Pretto FA, Onary S, Martinelli AG, Liparini A, Romo de Vivar Martinez PR, Soares MB, Schultz CL & Caldwell MW. (2019) A new Clevosaurid from the Triassic (Carnian) of Brazil and the rise of sphenodontians in Gondwana. *Scientific Reports* 9:11821.

Hudson KM, Tsai T-H, **Finch C**, Dickerman JL, Liu S & Shen L. (2019) A validity study of COMLEX-USA Level 2-CE and COMAT clinical subjects: Concurrent and predictive evidence. *Journal of Graduate Medical Education* September 23: epub ahead of print.

*Lofgren D, Hutchison H, **Nydam R**, Paik M, Lee E, Butcher SA & Kirkpatrick T. (2020) Review of Paleogene vertebrates and invertebrates from the Goler Formation of California and their biostratigraphic and paleogeographic significance. In DM Miller (Ed.) *Changing Facies, 2020 Desert Symposium Field Guide and Proceedings*. (pp.97-106). Desert Hot Springs, CA: California State University Desert Studies Consortium.

PEER-REVIEWED PUBLICATIONS - CCO

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PEER-REVIEWED PUBLICATIONS - CCO (Continued)

***Liu C**, Han MHE & Ciuffreda KJ. (2020) Primary chromatic filter treatment in a concussion patient: Traditional and contemporary approaches. *Vision Development & Rehabilitation* 6(1):26-31.

Madrid-Costa D, Wolffsohn JS, Ruiz-Alcocer J & **De Gracia P**. (2019) Dry eye disease and refractive corrections. *Journal of Ophthalmology* 2019:2058618.

*Mao J, Lao J, **Liu C**, Zhang C, Chen Y, Tao J & Shen L. (2020) A study analyzing macular microvasculature features after vitrectomy using OCT angiography in patients with idiopathic macular epiretinal membrane. *BMC Ophthalmology* 20:165.

Mao J, Lin J, Zhu L, **Liu C**, Yu X, Zhang C, Chen Y, Zhang Y & Shen L. (2020) Quantitative assessment of retinal capillary vessel density and foveal avascular zone area in central serous chorioretinopathy using OCTA. *Ophthalmologica* January 21: epub ahead of print.

*Ruiz-Alcocer J, Lorente-Velázquez A, **de Gracia P** & Madrid-Costa D. (2020) Optical tolerance to rotation of trifocal toric intraocular lense as a function of the cylinder power. *European Journal of Ophthalmology* May 27: epub ahead of print.

Teran E, C-M Yee-Rendon, Ortega-Salazar J, **De Gracia P**, Garcia-Romo E & Woods RL. (2000) Evaluation of two strategies for alleviating the impact on the circadian cycle of smartphone screens. *Optometry and Vision Science* 97(3):207-217.

Wright PM. (2019) Today's tech for assisting the visually impaired. *Review of Optometry* 156(9):76-82.

PEER-REVIEWED PUBLICATIONS - CCOM

Sapadin A & **Misek R**. (2020) Atypical presentation of median arcuate ligament syndrome in the emergency department. *Clinical Practice and Cases in Emergency Medicine* 3(4):413-416.

PEER-REVIEWED PUBLICATIONS - CCP

Aljefri DM, Avedissian SN, **Rhodes NJ**, Postelnick MJ, **Nguyen K** & **Scheetz MH**. (2019) Vancomycin area under the curve and acute kidney injury: A meta-analysis. *Clinical Infectious Diseases* 69(11):1881-1887.

Arellano R, Ball J, Mospan C & **Patel J**. (2020) Hormonal contraception: From emergency coverage to long-term therapy. In JR Covvey, V Arya, NA DiPietro Mager, NV Gilman, M Herring, S Lukas, L Ochs & L Waddington (Eds.) *Public Health in Pharmacy Practice: A Casebook, 1st Edition*. (online only) Genesco, NY: Open SUNY Textbooks.

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Avedissian SN, **Rhodes NJ**, Kim Y, Bradley J, Valdez JL & Le J. (2019) Augmented renal clearance of aminoglycosides using population-based pharmacokinetic modelling with Bayesian estimation in the paediatric ICU. *Journal of Antimicrobial Chemotherapy* October 24: epub ahead of print.

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PEER-REVIEWED PUBLICATIONS - CCP (Continued)

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- ***Cornell S**, Halstenson C & Miller DK (Eds.). (2020) *The Art and Science of Diabetes Care and Education, 5th Edition*. (pp.1-964). Chicago, IL: Association of Diabetes Care & Education Specialists.
- *Downes KJ, Hayes M, Fitzgerald JC, **Pais GM**, Liu J, Zane NR, Goldstein SL, **Scheetz MH** & Zuppa AF. (2020) Mechanisms of antimicrobial-induced nephrotoxicity in children. *Journal of Antimicrobial Chemotherapy* 75(1):1-13.
- Eiland LS & **Todd TJ**. (2019) Considerations when incorporating technology into classroom and experiential teaching. *The Journal of Pediatric Pharmacology and Therapeutics* 24(4):270-275.
- Engle JP, Burke JM, Ashjian EJ, Avery L, **Borchert JS**, Faro SJE, Harris CS, Herink MC, Jain B, MacLaughlin EJ, Martello JL, Moore K, Rogers E, Smith WJ & Stranges PM. (2019) ACCP clinical pharmacist competencies: Advocating alignment between student, resident, and practitioner competencies. *Journal of the American College of Clinical Pharmacy* December 25: epub ahead of print.
- Fitzgerald JC, Zane NR, Himebauch AS, Reedy MD, Downes KJ, Topjian AA, Furth SL, Thomas NJ, **Scheetz MH** & Zuppa AF. (2019) Vancomycin prescribing and therapeutic drug monitoring in children with and without acute kidney injury after cardiac arrest. *Paediatric Drugs* 21(2):107-112.
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- Flannery AH, Soric MM, Benavides S, Bobbitt LJ, Chan A, Crannage AJ, Flores EK, Gibson CM, Gurgle HE, **Kolanczyk DM**, Merlo JR & Schwinghammer TL. (2019) Update to the American College of Clinical Pharmacy Pharmacotherapy Didactic Curriculum Toolkit. *Journal of the American College of Clinical Pharmacy* September 30: epub ahead of print.
- Grennan D. & **Wang S**. (2019) Steroid side effects. *JAMA* 322(3):282.
- Gulati A**, Lavhale M, Giri R, **Andurkar SV** & Xanthos T. (2020) Centhaquine citrate, alpha2B-adrenoceptor ligand, resuscitative agent for hypovolemic shock. *Drugs of the Future* 45(3):153-164.
- Gupta B, **Hornick MG**, **Briyal S**, Donovan R, Prazad P & **Gulati A**. (2020) Anti-apoptotic and immunomodulatory effect of CB2 agonist, JWH133, in a neonatal rat model of hypoxic-ischemic encephalopathy. *Frontiers in Pediatrics* 8:65.
- ***Harpe SE**. (2020) Setting the pace for best practices in reporting pharmacist care interventions: The PaCIR checklist. *Journal of the American Pharmacists Association* 60(3):421-422.
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PATENTS ISSUED

Mark Olsen (CPG)

Title: Inhibitors of BETA-Hydroxylase for Treatment of Cancer

Inventors: Olson M, Thomas, J-M

U.S. Patent Number: 10,351,555B2

Date Issued: July 16, 2019

INTRAMURAL FUNDING

AZCOM

Investigator/s	College	Department	Proposal Title
Gunsberger, T.	AZCOM	Clinical Education	Efficacy of Hippotherapy with Civilian Veterans

Total AZCOM Intramural Funding: \$10,000

AZCOPT

Investigator/s	College	Department	Proposal Title
Baker, J., Putnam, N. & Kozlowski, M.	AZCOPT	Optometry	Is There a "Safe" Level of Blue Light Exposure?
Helmuth, K., Kenworthy, P., Fintelmann, R. & Vasudevan, B.	AZCOPT	Optometry	Effect of Intense Pulsed Light (IPL) on Dry Eye Signs and Symptoms After Cataract Surgery
Helmuth, K., Kenworthy, P., Fintelmann, R. & Vasudevan, B.	AZCOPT	Optometry	Efficacy of Intense Pulsed Light (IPL) on Inflammatory Cytokines in the Tear Film
Kozlowski, M.	AZCOPT	Optometry	<i>In Vivo</i> Evaluation of Lead Compounds for the Treatment of Dry AMD
Kozlowski, M.	AZCOPT	Optometry	<i>In Vivo</i> Evaluation of a Compound for the Treatment of Dry AMD
Liao, G., Thomas, S., Putnam, N. & Kozlowski, M.	AZCOPT	Optometry	Blue Light: An Interdisciplinary Study
Putnam, N.	AZCOPT	Optometry	Clinical Applications of Tracking Scanning Laser Ophthalmoscopy (TSLO)
*Yeh, F.	AZCOPT	Optometry	Capstone Group 2022: Impact of Sleep Deprivation on the Tear Film

Total AZCOPT Intramural Funding: \$30,828

CCO

Investigator/s	College	Department	Proposal Title
Adams, K.	CCO	Optometry	Differences in Eye Movements When Processing English and Arabic Text
Deligio, D.	CCO	Optometry	Rigid Gas Permeable Contact Lens Efficient Antiseptic Routine (RGP CLEAR) Discovery and Optimization
*de Gracia, P.	CCO	Optometry	Spatial and Time Control of Entrance Pupils
Chakraborty, A.	CCO	Optometry	Interhemispheric Interaction in Motion Processing
Chakraborty, A. & Upadhyaya, S.	CCO	Optometry	Training Peripheral Attentive Motion Tracking with Perceptual Learning
Jose, J.	CCO	Optometry	Comparing Over-the-counter Dry Eye Drops with and without Preservatives and their Impact on Diagnosis and Management of Mild Dry Eye
Lucy, J.	CCO	Optometry	Interprofessional Model for Patients with Diabetes and Comorbid Glaucoma Risk to Improve Public Health Outcomes
Prestwich, C.	CCO	Optometry	Test-retest Repeatability of the Bernell Tannen Flipper™ Distance Horizontal Fusional Vergence Facility Test
*Prestwich, C. & Williams, J.	CCO	Optometry	Accuracy of Prism Power and Placement in Online Spectacle Orders
*Rice, S.	CCO	Optometry	The Effects of Exercise and Electronic Device Use on Saccades
Wright, P.	CCO	Optometry	Comparison of Central Corneal Thickness with Contact Pachymetry Versus Non-contact Pachymetry Methods

Total CCO Intramural Funding: \$32,834

INTRAMURAL FUNDING

CCP

Investigator/s	College	Department	Proposal Title
Andurkar, S.	CCP	Pharmacy Practice	Clarifying the Role of Central Endothelin ETA Receptors in the Potentiation of Morphine Analgesia and Prevention of Tolerance by BQ123
Bhalla, S.	CCP	Pharmaceutical Sciences	Signaling Mechanisms Involved in Endothelin-A Receptor Mediated Attenuation of Opioid Tolerance and Withdrawal
Briyal, S.	CCP	Pharmaceutical Sciences	Defining the Role of ETB Receptors in Neural Regeneration and Inflammation in a Transgenic Mouse Model of Alzheimer's Disease
Gilchrist, A.	CCP	Pharmaceutical Sciences	Development of Novel Tools for Assessing Renal Damage
Pais, G.	CCP	Pharmaceutical Sciences	Real Time Monitoring of Renal Function and Development of a Continuous Infusion Strategy to Reduce Vancomycin-induced Kidney Injury
Ranjan, A.	CCP	Pharmaceutical Sciences	Role of Centhaquine in Protection Against Acute Kidney Injury After Hypovolemic Shock
Scheetz, M.	CCP	Pharmacy Practice	Improving the Understanding of Vancomycin-induced Kidney Injury in Order to Avoid Toxicity

Total CCP Intramural Funding: \$43,981

CDMI

Investigator/s	College	Department	Proposal Title
Cuevas-Nunez, M.C. & Arnouk, H. (Ladnier, E. CDMI '22)	CDMI	Dental	Cornulin as a Prognostic Biomarker in Oral Squamous Cell Carcinoma
Jham, B. (Spica, M. CDMI '22 & Schroer, E. CDMI '22)	CDMI	Dental	The Role of Nodal And Cripto-1 in Pre-malignant and Inflammatory Lesions of the Oral Mucosa
Rocha de Oliveira Carrihlo, M. (Yoo, H. CDMI '22)	CDMI	Dental	Characterization of Collagen Cross-Links in Human Dentin: An Exploratory Spectroscopic Study
Williams, L. (Sanaei, N. CDMI '22 & Santiago, K. CDMI '22)	CDMI	Dental	Dental Office Medical Emergency Preparedness: A Survey of Dental Team Members

Total CDMI Intramural Funding: \$5,618

CGS

Investigator/s	College	Department	Proposal Title
Al-Nakkash, L.	CGS	Physiology	Assessment of the Effects of Genistein and Exercise on Intestinal Physiology in High Fat-High Sugar-fed Mice
Bjork, B.	CGS	Biochemistry & Molecular Genetics	Evaluation of Differential Cell Proliferation, Apoptosis and Gene/Protein Expression in Prdm16 or Mecom Mutant Mouse Embryonic Palate and Mandible Tissue
Broderick, T.	CGS	Physiology	Expression of Carnitine Biosynthetic Enzymes and High Affinity Carriers in a Model of Type 1 Diabetes
Buhlman, L.	CGS	Biomedical Sciences	A Genetic Approach to Increase Antioxidant Activity and Improve Parkin Loss-of-Function Phenotype in a Drosophila Model of Parkinson's Disease
Call, G.	CGS	Pharmacology	Microbiome Effects in PD Model Flies
Chandar, N.	CGS	Biochemistry & Molecular Genetics	Interrelationships Between Rb1 and Menin in Osteoblasts
Ciancio, M.	CGS	Biomedical Sciences	Effect of Hsp70 on Intestinal Support

INTRAMURAL FUNDING

CGS (Continued)

Investigator/s	College	Department	Proposal Title
Dineley, K.	CGS	Pharmacology	Adrenergic Receptor Function in Steroid-producing HAC15 Cells
Fay, M.	CGS	Pharmacology	Urinary microRNAs as Non-invasive Biomarkers of Cadmium-induced Nephrotoxicity
Gonzalez, F.	CGS	Microbiology & Immunology	Transcriptional Control of Fungal Virulence
Goral, J.	CGS	Anatomy	Effects of Diet and Gender on 4NQO-induced Histopathological Changes in Various Organs; Role of Inflammation
Green, J.	CGS	Biochemistry & Molecular Genetics	Does the 4NQO-induced Mouse Model of Oral Cancer Cause Pathological Changes in Liver, Kidneys and Lungs?
Grossman, A.	CGS	Anatomy	What Can Fossil Mammals from the Hazeva formation (early Miocene) Tell Us About When, Where, and How the Modern Biotic Interchange Between Africa and Eurasia Developed?
Hall, M.	CGS	Anatomy	Functional and Developmental Diversity in Mammal Body Wall Composition in the Perineum
Heesy, C.	CGS	Anatomy	Evaluation of Diffusible Iodine-based Computed Tomography (diceCT) as a Method for Allometric Studies of the Vertebrate Central Nervous System
Hull, E.	CGS	Biomedical Sciences	Lipid Rafts in SW13 Cell Subtypes with Differing Oncogenic Properties
Jentarra, G.	CGS	Biochemistry & Molecular Genetics	Is the Tau Hyperphosphorylation Observed in Alzheimer's Disease an Anti-microbial Response?
Kaufman, J. A.	CGS	Anatomy	Does Okadaic Acid Reproduce Alzheimer's Neuropathology in Zebrafish?
Kopf, P.	CGS	Pharmacology	The Pathophysiology of Moderately High Salt-induced Hypertension
Lawson, K.	CGS	Biochemistry & Molecular Genetics	P-cadherin-dependent Signaling in Chemoresistance
Lee, A. H.	CGS	Anatomy	Micro-computed Tomographic and Immunofluorescent Assays to Test for Medullary Bone in the Avian Skull
LePard, K. J.	CGS	Physiology	Glucose Uptake by Pancreatic Islets
Leyva, K. J.	CGS	Microbiology & Immunology	Factors Influencing the Progression of EMT in Cutaneous Squamous Cell Carcinoma
Martinez-Guryn, K.	CGS	Biomedical Sciences	The Impact of <i>Candida albicans</i> on Obesity and Lipid Absorption
Mayer, A. M. S.	CGS	Pharmacology	Isolation and Culture of Human Microglia: Effect of Cyanobacterial Lipopolysaccharide on Classical and Alternative Activation
McCulloch, P.	CGS	Physiology	Brainstem Cardiorespiratory Control Mechanisms
O'Hagan, K.	CGS	Physiology	Effect of Exercise and High Fat Diet on Skeletal Muscle miR133a
Plotkin, B. J.	CGS	Microbiology & Immunology	Anaerobic Cancer Cell Metabolism and Drug Resistance
Porta, M.	CGS	Physiology	The Memory of Pregnancy in the Uterus: Contractility
Simons, E.	CGS	Anatomy	The Development of Bone Laminarity and Collagen Fiber Orientation in Chickens
Smith, H. F.	CGS	Anatomy	Paleohistological and Micro-computed Tomographical Analyses of Late Cretaceous Turtle Fossils from Appalachia
Swanson-Mungerson, M.	CGS	Microbiology & Immunology	Requirement of the BTK for the LMP2A-mediated Survival of Pre-tumor B Cells
Townsend, K. E. B.	CGS	Anatomy	A Biostratigraphic Study of the Lower Duchesne River Formation: Searching for the MECO Event

INTRAMURAL FUNDING

CGS (Continued)

Investigator/s	Campus	Award	Proposal Title
Vallejo-Elias, J.	CGS	Physiology	Understanding the Role of Inducible Nitric Oxide Synthase in the Progression of Marfan Syndrome-associated Aortic Aneurysm
Volin, M.	CGS	Microbiology & Immunology	Lymphatic Pump Treatment of Rat Adjuvant-induced Arthritis

Total CGS Intramural Funding: \$163,444

CHS-DG

Investigator/s	College	Department	Proposal Title
Bazzetta, S.	CHS-DG	Physician Assistant Program	MWU-DG PA Alumni Knowledge and Perceptions on Optimal Team Practice (OTP)
Dillon, T. & Elliott-Burke, T.	CHS-DG	Physical Therapy	The Effect of Lumbar Multifidus Isometric Training on Chronic Lower Back Pain and Function: A Pilot Study
Evans, C.	CHS-DG	Physical Therapy	Does Exogenous Heat Shock Protein 70 Reverse High Fat Diet-induced Changes in Adipose Tissue Macrophage Activation?
Evans, C.	CHS-DG	Physical Therapy	Patterns and Sources for Contamination and Effectiveness of Cleaning Inpatient and Outpatient Physical Therapy Clinics
Gunn, J.	CHS-DG	Physician Assistant Program	Utilization of and Perceptions Toward Entrustable Professional Activities in Physician Assistant Education
Hanke, T.	CHS-DG	Physical Therapy	Lateral Stepping in Young and Older Adults
Keller, S.	CHS-DG	Physical Therapy	The Experience of a Difficult Conversation Simulation in Doctoral Physical Therapy Students
Krumdick, N.	CHS-DG	Behavioral Sciences	Salivary Cortisol Changes in Response to Equine Assisted Therapy in Children with Autism Spectrum Disorder
Piszczor, R.	CHS-DG	Behavioral Sciences	Promotion of Well-Being and Flourishing in an Allied Health Graduate School Population
Provencher, D.	CHS-DG	Physician Assistant Program	Feasibility of Using a Modified Version of the Interprofessional Collaborator Assessment Rubric (ICAR) to Evaluate Communication and Professional Collaboration Among Students in Different Healthcare Disciplines
Zera, S.	CHS-DG	Occupational Therapy	Implementing a Cognitive Orientation to Daily Occupational Performance (CO-OP) Group in the Day Rehab Setting: A Pilot Study

Total CHS-DG Intramural Funding: \$36,866

CHS-GD

Investigator/s	College	Department	Proposal Title
Eikenberry, M.	CHS-DG	Physical Therapy	Comparing Different Course Configurations and Methods of Measurements on Six-minute Walk Test Results in Healthy Individuals
Morrow, M.	CHS-DG	Nurse Anesthesia	What Are the Perceived Barriers to Implementation of Opioid-free Anesthesia by Certified Registered Nurse Anesthetists?
Russell, B.	CHS-DG	Physical Therapy	Evaluation of Hip Joint Stretching in Dogs with Hip Osteoarthritis
Thoms, T.	CHS-DG	Podiatry	Technology Supported Mindfulness Training Associated with Increased Empathy and Decreased Stress and Anxiety in Podiatric Medical Students

Total CHS-GD Intramural Funding: \$14,700

INTRAMURAL FUNDING

CPG

Investigator/s	College	Department	Proposal Title
Elbayoumi, T.	CPG	Pharmaceutical Sciences	Efficient Liposomal Delivery of Synthetic Phosphagen Substrate Cyclocreatine Impairs Cancer Cell Bioenergetics Triggering Pronounced Apoptosis
Huang, V.	CPG	Pharmacy Practice	Determination and Comparative Analysis of Antimicrobial Susceptibility Profiles and Pulse-field Gel Electrophoresis Patterns of <i>Staphylococcus aureus</i> and <i>Pseudomonas aeruginosa</i> isolated from Veterinary and Human Origin
Murdock, N.	CPG	Pharmacy Practice	Evaluation of One Year Post-hospital Mortality in Hospitalized Patients with Clinically Significant QT Interval Prolongation
Olsen, M.	CPG	Pharmaceutical Sciences	Evaluation and Enablement of Novel ASPH Inhibitors for the Treatment of Cancer
Olsen, M.	CPG	Pharmaceutical Sciences	Design and Evaluation of Novel Anti-coronavirus Compounds

Total CPG Intramural Funding: \$47,506

CVM

Investigator/s	College	Department	Proposal Title
Brosnahan, M.	CVM	Veterinary Medicine	Eosinophil Function and Phenotypes in Healthy Horses and Horses with Obesity, Asthma, or Pituitary Pars Intermedia Dysfunction
Jaffey, J. & Lee, J. K.	CVM	Veterinary Medicine	Phosphodiesterase-5 Expression in Pulmonary Arteries from Dogs with Pulmonary Fibrosis
Li, Weidang	CVM	Veterinary Medicine	Characterization of Interactions of Productive Chlamydia-specific CD4 T Cells with Pathogenic CD8 T Cells After Genital Chlamydia Infection
Lopez, B. & Kronstad, L.	CVM & CGS	Veterinary Medicine & Microbiology & Immunology	Dendritic Cell and Natural Killer Cell Cross-Talk During Influenza A Viral Infection
Vandenbrooks, J., Kreisler, R., Lee, J.K., Hernandez, J. & Quinlan, M.	CVM & CGS	Veterinary Medicine, Biochemistry & Molecular Genetics & Physiology	The Effects of Strain-level Differences in <i>Rickettsia rickettsii</i> on the Spread of Rocky Mountain Spotted Fever in Arizona and the Surrounding Regions

Total CVM Intramural Funding: \$55,000

FACULTY SEED GRANT AWARDS

Investigator/s	Campus	Award	Proposal Title
Lopez, B.	Glendale	Seed Grant	Bovine Neonatal Dendritic Cell Function During <i>Cryptosporidium parvum</i> Infection
Muldoon, K.	Glendale	Seed Grant	Paleontological Exploration of Regional Environmental Change in Northern Madagascar

Total Multidisciplinary Intramural Funding: \$30,000

ONE HEALTH RESEARCH AWARDS

Investigator/s	Campus	Award	Proposal Title
Jaffey, J., Graves, T. & Al-Nakkash, L.	Glendale	One Health	Effects of Calcitriol on Leukocyte Cytokine Production in Dogs with Type 1 Diabetes Mellitus
Traka, M.	Downers Grove	One Health	Role of Microglia Activation and Aging in Remyelination and Demyelination Processes in Adult-onset Demyelinating Disease

Total One Health Research Awards: \$20,000

**TOTAL MWU INTRAMURAL FUNDING AWARDED BY ALL COLLEGES
DURING THIS REPORTING PERIOD: \$490,777**

FY20, QUARTER #4 REPORT

UNIVERSITY-FUNDED RESEARCH SUPPORT POSITIONS BY CAMPUS*

MWU "HARD MONEY" RESEARCH SUPPORT POSITIONS		
CAMPUS	FTE	TOTAL COMPENSATION FOR REPORTING PERIOD
DOWNERS GROVE, ILLINOIS	31.5	\$2,133,000
GLENDALE, ARIZONA	36.8	\$2,412,868
TOTAL	68.3	\$4,545,868

***THIS INCLUDES FUNDED OR FILLED, TEMPORARY OR PERMANENT POSITIONS. THIS DOES NOT INCLUDE "SOFT MONEY" RESEARCH POSITIONS FUNDED BY GRANTS OR CONTRACTS.**

TOTAL COMPENSATION TO ALL COLLEGES FOR RESEARCH SUPPORT POSITIONS IN THIS REPORTING PERIOD IS \$4,545,868

UNIVERSITY-FUNDED CAPITAL RESEARCH EQUIPMENT

Another manner in which MWU supports research is through consideration and funding of capital research equipment requests submitted by departments. During FY20, MWU spent \$1,152,682 on capital equipment purchases for research purposes across both campuses.

UNIVERSITY-FUNDED *PER DIEM* CHARGES

A way in which MWU supports research is through the waiving of animal *per diem* charges for those seeking extramural funding. During the current reporting period, MWU waived \$296,429 in animal *per diem* charges across both campuses.

UNIVERSITY-FUNDED RECAPTURED SALARIES AS "ADDITIONAL COMPENSATION"

Finally, another way that MWU supports research is through offering additional pay to faculty who receive grants which support "hard money" salary positions. When grant funds are exhausted the additional pay is eliminated. During FY20, MWU paid out \$46,196 as "Additional Compensation" to faculty Principal Investigators on grants. This payment is available to all faculty who receive extramural funding for their research, subject to the ORSP's *Recaptured Salaries on Grants* policy.

FY20, QUARTER #4 REPORT

UNIVERSITY-FUNDED STUDENT SUPPORT BY CAMPUS DURING REPORTING PERIOD

RESEARCH SUPPORT FOR STUDENTS IN DOWNERS GROVE, ILLINOIS		
ACTIVITY	NUMBER OF AWARDS	TOTAL FUNDING
RESEARCH POSTER PRINTING	110	\$5,655
TRAVEL TO PRESENT RESEARCH	16	\$7,168
FELLOWSHIPS*	44	\$210,300
TOTAL FUNDING IN SUPPORT OF STUDENT RESEARCH ACTIVITIES IN ILLINOIS		\$223,123

RESEARCH SUPPORT FOR STUDENTS IN GLENDALE, ARIZONA		
ACTIVITY	NUMBER OF AWARDS	TOTAL FUNDING
RESEARCH POSTER PRINTING	70	\$2,946
TRAVEL TO PRESENT RESEARCH	27	\$13,031
FELLOWSHIPS*	59	\$289,100
TOTAL FUNDING IN SUPPORT OF STUDENT RESEARCH ACTIVITIES IN ARIZONA		\$305,077

#Includes fellowships awarded in FY19, even though some payments are made in FY20

ONE HEALTH STUDENT RESEARCH AWARDS

Investigator/s	Campus	Award	Proposal Title
Simeone, S. (CCOM '20)	Downers Grove	One Health	Sequential Mechanisms of Cancer Metastasis and Their Interactions with the Vascular Niche
Maag, C. (CVM '22)	Glendale	One Health	Development of a Comprehensive Individual-level, Population-level, and Environmental Risk Assessment of the Risk of <i>R. rickettsia</i> Exposure to People Living in the Arizona Region
Allison, L. (CVM '21)	Glendale	One Health	Vitamin D as a Biomarker of Immune Function in Canine Type I Diabetes Mellitus

TOTAL ONE HEALTH STUDENT RESEARCH FUNDING: \$7,500

**TOTAL FUNDING IN SUPPORT OF STUDENT RESEARCH ACTIVITIES
ACROSS BOTH CAMPUSES IS \$535,700**

THE ORSP WEBSITE CAN BE FOUND AT: <http://www.midwestern.edu/orsp.html>

MWU FACULTY JOINT APPOINTMENTS

AZCOPT

Karen Baab
Nancy Bae
Thomas Broderick
Gerald Call
Dana Devine
Justin Georgi
Fernando Gonzalez

Aryeh Grossman
Wade Grow
Jose Hernandez
Lauritz Jensen
Garilyn Jentarra
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AZCOM

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Kathryn Lawson

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Kathleen Muldoon
Kent Myers
Christopher Olson
Pamela Potter
Michael Quinlan
Parveen Ranjan
Ann Revill
Tobias Riede
Minsub Shim

Erin Simons
Heather Smith
Mark Swanson
Kathryn Townsend
Tony Tullot
Johana Vallejo-Elias
John VandenBrooks
Linda Walters
Gloria Yueh

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Vaibhav Tiwari
Renier Velez-Cruz
Susan Viselli
Michael Volin
Gordon Wahler
James Woods

CCOM

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J. Wesley Cook
Kirk Dineley
Michael Fay
Michele Fornaro
Joanna Goral
Jacalyn Green
Elise Halajian

Kyle Henderson
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Richard Laddaga
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Alice Chapman
Tamer Elbayoumi
Christian Evans

Micahel Fay
Annette Gilchrist
Vanthida Huang
Melanie Jordan
Medha Joshi
Rachael Kreisler
Jung Keun Lee

Weidang Li
John Mitchell
Ashlesh Murthy
Ogi Okwumabua
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