**Cluster 0:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Enabling Population-Scale Physical Activity Measurement on Common Mobile Phones | MASSACHUSETTS INSTITUTE OF TECHNOLOGY | U01 | 2010 | 0.017 |
| User-driven Retrospectively Supervised Classification Updating (RESCU) system for robust upper limb prosthesis control | INFINITE BIOMEDICAL TECHNOLOGIES, LLC | U44 | 2020 | 0.017 |
| User-driven Retrospectively Supervised Classification Updating (RESCU) systemfor robust upper limb prosthesis control | INFINITE BIOMEDICAL TECHNOLOGIES, LLC | U44 | 2019 | 0.016 |
| A Laser-Based Device for Work Site Stability Assessment | AAC INTERNATIONAL | R44 | 2007 | 0.014 |
| Wearable-Sensor System for Monitoring Motor Function | BOSTON UNIVERSITY (CHARLES RIVER CAMPUS) | R01 | 2010 | 0.011 |

**Cluster 1:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Machine Learning to Identify Complex Interactions in Genome-Wide Association Data | WAKE FOREST UNIVERSITY HEALTH SCIENCES | R01 | 2009 | 0.057 |
| Genome Wide Association Study of Head and Neck Cancer | UNIVERSITY OF TX MD ANDERSON CAN CTR | R01 | 2013 | 0.057 |
| Machine Learning Prediction of Cancer Susceptibility | UNIVERSITY OF PENNSYLVANIA | R01 | 2014 | 0.054 |
| Genome-Wide Association Analysis of Bladder Cancer | UNIVERSITY OF TX MD ANDERSON CAN CTR | U01 | 2012 | 0.052 |
| Genetic Susceptibility and Risk Model for Pancreatic Cancer | UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON | R01 | 2016 | 0.047 |

**Cluster 2:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Model-guided design of next-generation bacterial therapeutics to treat cardiovascular disease | UNIVERSITY OF WISCONSIN-MADISON | R01 | 2020 | 0.027 |
| Elucidating host phosphosignaling regulation of Plasmodium vivax liver stage | SEATTLE CHILDREN'S HOSPITAL | R21 | 2020 | 0.026 |
| Combining chemical and computational tools for predictive models of microbiome communities | UNIVERSITY OF PENNSYLVANIA | R35 | 2020 | 0.024 |
| Interactions between Gut Microbiome Natural Products and Intestinal Helminths | OREGON STATE UNIVERSITY | R21 | 2019 | 0.024 |
| Pan-vaccine Analysis to Test the Impact of Cytomegalovirus on Vaccine Efficacy | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | UH2 | 2020 | 0.022 |

**Cluster 3:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Open Health Natural Language Processing Collaboratory | MAYO CLINIC ROCHESTER | U01 | 2020 | 0.095 |
| Natural language processing for clinical and translational research | MAYO CLINIC ROCHESTER | R01 | 2016 | 0.087 |
| A Hybrid General Natural Language Processing Architecture | LOGICAL SEMANTICS, INC. | R43 | 2010 | 0.086 |
| Annotation, development and evaluation for clinical information extraction | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R01 | 2013 | 0.081 |
| Annotation, development and evaluation for clinical information extraction (transfer) | BOSTON CHILDREN'S HOSPITAL | R01 | 2013 | 0.081 |

**Cluster 4:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| STATISTICAL METHODS FOR RECURSIVELY PARTITIONED TREES | BARNES-JEWISH HOSPITAL | R01 | 2002 | 0.018 |
| Novel Analytic Techniques to Assess Physical Activity | UNIVERSITY OF MASSACHUSETTS AMHERST | R01 | 2010 | 0.013 |
| SELECTING AMONG MATHEMATICAL MODELS OF COGNITION | OHIO STATE UNIVERSITY | R01 | 2000 | 0.012 |
| Network modeling and robust estimation of the intraclass correlation coefficient to inform the design and analysis of cluster randomized trials for infectious diseases | HARVARD PILGRIM HEALTH CARE, INC. | R01 | 2020 | 0.0099 |
| Developing Advanced Algorithms to Address Major Computational Challenges in Current Microbiome Research | STATE UNIVERSITY OF NEW YORK AT BUFFALO | R01 | 2018 | 0.0098 |

**Cluster 5:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Systems Immunology in Aging and Chronic Diseases of Aging | JACKSON LABORATORY | R13 | 2020 | 0.19 |
| Systems Biology of Aging: Data-science meets Gero-science | JACKSON LABORATORY | R13 | 2019 | 0.19 |
| Interdisciplinary Infrastructure for Aging Research: Rochester Epidemiology Project | MAYO CLINIC ROCHESTER | R33 | 2020 | 0.17 |
| A Strength Analysis Tool for Studying Healthy Aging via Exercise in C. elegans | TEXAS TECH UNIVERSITY | R21 | 2016 | 0.17 |
| San Diego Nathan Shock Center | SALK INSTITUTE FOR BIOLOGICAL STUDIES | P30 | 2020 | 0.16 |

**Cluster 6:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Quantitative Parenchyma Descriptor as an Imaging Biomarker of Breast Cancer Risk | UNIVERSITY OF MICHIGAN AT ANN ARBOR | U01 | 2019 | 0.27 |
| A Noninvasive, Precision Medicine Approach to Improve Breast Cancer Screening Using Cell-free RNA from Saliva. | PRIME GENOMICS, INC. | R43 | 2019 | 0.26 |
| Informatics Techniques to Optimize Mammography for Aging Populations | UNIVERSITY OF WISCONSIN-MADISON | R01 | 2016 | 0.26 |
| Convergent AI for Precise Breast Cancer Risk Assessment | METHODIST HOSPITAL RESEARCH INSTITUTE | R01 | 2020 | 0.25 |
| Breast Cancer Risk Stratification with Resonant Electrical Impedance Spectroscopy | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R33 | 2010 | 0.25 |

**Cluster 7:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Hippocampal and prefrontal contributions to memory integration | UNIVERSITY OF TEXAS, AUSTIN | R01 | 2019 | 0.054 |
| Neurophysiological mechanisms of cognitive and emotional control in ADHD | OREGON HEALTH & SCIENCE UNIVERSITY | K23 | 2019 | 0.051 |
| The role of memory reactivation in emotional memory suppression and regulation | PRINCETON UNIVERSITY | F99 | 2020 | 0.048 |
| Intrinsic Cortical Networks and Cognitive Dysfunction in Parkinson's Disease | UNIVERSITY OF COLORADO DENVER | K02 | 2017 | 0.039 |
| Intrinsic Cortical Networks and Cognitive Dysfunction in Parkinson???s Disease | UNIVERSITY OF COLORADO DENVER | K02 | 2014 | 0.039 |

**Cluster 8:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Integrated Prediction of Protein Struture at 1D, 2D and 3D Levels | UNIVERSITY OF MISSOURI-COLUMBIA | R01 | 2013 | 0.2 |
| Advanced approaches to protein structure prediction | UNIVERSITY OF MICHIGAN AT ANN ARBOR | R35 | 2020 | 0.2 |
| PREDOCTORAL FELLOWSHIPS FOR STUDENTS WITH DISABILITIES | PRINCETON UNIVERSITY | F31 | 2004 | 0.18 |
| Alignment-independent Classification of Proteins | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2007 | 0.17 |
| Mining the Structural Genomics Pipeline | YALE UNIVERSITY | F32 | 2006 | 0.17 |

**Cluster 9:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Predicting Internet-Based Treatment Response for Major Depressive Disorder | MCLEAN HOSPITAL | R56 | 2017 | 0.095 |
| Biosignatures of Treatment Remission in Major Depression | COLUMBIA UNIVERSITY HEALTH SCIENCES | U01 | 2015 | 0.095 |
| Real-Time Mobile Cognitive Behavioral Intervention for Serious Mental Illness | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R01 | 2016 | 0.091 |
| Building Multistage Treatment Regimens for Depression after Acute Coronary SyndromeSyndrome | COLUMBIA UNIVERSITY HEALTH SCIENCES | R21 | 2017 | 0.087 |
| Machine Learning and Personalized Prognosis for Depression Treatment | UNIVERSITY OF TEXAS, AUSTIN | R21 | 2017 | 0.082 |

**Cluster 10:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Web-based App to Alleviate Loneliness and Isolation in Older Adults at Home | VIGOROUS MIND, INC. | R43 | 2018 | 0.24 |
| Integrated Web-Based Customer Engagement, Physical Exercise, and Coaching Platform for Older Adults | VIGOROUS MIND, INC. | R43 | 2017 | 0.22 |
| Cognitive and social aspects of decision-making | UNIVERSITY OF COLORADO AT COLORADO SPGS | R15 | 2002 | 0.21 |
| Multimorbidity and Treatment-Related Outcomes in Older Heart Failure Patients | UNIV OF MASSACHUSETTS MED SCH WORCESTER | R01 | 2020 | 0.2 |
| Statistical methods for vitamin D targets for functional outcomes in older adults | UNIVERSITY OF MARYLAND BALTIMORE | R01 | 2019 | 0.2 |

**Cluster 11:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Delineating proactive social behaviors in dynamic and multidimensional social space | ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI | R21 | 2020 | 0.2 |
| Studying how the hippocampal-prefrontal-hypothalamic circuit encodes social dominance | SALK INSTITUTE FOR BIOLOGICAL STUDIES | K99 | 2020 | 0.19 |
| The Molecular Underpinnings of Complex Social Behavior | ROCKEFELLER UNIVERSITY | R35 | 2020 | 0.18 |
| Neural Circuit Mechanisms of Social Homeostasis in Individuals and Supraorganismal Social Groups | SALK INSTITUTE FOR BIOLOGICAL STUDIES | DP1 | 2020 | 0.18 |
| BIGDATA: Small DA Social Behavior Driven Modeling and Optimization of Information | GEORGIA INSTITUTE OF TECHNOLOGY | R01 | 2015 | 0.18 |

**Cluster 12:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Towards cortical visual prosthetics | BOSTON CHILDREN'S HOSPITAL | R21 | 2010 | 0.16 |
| Cue Reliability and Depth Calibration During Space Perception | STATE COLLEGE OF OPTOMETRY | R01 | 2011 | 0.15 |
| Designing Visually Accessible Spaces | UNIVERSITY OF MINNESOTA | R01 | 2018 | 0.14 |
| A Visual Assessment System for Retinal Function/Drug Discovery | AFASCI, INC. | R41 | 2015 | 0.14 |
| Perceptual bases of visual concepts | UNIVERSITY OF IOWA | R01 | 2010 | 0.13 |

**Cluster 13:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Visualization and Analysis of the TCGA Data Using the UCSC Cancer Genomics Browse | UNIVERSITY OF CALIFORNIA SANTA CRUZ | R21 | 2009 | 0.097 |
| UCSC-Buck Inst. Genome Data Analysis Center for TCGA Research Network (GDAC) | UNIVERSITY OF CALIFORNIA SANTA CRUZ | U24 | 2016 | 0.091 |
| A Federated Galaxy for user-friendly large-scale cancer genomics research | OREGON HEALTH & SCIENCE UNIVERSITY | U24 | 2020 | 0.086 |
| Integrative Cancer Genomics: Drivers, Pathways and Drugs | COLUMBIA UNIV NEW YORK MORNINGSIDE | R01 | 2016 | 0.08 |
| MICRORNA BIOMARKERS FOR OROPHARYNGEAL CANCER | UNIVERSITY OF ILLINOIS AT CHICAGO | R01 | 2020 | 0.078 |

**Cluster 14:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| ABCD-USA Consortium: Research Project | UNIVERSITY OF CALIFORNIA, SAN DIEGO | U01 | 2019 | 0.22 |
| ABCD-USA Consortium:Research Project | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | U01 | 2019 | 0.18 |
| Predicting Substance Use and Related Antisocial Behavior with Psychiatric, Socioeconomic, and Brain Measures in Women Offenders | UNIVERSITY OF NEW MEXICO | F31 | 2020 | 0.17 |
| Using Machine Learning Approaches to Examine Emotion-Related Brain Activity and Substance Use Among Adolescents | GEORGE MASON UNIVERSITY | F31 | 2020 | 0.15 |
| Missing Data Matters: Substance Use Disorder Clinical Trials | JOHNS HOPKINS UNIVERSITY | R01 | 2020 | 0.12 |

**Cluster 15:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Avoidable Acute Care Use among Patients with Lupus | BRIGHAM AND WOMEN'S HOSPITAL | K23 | 2020 | 0.11 |
| Patient Oriented Research and Mentorship and Training in Functional Neuroimaging of Obsessive-Compulsive Disorder | YALE UNIVERSITY | K24 | 2020 | 0.11 |
| Understanding Functional Connectivity Abnormalities In Individual Patients with Psychosis | MASSACHUSETTS GENERAL HOSPITAL | K01 | 2020 | 0.1 |
| Multimodal Biomarkers in Frontotemporal Lobar Degeneration | UNIVERSITY OF PENNSYLVANIA | K01 | 2017 | 0.1 |
| Use of Machine Learning on Integrated Electronic Medical Record, Genetic and Waveform Data to Predict Perioperative Cardiorespiratory Instability | UNIVERSITY OF CALIFORNIA LOS ANGELES | K01 | 2020 | 0.1 |

**Cluster 16:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Biomarker panel to differentiate stroke from stroke mimic | PREDICTION SCIENCES, LLC | R43 | 2008 | 0.21 |
| Fast and Easy Assessment of Stroke | ALVA HEALTH, INC. | R43 | 2019 | 0.21 |
| Sleep apnea after stroke: Implications for screening and treatment | UNIVERSITY OF MICHIGAN AT ANN ARBOR | R01 | 2019 | 0.2 |
| Whole Transcriptome Studies of Patients with Transient Ischemic Attacks (TIAs) | UNIVERSITY OF CALIFORNIA AT DAVIS | R01 | 2020 | 0.2 |
| Prediction Model for Incident Stroke for Early Screening of an Individual at Risk of Stroke | IHEALTHSCREEN, INC. | R43 | 2018 | 0.19 |

**Cluster 17:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Programmable RNA-targeting CRISPR-Cas tools to study RNA biology | UNIVERSITY OF ROCHESTER | R35 | 2020 | 0.32 |
| The next generation of RNA-Seq simulators for benchmarking analyses | UNIVERSITY OF PENNSYLVANIA | R21 | 2019 | 0.28 |
| New methods for computational modeling of RNA structures | UNIVERSITY OF MISSOURI-COLUMBIA | R35 | 2020 | 0.28 |
| Computational genome-wide RNA profiling using next-generation sequencing | UNIVERSITY OF PENNSYLVANIA | R01 | 2016 | 0.26 |
| Defining the messenger RNP code in the brain | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R01 | 2016 | 0.26 |

**Cluster 18:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Reverse Engineering the Brain Stem Circuits that Govern Exploratory Behavior | UNIVERSITY OF CALIFORNIA, SAN DIEGO | U19 | 2020 | 0.13 |
| Revealing the connectivity and functionality of brain stem circuits | UNIVERSITY OF CALIFORNIA, SAN DIEGO | U01 | 2016 | 0.11 |
| Supplement request to: Revealing the connectivity and functionality of brain stem circuits | UNIVERSITY OF CALIFORNIA, SAN DIEGO | U01 | 2015 | 0.11 |
| Mapping the neural circuitry underlying walking | COLUMBIA UNIVERSITY HEALTH SCIENCES | F32 | 2020 | 0.11 |
| Experimental examinations of the mechanisms that generate the responses of midbra | HARVARD UNIVERSITY | R01 | 2017 | 0.11 |

**Cluster 19:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Speech Prosody and Articulatory Dynamics in Spoken Language | UNIVERSITY OF SOUTHERN CALIFORNIA | R01 | 2016 | 0.35 |
| Wearable silent speech technology to enhance impaired oral communication | UNIVERSITY OF TEXAS, AUSTIN | R01 | 2020 | 0.33 |
| Objectively Quantifying Speech Outcomes of Children with Cleft Palate | ARIZONA STATE UNIVERSITY-TEMPE CAMPUS | R21 | 2019 | 0.32 |
| Multimodal Speech Translation for Assistive Communication | NORTHEASTERN UNIVERSITY | R21 | 2015 | 0.32 |
| Using Speech Acoustics to Reveal Motor Disruptions in Psychosis | NORTHWESTERN UNIVERSITY | R21 | 2020 | 0.31 |

**Cluster 20:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Exploring Natural Language Processing, Image Processing, Machine Learning, and Us | UNIV OF MASSACHUSETTS MED SCH WORCESTER | R01 | 2015 | 0.1 |
| Protege: A Knowledge-Engineering Environment for Advancing Biomedical Sciences | STANFORD UNIVERSITY | R01 | 2020 | 0.1 |
| Automated Knowledge Extraction for Biomedical Literature | BRANDEIS UNIVERSITY | R01 | 2006 | 0.091 |
| National Center for Biomedical Ontology | STANFORD UNIVERSITY | U54 | 2014 | 0.087 |
| Automated Integration of Biomedical Knowledge | BRIGHAM AND WOMEN'S HOSPITAL | R01 | 2010 | 0.077 |

**Cluster 21:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Predicting brain tumor progression via multiparametric image analysis and modelin | UNIVERSITY OF PENNSYLVANIA | R01 | 2018 | 0.2 |
| MDCT Quantification of hepatic tumor viability for assessment of cancer therapy | IQ MEDICAL IMAGING, LLC | R42 | 2019 | 0.15 |
| Quantitative Multimodal Image Guidance for Improved Liver Cancer Treatment | YALE UNIVERSITY | R01 | 2020 | 0.14 |
| Exploring the Role of Mitochondrial Fission in Pancreatic Tumorigenesis | UNIVERSITY OF VIRGINIA | R01 | 2017 | 0.13 |
| Systems Microscopy Analysis of Tumor Cell Motility in Microenvironment Context | TEMPLE UNIV OF THE COMMONWEALTH | R00 | 2017 | 0.13 |

**Cluster 22:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Cerebellar connectivity and error-based learning in infants at risk for autism | WASHINGTON UNIVERSITY | F31 | 2020 | 0.29 |
| Investigating quantitative signatures of autism in toddlers | COLUMBIA UNIVERSITY TEACHERS COLLEGE | R01 | 2020 | 0.27 |
| Novel video-based approaches for detection of autism risk in the first year of life | UNIVERSITY OF CALIFORNIA AT DAVIS | R01 | 2020 | 0.26 |
| Co-occurring ADHD in young children with ASD: Precursors, detection, neural signatures, and early treatment | DUKE UNIVERSITY | P50 | 2020 | 0.26 |
| Neural Correlates of Biological Motion Perception in Children with ASD | SEATTLE CHILDREN'S HOSPITAL | K01 | 2018 | 0.25 |

**Cluster 23:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Statistical Learning in Language Acquisition | UNIVERSITY OF WISCONSIN-MADISON | R37 | 2019 | 0.2 |
| Infant statistical learning: Resilience, longevity, and specificity | UNIVERSITY OF TENNESSEE KNOXVILLE | R01 | 2019 | 0.17 |
| "Mechanisms of Early Bilingual Language Acquisition" | UNIVERSITY OF CALIFORNIA AT DAVIS | R03 | 2017 | 0.17 |
| Structural and Semantic Cues for the Acquisition of Linguistic Regularties | UNIVERSITY OF WISCONSIN-MADISON | F31 | 2011 | 0.16 |
| Linking Statistical Learning to Vocabulary Development | UNIVERSITY OF CALIFORNIA AT DAVIS | R03 | 2011 | 0.16 |

**Cluster 24:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Computational Prediction and Functional Validation of Novel Risk Loci of Alzheimer's Disease | EMORY UNIVERSITY | R56 | 2018 | 0.3 |
| Disparities in the Diagnosis of Alzheimer's Disease Among African American and European American Veterans | SEATTLE INST FOR BIOMEDICAL/CLINICAL RES | R56 | 2018 | 0.28 |
| Assessing ASL CBF as a biomarker for early Alzheimer's disease detection and disease progression | UNIVERSITY OF MARYLAND BALTIMORE | R01 | 2020 | 0.28 |
| Computational Prediction and Functional Validation of Novel Epigenetic Risk Loci in Alzheimer's Disease | EMORY UNIVERSITY | R56 | 2018 | 0.27 |
| Genetic Predictors, Transcriptomic Biomarkers, & Neurobiological Signatures of Resilience to Alzheimer's Disease | UPSTATE MEDICAL UNIVERSITY | R01 | 2020 | 0.26 |

**Cluster 25:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| iTransform: Wearable Biosensors to Detect the Evolution of Opioid Tolerance in Opioid Naïve Individuals | UNIV OF MASSACHUSETTS MED SCH WORCESTER | K23 | 2020 | 0.33 |
| Using Machine Learning to Predict Problematic Prescription Opioid Use and Opioid Overdose | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2019 | 0.32 |
| Real-time fMRI neurofeedback of large-scale network dynamics in opioid use disorder | YALE UNIVERSITY | R21 | 2020 | 0.29 |
| THE PRIMARY OBJECTIVE OF THE PROPOSED PHASE I WORK IS TO FURTHER DEVELOP A PROOF-OF-CONCEPT (POC) MACHINE LEARNING APPROACH TO DETECT ILLEGAL OPIOID SELLERS AND DEVELOP IT INTO AN MVP THAT CAN COLLEC | S-3 RESEARCH, LLC | N43 | 2019 | 0.29 |
| Biosignatures of opioid addiction treatment success | BIOREALM | R43 | 2018 | 0.29 |

**Cluster 26:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Deviceless and Autonomous Prospective Cardiac CT Triggering | GENERAL ELECTRIC GLOBAL RESEARCH CTR | R01 | 2020 | 0.092 |
| Quantitative Low-Dose PET Imaging | YALE UNIVERSITY | R01 | 2020 | 0.092 |
| Novel Algorithms for Reducing Radiation Dose of CT Perfusion | HURA IMAGING, INC | R44 | 2020 | 0.089 |
| Probing Dose Limits in Cardiac SPECT with Reconstruction and Personalized Imaging | ILLINOIS INSTITUTE OF TECHNOLOGY | R01 | 2018 | 0.088 |
| Integrated analysis of coronary anatomy and biology with 18F-fluoride PET and CT angiography | CEDARS-SINAI MEDICAL CENTER | R01 | 2020 | 0.082 |

**Cluster 27:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Computational methods for modeling lineage-specific gene regulation | STANFORD UNIVERSITY | R01 | 2016 | 0.15 |
| Global Discovery and Validation of Functional Regulatory Elements | UNIVERSITY OF MICHIGAN AT ANN ARBOR | R00 | 2017 | 0.11 |
| Genomic Reconstruction of Yeast Transcription Networks | UNIVERSITY OF CALIFORNIA SAN FRANCISCO | R01 | 2006 | 0.11 |
| Quantitative regulatory genomics: networks, cis-regulatory codes, and phenotypic variation | UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN | R35 | 2020 | 0.1 |
| Decoding the regulatory architecture of the human genome across cell types, individuals and disease | STANFORD UNIVERSITY | U01 | 2020 | 0.1 |

**Cluster 28:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| RESEARCH DIAGNOSTIC CRITERIA-- RELIABILITY AND VALIDITY | UNIVERSITY OF MINNESOTA TWIN CITIES | U01 | 2006 | 0.08 |
| Improving Melanoma Pathology Accuracy through Computer Vision Techniques - the IMPACT Study | UNIVERSITY OF CALIFORNIA LOS ANGELES | R01 | 2020 | 0.075 |
| Advanced Assessment to Accelerate Diagnostic Skill Acquisition, Phase II | PARALLEL CONSULTING, LLC | R42 | 2018 | 0.072 |
| Automated Image Guidance for Diagnosing Skin Cancer With Confocal Microscopy | SLOAN-KETTERING INST CAN RESEARCH | R01 | 2018 | 0.071 |
| A NON INVASIVE DERMATOLOGICAL LESION CLASSIFIER | WESTERN RESEARCH COMPANY, INC. | R44 | 2001 | 0.064 |

**Cluster 29:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Big Data analytics of HIV treatment gaps in South Carolina: Identification and prediction | UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA | R01 | 2020 | 0.37 |
| Addressing Major HIV Prevention and Health Outcomes Questions in an Era of Universal ART: Mentoring in a Community-Randomized Trial | BRIGHAM AND WOMEN'S HOSPITAL | K24 | 2020 | 0.35 |
| Big Data Analysis of HIV Risk and Epidemiology in Sub-Saharan Africa | STANFORD UNIVERSITY | R01 | 2020 | 0.34 |
| NeuroAIDS in India | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R01 | 2011 | 0.34 |
| Defining the impact of injection drug use on antiretroviral therapy and HIV treatment outcomes: an (epi)genomic approach | YALE UNIVERSITY | R01 | 2020 | 0.34 |

**Cluster 30:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Improving Breast Cancer Detection and Diagnosis with CAD | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2011 | 0.37 |
| Digital Mammography: Advanced Computer-Aided Breast Can\* | UNIVERSITY OF MICHIGAN | R01 | 2007 | 0.37 |
| Digital Tomosynthesis Mammography: Computer-Aided Analysis of Masses | UNIVERSITY OF MICHIGAN AT ANN ARBOR | R33 | 2009 | 0.34 |
| Toward Diagnostics and Therapies of Molecular Subcategories of CAD | ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI | R01 | 2018 | 0.33 |
| Improvement of microcalcification detection in digital breast tomosynthesis | UNIVERSITY OF MICHIGAN AT ANN ARBOR | R01 | 2015 | 0.3 |

**Cluster 31:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| A Shared Database for the Study of Phonological Development | CARNEGIE-MELLON UNIVERSITY | R01 | 2016 | 0.31 |
| Extending PhonBank for Clinical Phonology and Speech Analysis | CARNEGIE-MELLON UNIVERSITY | R01 | 2019 | 0.27 |
| Machine vision analysis of C.elegans phenotypic patterns | CALIFORNIA INSTITUTE OF TECHNOLOGY | R01 | 2009 | 0.26 |
| Machine vision analysis of nematode behavioral patterns. | UNIVERSITY OF CALIFORNIA SAN DIEGO | R21 | 2003 | 0.18 |
| SCH: INT: Computational Tools for Avoidaint/Restrictive Food Intake Disorder | DUKE UNIVERSITY | R01 | 2020 | 0.15 |

**Cluster 32:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Single-cell multi-protein device for informative cellular function evaluation | ISOPLEXIS, INC. | R43 | 2016 | 0.13 |
| Single Cell Transcriptomic and Genetic Diversity by Single Molecule Long Read Sequencing | UNIVERSITY OF PENNSYLVANIA | R01 | 2020 | 0.13 |
| In situ transcriptome profiling in single cells | CALIFORNIA INSTITUTE OF TECHNOLOGY | UH3 | 2020 | 0.12 |
| Defining cell types, lineage, and connectivity in developing human fetal cortex | UNIVERSITY OF CALIFORNIA LOS ANGELES | U01 | 2016 | 0.12 |
| Cell line identification with DNA replication timing fingerprints | INSILICOM, LLC | R43 | 2019 | 0.12 |

**Cluster 33:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Identifying Receipt of Colorectal Cancer Screening | VANDERBILT UNIVERSITY | R21 | 2008 | 0.17 |
| Innovative text-mining tools to accelerate citation screening: comparative efficiency and impact on conclusions | ECRI INSTITUTE | R03 | 2018 | 0.16 |
| Familial hypercholesterolemia screening in children: population impact of phenotype, genotype, and cascade approaches | COLUMBIA UNIVERSITY HEALTH SCIENCES | R01 | 2020 | 0.16 |
| Improving Critical Congenital Heart Disease Screening and Detection of "Secondary" Targets | UNIVERSITY OF CALIFORNIA AT DAVIS | R21 | 2020 | 0.16 |
| Advanced Image Analysis Tools for Diabetic Retinopathy Telemedicine Applications | EYENUK, INC. | R44 | 2015 | 0.12 |

**Cluster 34:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Identifying Electronic Phenotypes associated with Patient Health Outcomes of Interhospital Transfer Patients | CASE WESTERN RESERVE UNIVERSITY | R15 | 2018 | 0.053 |
| Adaptation and pilot implementation of a validated, electronic real time clinical decision support tool for care of Pneumonia patients in 12 Utah Urgent Care Centers | IHC HEALTH SERVICES, INC. | R18 | 2020 | 0.052 |
| Deep Learning and Streaming Analytics for Prediction of Adverse Events in the ICU | UNIVERSITY OF CALIFORNIA, SAN DIEGO | K01 | 2019 | 0.051 |
| Sepsis Early Prediction and Subphenotype Illumination Study (SEPSIS) | UNIVERSITY OF CHICAGO | R01 | 2019 | 0.05 |
| Sepsis Early Prediction and Subphenotype Illumination Study (SEPSIS) | UNIVERSITY OF WISCONSIN-MADISON | R01 | 2020 | 0.05 |

**Cluster 35:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| A systems analysis of drug tolerance in Mycobacterium tuberculosis | INSTITUTE FOR SYSTEMS BIOLOGY | R01 | 2020 | 0.16 |
| An Integrative Approach to Drug Repositioning Using Decision Tree Based Machine Learning | WEILL MEDICAL COLL OF CORNELL UNIV | F31 | 2020 | 0.15 |
| Detection of Potential Drug Effect Signals from Twitter Data | PURDUE UNIVERSITY | R15 | 2014 | 0.13 |
| A multifactorial pipeline to dissect combinatorial drug efficacy in Tuberculosis | UNIVERSITY OF WASHINGTON | R56 | 2020 | 0.12 |
| Novel computational approaches to predict drug response and combination effects | UT SOUTHWESTERN MEDICAL CENTER | R35 | 2020 | 0.12 |

**Cluster 36:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Continued Development of CellProfiler Cell Image Analysis Software | BROAD INSTITUTE, INC. | R01 | 2016 | 0.073 |
| Development of An Integrated High Throughput Imaging and Image Analysis Platform for Muscle | CYTOINFORMATICS, LLC | R42 | 2017 | 0.069 |
| Multimodal image registration by proxy image synthesis | JOHNS HOPKINS UNIVERSITY | R01 | 2015 | 0.066 |
| Advancing algorithms for image-based profiling | BROAD INSTITUTE, INC. | R35 | 2020 | 0.064 |
| Development and Dissemination of MuscleMiner: An Imaging Informatics Tool for Mus | UNIVERSITY OF FLORIDA | R01 | 2018 | 0.064 |

**Cluster 37:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Gene-Gene Interactions and Their Functional Roles in Prostate Cancer Aggressiveness | LSU HEALTH SCIENCES CENTER | R21 | 2017 | 0.26 |
| Genetic & epigenetic analysis of angiogenesis genes in recurrent prostate cancer | H. LEE MOFFITT CANCER CTR & RES INST | R01 | 2012 | 0.26 |
| CLINICAL AND EPIDEMIOLOGICAL CENTER--PROSTATE CANCER | JOHNS HOPKINS UNIVERSITY | U01 | 2004 | 0.25 |
| MRI Imaging and Biomarkers for Early Detection of Aggressive Prostate Cancer | UNIVERSITY OF MIAMI SCHOOL OF MEDICINE | U01 | 2020 | 0.25 |
| Prostate Cancer Detection by Serum Proteomic Profiling | UNIVERSITY OF CALIFORNIA IRVINE | R03 | 2005 | 0.23 |

**Cluster 38:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Automated Facial Expression Analysis for Research and Clinical Use | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2016 | 0.13 |
| FACIAL EXPRESSION ANALYSIS BY IMAGE PROCESSING | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2005 | 0.12 |
| Modeling the Nonmanuals in American Sign Language | PURDUE UNIVERSITY | R01 | 2008 | 0.12 |
| COMPUTER VISION ANALYSIS OF DYNAMIC FACIAL BEHAVIOR | UNIVERSITY OF CALIFORNIA SAN DIEGO | F32 | 2001 | 0.1 |
| A Direct Reading Video Assessment Instrument for Repetitive Motion Stress | UNIVERSITY OF WISCONSIN-MADISON | R01 | 2018 | 0.1 |

**Cluster 39:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Multi-Site Validation Study of the HLHS Arrest Predictor | BAYLOR COLLEGE OF MEDICINE | R01 | 2020 | 0.13 |
| Development of clinical decision tools for management of diarrhea of children in high and low resource settings | UNIVERSITY OF UTAH | R01 | 2020 | 0.12 |
| Machine Learning Algorithms to Measure Physical Activity in Children with Cerebral Palsy | DREXEL UNIVERSITY | R21 | 2017 | 0.12 |
| PREDICTING OUTCOME IN CHILDREN WITH NEW-ONSET TICS USING NEUROIMAGING DATA | WASHINGTON UNIVERSITY | R21 | 2016 | 0.12 |
| Effect of complex mixtures on oxidative stress and cognition in children | STATE UNIVERSITY OF NEW YORK AT BUFFALO | R01 | 2020 | 0.11 |

**Cluster 40:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Can machines be trusted? Robustification of deep learning for medical imaging | UNIVERSITY OF WISCONSIN-MADISON | R01 | 2020 | 0.18 |
| Distributed Learning of Deep Learning Models for Cancer Research | STANFORD UNIVERSITY | U01 | 2020 | 0.17 |
| Learning to learn in structural biology with deep neural networks | UNIVERSITY OF ROCHESTER | R35 | 2020 | 0.16 |
| Robust AI to develop risk models in retinopathy of prematurity using deep learning | MASSACHUSETTS GENERAL HOSPITAL | R21 | 2020 | 0.15 |
| Interpretable Deep Learning Model for Longitudinal Electronic Health Records and Applications to Heart Failure Prediction | GEORGIA INSTITUTE OF TECHNOLOGY | R56 | 2017 | 0.13 |

**Cluster 41:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Administrative Supplement Request for Transforming Analytical Learning in the Era of Big Data | UNIVERSITY OF MICHIGAN AT ANN ARBOR | R25 | 2016 | 0.25 |
| Big Data Coursework for Computational Medicine | WEILL MEDICAL COLL OF CORNELL UNIV | R25 | 2016 | 0.23 |
| Fisk University/UIUC-Mayo KnowENG BD2K Center R25 Partnership | FISK UNIVERSITY | R25 | 2019 | 0.23 |
| Transforming Analytical Learning in the Era of Big Data | UNIVERSITY OF MICHIGAN AT ANN ARBOR | R25 | 2020 | 0.23 |
| Summer Institute for Statistics of Big Data | UNIVERSITY OF WASHINGTON | R25 | 2016 | 0.18 |

**Cluster 42:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| CRCNS: Learning the Neural Code for Prosthetic Control | BROWN UNIVERSITY | R01 | 2006 | 0.081 |
| Exploring thalamocortical neural state space for adaptive closed-loop deep brain stimulation of epileptic networks. | STANFORD UNIVERSITY | F31 | 2019 | 0.078 |
| An Intracortical Brain-Computer Interface Model for High Efficiency Development of Closed-Loop Neural Decoding Algorithms | FLORIDA INTERNATIONAL UNIVERSITY | R01 | 2020 | 0.075 |
| Advancing understanding of neural representations of threat perception through a novel predictive coding framework | NORTHEASTERN UNIVERSITY | F32 | 2020 | 0.074 |
| Coding of auditory space in the avian brain | ALBERT EINSTEIN COLLEGE OF MEDICINE | R01 | 2014 | 0.068 |

**Cluster 43:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Longitudinal brain development and clinical outcomes in ADHD from 7-17 years | OREGON HEALTH & SCIENCE UNIVERSITY | R56 | 2016 | 0.091 |
| Enabling Shared Analysis and Processing of Large Neurophysiology Data | KITWARE, INC. | R44 | 2018 | 0.086 |
| Development and Dissemination of Robust Brain MRI Measurement Tools | UNIV OF NORTH CAROLINA CHAPEL HILL | R01 | 2015 | 0.081 |
| Mapping normal developmental coupling between structural and functional brain networks and abnormalities associated with psychosis | UNIVERSITY OF PENNSYLVANIA | F31 | 2018 | 0.081 |
| Pattern Analysis of fMRI via machine learning/sparse models: application to brain development | UNIVERSITY OF PENNSYLVANIA | R01 | 2019 | 0.078 |

**Cluster 44:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Metal binding sites in macromolecular structures | UNIVERSITY OF VIRGINIA | R01 | 2019 | 0.087 |
| Binding-Site Modeling with Multiple-Instance Machine-Learning | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | R01 | 2020 | 0.051 |
| Computational models for the signaling of tumor necrosis factor receptor on cell surfaces | ALBERT EINSTEIN COLLEGE OF MEDICINE | R01 | 2020 | 0.05 |
| Structure and Affinity: Computing FABP-Lipid Selectivity | JOHNS HOPKINS UNIVERSITY | R01 | 2006 | 0.049 |
| Defining the multi-dimensional code of zinc finger specificity-Resubmission-1 | NEW YORK UNIVERSITY SCHOOL OF MEDICINE | R01 | 2020 | 0.049 |

**Cluster 45:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Impact of Crouch Gait and Surgical Treatment on Knee Mechanics and Function | UNIVERSITY OF WISCONSIN-MADISON | R21 | 2016 | 0.17 |
| Real-time non-intrusive workload monitoring-Integration of human factors in surgery training and assessment | PURDUE UNIVERSITY | R21 | 2020 | 0.16 |
| Intraocular Robotic Interventional Surgical System for Cataract Surgery Project | UNIVERSITY OF CALIFORNIA LOS ANGELES | R21 | 2015 | 0.16 |
| Data-Driven Framework for Classification and Surgical Planning of Spinal Deformity. | CHILDREN'S HOSP OF PHILADELPHIA | R21 | 2020 | 0.16 |
| Quantifying the Metrics of Surgical Mastery: An Exploration in Data Science | STANFORD UNIVERSITY | R01 | 2020 | 0.16 |

**Cluster 46:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| 3D Image Analysis Approach to Determine Severity and Cause of Optic Nerve Edema | UNIVERSITY OF IOWA | R01 | 2017 | 0.12 |
| Multi-Parametric Spatial Assessment of Bone with HR-pQCT | UNIVERSITY OF COLORADO DENVER | R01 | 2020 | 0.11 |
| Relationship between Glaucoma and the Three-Dimensional Optic Nerve Head Related Structure | SCHEPENS EYE RESEARCH INSTITUTE | K99 | 2020 | 0.079 |
| Integrated RF and B-mode Deformation Analysis for 4D Stress Echocardiography | YALE UNIVERSITY | R01 | 2017 | 0.065 |
| High-definition, wide field of view corneal imaging | LIGHTOPTECH CORPORATION | R44 | 2020 | 0.062 |

**Cluster 47:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Smartband/smartphone-based automatic smoking detection and real time mindfulness intervention | YALE UNIVERSITY | R34 | 2020 | 0.38 |
| An Olfactory Method for Controlling Cigarette Craving | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2017 | 0.35 |
| An Olfactory Method for Controlling Cigarette Craving - Supplement | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2015 | 0.35 |
| Smoking Cessation Coach--An Internet Tailoring Program | JOHNS HOPKINS UNIVERSITY | R21 | 2002 | 0.33 |
| The Development of a Noninvasive Monitoring System for Cigarette Smoking | UNIVERSITY OF ALABAMA IN TUSCALOOSA | R21 | 2011 | 0.32 |

**Cluster 48:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Functional Cardiovascular 4D MRI in Congenital Heart Disease | NORTHWESTERN UNIVERSITY AT CHICAGO | R01 | 2020 | 0.15 |
| Machine learning for fast motion compensated quantitative abdominal DCE-MRI | BOSTON CHILDREN'S HOSPITAL | R21 | 2020 | 0.13 |
| Osteoarthritis: Quantitative Evaluation of Whole Joint Disease with MRI | STANFORD UNIVERSITY | R01 | 2020 | 0.12 |
| Noninvasive imaging-based electrophysiology using microelectronic devices | MASSACHUSETTS INSTITUTE OF TECHNOLOGY | R01 | 2015 | 0.12 |
| Rapid motion-robust quantitative DCE-MRI for the assessment of gynecologic cancers | SLOAN-KETTERING INST CAN RESEARCH | R01 | 2020 | 0.12 |

**Cluster 49:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Nasal biomarkers of asthma | ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI | R01 | 2019 | 0.47 |
| Asthma ascertainment and characterization through electronic health records | MAYO CLINIC ROCHESTER | R01 | 2017 | 0.46 |
| Multi-Omics Analysis of the Association of Polyunsaturated Fatty Acids with Asthma and Allergy in Childhood | BRIGHAM AND WOMEN'S HOSPITAL | K08 | 2020 | 0.42 |
| SCH: kHealth: Semantic Multisensory Mobile Approach to Personalized Asthma Care | WRIGHT STATE UNIVERSITY | R01 | 2018 | 0.41 |
| Multifactorial spatiotemporal analyses to evaluate environmental triggers and patient-level clinical characteristics of severe asthma exacerbations in children | DUKE UNIVERSITY | R21 | 2020 | 0.41 |

**Cluster 50:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Identification of epigenetic subclones in lymphomas and leukemias | WASHINGTON UNIVERSITY | F30 | 2020 | 0.25 |
| Signals of Epigenetic Modification in Sjogrens Syndrome | UNIVERSITY OF CALIFORNIA BERKELEY | F31 | 2018 | 0.24 |
| Defining Genomic Signatures for Aberrant DNA Methylation in Human Cancers | EMORY UNIVERSITY | R01 | 2013 | 0.24 |
| MODELING DNA METHYLATION'S ROLE IN GENE REGULATION | WASHINGTON UNIVERSITY | R01 | 2018 | 0.23 |
| Epigenome Interactions in Complex Neurogenetic Disorders | WEILL MEDICAL COLL OF CORNELL UNIV | R01 | 2015 | 0.22 |

**Cluster 51:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| A New Model of Peptide Fragmentation for Improved Protein Identification and Targ | UNIVERSITY OF COLORADO | R01 | 2015 | 0.24 |
| Analysis of LC-MS data to identify peptide and glycan biomarkers for hepatocellul | GEORGETOWN UNIVERSITY | R01 | 2014 | 0.22 |
| Improving Diagnosis of Multiple Sclerosis Through the Integration of Novel Imaging and Laboratory Biomarkers | UNIVERSITY OF VERMONT & ST AGRIC COLLEGE | K02 | 2020 | 0.21 |
| Sequential Ion/Ion Reactions for Large Peptide and Whole Protein Characterization | UNIVERSITY OF WISCONSIN-MADISON | R01 | 2015 | 0.21 |
| Intelligent Aids for Proteomic Data Mining | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | K25 | 2008 | 0.21 |

**Cluster 52:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Alcohol consumption monitoring via a power-free wearable biosensor | LOGICINK CORPORATION | R43 | 2018 | 0.29 |
| : Complex systems analysis of the impact of alcohol on bone in non-human primates | OREGON STATE UNIVERSITY | R01 | 2020 | 0.29 |
| Ambulatory assessment of alcohol use, mood dysregulation, and alcohol craving | UNIVERSITY OF MISSOURI-COLUMBIA | R21 | 2014 | 0.28 |
| Alcohol Misuse: An Independent Risk Factor that Increases the Incidence and Severity of COVID-19 | RUSH UNIVERSITY MEDICAL CENTER | R24 | 2020 | 0.27 |
| Alcohol Use: Nonlinearities in Intraindividual Variables | UNIVERSITY OF SOUTHERN CALIFORNIA | F31 | 2005 | 0.27 |

**Cluster 53:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Clinically Relevant Genome Variation Database | STANFORD UNIVERSITY | U01 | 2016 | 0.11 |
| Decrypting Variants of Uncertain Significance in Long-QT Syndrome | NORTHWESTERN UNIVERSITY AT CHICAGO | R01 | 2017 | 0.11 |
| Regulation of mRNA splicing by intronic genetic variants | INDIANA UNIV-PURDUE UNIV AT INDIANAPOLIS | R01 | 2018 | 0.11 |
| Discovering Novel Structural Genomic Rearrangements Using Deep Neural Networks | UNIVERSITY OF MICHIGAN AT ANN ARBOR | F31 | 2020 | 0.1 |
| EMERGE PHASE III CLINICAL CENTER AT PARTNERS HEALTHCARE | BRIGHAM AND WOMEN'S HOSPITAL | U01 | 2019 | 0.1 |

**Cluster 54:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| A statistical framework to systematically characterize cancer driver mutations in noncoding genomic regions | DANA-FARBER CANCER INST | R21 | 2020 | 0.18 |
| Functional Annotation of Natural and Disease Variants in Tryosine Kinases | UNIVERSITY OF GEORGIA | R01 | 2020 | 0.15 |
| Massively parallel functional analyses of human PTEN variants | OREGON HEALTH & SCIENCE UNIVERSITY | F31 | 2019 | 0.15 |
| Molecular Characterization of Joubert Syndrome | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R01 | 2020 | 0.14 |
| Computational evaluation of the causal role of somatic mutations in human aging | ALBERT EINSTEIN COLLEGE OF MEDICINE | K99 | 2019 | 0.14 |

**Cluster 55:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Leveraging National Sleep Research Resource Data for Personalized Sleep Profiling | BRIGHAM AND WOMEN'S HOSPITAL | R01 | 2020 | 0.41 |
| Cardiovascular implications of sleep characteristics using real-world objective sleep data | UNIVERSITY OF WASHINGTON | R21 | 2020 | 0.4 |
| Enhanced Measurement and Modeling of Sleep Electrophysiology to Better Understand Sleep Disparities | BRIGHAM AND WOMEN'S HOSPITAL | R21 | 2020 | 0.38 |
| Sleep Health Profiles in Middle-aged Workers in Relation to Cardiovascular and Cognitive Health | UNIVERSITY OF SOUTH FLORIDA | R56 | 2020 | 0.38 |
| Administrative Supplement for Sleep and Cardiometabolic Health Disparities at the US/Mexico Border: The Nogales Cardiometabolic Health and Sleep (NoCHeS) Study | UNIVERSITY OF ARIZONA | R01 | 2019 | 0.38 |

**Cluster 56:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| The Molecular Pathogenesis of Health Disparities in Inf\* | NORTHSHORE UNIVERSITY HEALTHSYSTEM | R01 | 2005 | 0.058 |
| PATHOGENESIS OF HEALTH DISPARITIES IN PRETERM BIRTH | EVANSTON NORTHWESTERN HEALTHCARE RES INS | R01 | 2001 | 0.057 |
| Computational Methods for Expression Image Analysis | ARIZONA STATE UNIVERSITY-TEMPE CAMPUS | R01 | 2013 | 0.056 |
| Integrated SNP, gene expression and proteomic analysis | EPICENTER SOFTWARE | R44 | 2005 | 0.055 |
| GenePattern: Methodologies and Software Tools. | MASSACHUSETTS INSTITUTE OF TECHNOLOGY | R33 | 2004 | 0.054 |

**Cluster 57:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Measuring Infant Pain Objectively using Sensor Fusion and Machine Learning Algorithms | AUTONOMOUS HEALTHCARE, INC. | R41 | 2018 | 0.41 |
| Evaluation of Pain in Chronic Pancreatitis using the NAPS2 cohorts | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R21 | 2015 | 0.4 |
| Autonomous Pain Recognition in Non-Verbal and Critically Ill Patients | UNIVERSITY OF FLORIDA | R21 | 2020 | 0.4 |
| A Multimodal Approach for Monitoring Prolonged Acute Pain in Neonates | UNIVERSITY OF SOUTH FLORIDA | R21 | 2020 | 0.4 |
| Central glutamate signaling in postoperative pain regulation - Renewal | NEW YORK UNIVERSITY SCHOOL OF MEDICINE | R01 | 2020 | 0.39 |

**Cluster 58:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Macro-vasculature: A Novel Image Biomarker of Lung Cance | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2020 | 0.26 |
| Histopathology correlated quantitative analysis of lung nodules with LDCT for early detection of lung cancer | UNIVERSITY OF MICHIGAN AT ANN ARBOR | U01 | 2020 | 0.26 |
| Lung cancer in East Africa and the relationship to HIV-1 infection: epidemiology, molecular characterization and imaging | CASE WESTERN RESERVE UNIVERSITY | U54 | 2020 | 0.26 |
| A diagnostic model for malignant pulmonary nodules | UNIVERSITY OF MARYLAND BALTIMORE | R21 | 2020 | 0.25 |
| EARLY DETECTION OF LUNG CANCER USING METABOLOMIC LIPID PROFILING | RUSH UNIVERSITY MEDICAL CENTER | R21 | 2014 | 0.25 |

**Cluster 59:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Obesity Prevention in Early Life (OPEL): Risk Screening and Targeted Intervention | INDIANA UNIV-PURDUE UNIV AT INDIANAPOLIS | K01 | 2020 | 0.2 |
| Validation and Evaluation of a Portable Body Scanner for Determination of Obesity | UNIVERSITY OF TEXAS, AUSTIN | R21 | 2009 | 0.19 |
| Childhood obesity surveillance using electronic health records data | FRED HUTCHINSON CANCER RESEARCH CENTER | R21 | 2017 | 0.18 |
| Genome Wide Association Study for Childhood Obesity | CHILDREN'S HOSP OF PHILADELPHIA | R01 | 2017 | 0.17 |
| Role of Inflammatory Processes in Reward Network Alterations in Obesity | UNIVERSITY OF CALIFORNIA LOS ANGELES | K23 | 2020 | 0.16 |