**Cluster 0:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Biosignatures of Treatment Remission in Major Depression | COLUMBIA UNIVERSITY HEALTH SCIENCES | U01 | 2015 | 0.15 |
| An Expert System to Reduce Depression in Primary Care | PRO-CHANGE BEHAVIOR SYSTEMS, INC. | R44 | 2004 | 0.14 |
| Predicting Internet-Based Treatment Response for Major Depressive Disorder | MCLEAN HOSPITAL | R56 | 2017 | 0.14 |
| Vocal Pattern Detection of Late-Life Depression | UNIVERSITY OF IOWA | R15 | 2019 | 0.13 |
| LifeSense: Transforming Behavioral Assessment of Depression Using Personal Sensing Technology | NORTHWESTERN UNIVERSITY AT CHICAGO | R01 | 2020 | 0.13 |

**Cluster 1:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Integrated Model of Palliative and Primary Care in Seriously Ill Older Adults | BRIGHAM AND WOMEN'S HOSPITAL | R56 | 2017 | 0.04 |
| Machine learning of physiological variables to predict diagnose and treat cardiorespiratory instability | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2019 | 0.037 |
| Development of Models for the Prediction of Ventilator-Associated Conditions in the Hospital Setting | ORIGENT DATA SCIENCES, INC. | R43 | 2017 | 0.036 |
| Improving Medical Decision Making for Older Patients with End Stage Renal Disease | BOSTON MEDICAL CENTER | R01 | 2020 | 0.036 |
| A Novel, Patient-Centered Prognostic Tool for Adults with Critical Illness | NORTHWESTERN UNIVERSITY AT CHICAGO | F32 | 2018 | 0.036 |

**Cluster 2:**

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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 |
| Urinary biomarkers for prostate cancer diagnosis and risk assessment | UNIVERSITY OF TEXAS EL PASO | SC1 | 2020 | 0.24 |

**Cluster 3:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Big Flow Cytometry Data: Data Standards, Integration and Analysis | FRED HUTCHINSON CANCER RESEARCH CENTER | R01 | 2020 | 0.038 |
| Administrative Supplement Request for Transforming Analytical Learning in the Era of Big Data | UNIVERSITY OF MICHIGAN AT ANN ARBOR | R25 | 2016 | 0.036 |
| COINSTAC: decentralized, scalable analysis of loosely coupled data | THE MIND RESEARCH NETWORK | R01 | 2018 | 0.032 |
| COINSTAC: Decentralized, Scalable Analysis of Loosely Coupled Data | GEORGIA STATE UNIVERSITY | R01 | 2019 | 0.032 |
| BioMediator: Biologic Data Integration& Analysis System | UNIVERSITY OF WASHINGTON | R01 | 2005 | 0.032 |

**Cluster 4:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Bringing Modern Data Science Tools to Bear on Environmental Mixtures | RICE UNIVERSITY | R01 | 2020 | 0.027 |
| BRINGING MODERN DATA SCIENCE TOOLS TO BEAR ON ENVIRONMENTAL MIXTURES | UNIVERSITY OF NOTRE DAME | R01 | 2020 | 0.027 |
| Predicting Heterogeneous Neurodevelopmental Outcomes in School-age Children with Early Caregiving Adversities | COLUMBIA UNIV NEW YORK MORNINGSIDE | R01 | 2020 | 0.026 |
| A DATA SCIENCE APPROACH TO AIR TOXICS AND CHILDREN'S ENVIRONMENTAL HEALTH | COLUMBIA UNIVERSITY HEALTH SCIENCES | R00 | 2020 | 0.024 |
| A Data Science Approach to Air Toxics and Children's Environmental Health | ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI | K99 | 2018 | 0.024 |

**Cluster 5:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| BMP6 Induction of Human Mesenchymal Stem Cell Osteoblast Differentiation | UNIVERSITY OF PENNSYLVANIA | R01 | 2010 | 0.26 |
| Centrosomin and centrosomes in cell division | FLORIDA STATE UNIVERSITY | R01 | 2012 | 0.18 |
| Efficient patient-specific cell generation by image-guidance | DRVISION TECHNOLOGIES, LLC | R44 | 2014 | 0.16 |
| Centrosomin and Centrosomes in Cell Division | UT SOUTHWESTERN MEDICAL CENTER | R01 | 2007 | 0.15 |
| Minority Predoctoral Fellowship Program | UNIVERSITY OF TEXAS SW MED CTR | F31 | 2006 | 0.13 |

**Cluster 6:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| UNDERSTANDING THE COMPLEX RELATIONSHIP BETWEEN TF BINDING AND GENE EXPRESSION | WASHINGTON UNIVERSITY | R01 | 2019 | 0.086 |
| "Ribonomics" of Gene Regulation to predict Innate Immune Responses | UNIVERSITY OF CALIFORNIA LOS ANGELES | U01 | 2017 | 0.085 |
| Integrated multi-omics analyses of early mammalian craniofacial development | UNIVERSITY OF CONNECTICUT SCH OF MED/DNT | R03 | 2020 | 0.083 |
| The Nomenclature of Human and Vertebrate Genes | EUROPEAN MOLECULAR BIOLOGY LABORATORY | U24 | 2020 | 0.083 |
| Computational methods for modeling lineage-specific gene regulation | STANFORD UNIVERSITY | R01 | 2016 | 0.082 |

**Cluster 7:**

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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 | 0.19 |
| Distance-based ab initio protein structure prediction | UNIVERSITY OF MISSOURI-COLUMBIA | R01 | 2020 | 0.18 |
| New Computational Methods for Data-driven Protein Structure Prediction | TOYOTA TECHNOLOGICAL INSTITUTE / CHICAGO | R01 | 2020 | 0.18 |
| Advanced approaches to protein structure prediction | UNIVERSITY OF MICHIGAN AT ANN ARBOR | R35 | 2020 | 0.17 |
| Mining the Structural Genomics Pipeline | YALE UNIVERSITY | F32 | 2006 | 0.16 |

**Cluster 8:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Content based mammogram retrieval as a diagnostic aid | ILLINOIS INSTITUTE OF TECHNOLOGY | R21 | 2003 | 0.075 |
| Multimodal image registration by proxy image synthesis | JOHNS HOPKINS UNIVERSITY | R01 | 2015 | 0.066 |
| Continued Development of CellProfiler Cell Image Analysis Software | BROAD INSTITUTE, INC. | R01 | 2016 | 0.065 |
| A suite of diagnostic aids based on image retrieval | ILLINOIS INSTITUTE OF TECHNOLOGY | R01 | 2012 | 0.064 |
| Development and Dissemination of MuscleMiner: An Imaging Informatics Tool for Mus | UNIVERSITY OF FLORIDA | R01 | 2018 | 0.061 |

**Cluster 9:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Learning from patient safety events: A case base tool kit | UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON | R01 | 2018 | 0.069 |
| Collaborative Research: Statistical algorithms for anomaly detection and patterns recognition in patient care and safety event reports | VIRGINIA POLYTECHNIC INST AND ST UNIV | R01 | 2019 | 0.062 |
| Collaborative Research: Statistical algorithms for anomaly detection and patterns recognition in patient care and safety event reports | NORTH CAROLINA STATE UNIVERSITY RALEIGH | R01 | 2020 | 0.062 |
| Automated Detection of Medical Errors | COLUMBIA UNIVERSITY HEALTH SCIENCES | K22 | 2007 | 0.058 |
| Safety Promotion through Early Event Detection in the Elderly (SPEEDe) | VANDERBILT UNIVERSITY MEDICAL CENTER | R01 | 2020 | 0.054 |

**Cluster 10:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| A Multisite Neurobehavioral Assessment of Fetal Alcohol Spectrum Disorders | SAN DIEGO STATE UNIVERSITY | U01 | 2020 | 0.2 |
| Alcohol Use: Nonlinearities in Intraindividual Variables | UNIVERSITY OF SOUTHERN CALIFORNIA | F31 | 2005 | 0.19 |
| Alcohol Misuse: An Independent Risk Factor that Increases the Incidence and Severity of COVID-19 | RUSH UNIVERSITY MEDICAL CENTER | R24 | 2020 | 0.19 |
| Mediators and Moderators of a Neighborhood Experiment on Alcohol Use | UNIVERSITY OF MINNESOTA | R21 | 2017 | 0.18 |
| Alcohol consumption monitoring via a power-free wearable biosensor | LOGICINK CORPORATION | R43 | 2018 | 0.18 |

**Cluster 11:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Neuromodulatory control of collective circuit dynamics in C. elegans | MASSACHUSETTS INSTITUTE OF TECHNOLOGY | R01 | 2020 | 0.19 |
| High Resolution Connectomics of Mammalian Neural Circuits | HARVARD UNIVERSITY | R01 | 2015 | 0.19 |
| Instructive Signals for Motor Learning | STANFORD UNIVERSITY | R01 | 2019 | 0.19 |
| Neural control of skilled movements: an ethological dissection of genetically tractable mammalian motor circuits | SALK INSTITUTE FOR BIOLOGICAL STUDIES | DP2 | 2019 | 0.17 |
| Revealing the connectivity and functionality of brain stem circuits | UNIVERSITY OF CALIFORNIA, SAN DIEGO | U01 | 2016 | 0.16 |

**Cluster 12:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Assessing ASL CBF as a biomarker for early Alzheimer's disease detection and disease progression | UNIVERSITY OF MARYLAND BALTIMORE | R01 | 2020 | 0.26 |
| Using connectomics to characterize risk for Alzheimer's Disease | MEDICAL UNIVERSITY OF SOUTH CAROLINA | R01 | 2020 | 0.23 |
| Manifold-valued statistical models for longitudinal morphometic analysis in preclinical Alzheimer's disease (AD) | UNIVERSITY OF WISCONSIN-MADISON | R01 | 2018 | 0.23 |
| Computational Prediction and Functional Validation of Novel Risk Loci of Alzheimer's Disease | EMORY UNIVERSITY | R56 | 2018 | 0.22 |
| Understanding the molecular mechanisms that contribute to neuropsychiatric symptoms in Alzheimer Disease | ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI | R01 | 2020 | 0.22 |

**Cluster 13:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Decrypting Variants of Uncertain Significance in Long-QT Syndrome | NORTHWESTERN UNIVERSITY AT CHICAGO | R01 | 2017 | 0.11 |
| Micropublications for Automating Genome Sequence Variant Interpretation from Medical Literature | GENOMENON, INC. | R43 | 2019 | 0.11 |
| Predicting causal non-coding variants in a founder population | STANFORD UNIVERSITY | R01 | 2017 | 0.11 |
| Clinically Relevant Genome Variation Database | STANFORD UNIVERSITY | U01 | 2016 | 0.098 |
| Discovery and analysis of structural variation in whole genome sequences | UNIVERSITY OF MICHIGAN AT ANN ARBOR | R01 | 2016 | 0.096 |

**Cluster 14:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Reliable Seizure Prediction Using Physiological Signals and Machine Learning | MAYO CLINIC ROCHESTER | R01 | 2019 | 0.39 |
| Dynamics of long range network interactions in focal epilepsy | COLUMBIA UNIVERSITY HEALTH SCIENCES | R01 | 2020 | 0.34 |
| Trainable Early Warning System for Epileptic Seizures | CHATTEN ASSOCIATES, INC. | R44 | 2006 | 0.34 |
| Algorithm for the Real-Time Detection of Absence Seizures from Oculometric Data | EYSZ, INC. | R43 | 2020 | 0.33 |
| Tracking pre-seizure dynamics to predict and control seizures | STANFORD UNIVERSITY | R01 | 2020 | 0.32 |

**Cluster 15:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Computerized Radiographic Analysis of Bone Structure | UNIVERSITY OF CHICAGO | R01 | 2005 | 0.091 |
| MACE - Michigan Alliance for Cheminformatic Exploration | UNIVERSITY OF MICHIGAN | P20 | 2007 | 0.067 |
| VOICE RESPONSE/INTERNET REGISTRATION & RANDOMIZATION | RHO FEDERAL SYSTEMS DIVISION, INC. | R44 | 2002 | 0.067 |
| FOUNDATION MODEL OF ANATOMY | UNIVERSITY OF WASHINGTON | R01 | 2002 | 0.059 |
| INTELLIGENT CRITIQUING OF CLINICAL-GUIDELINE APPLICATION | STANFORD UNIVERSITY | R01 | 2000 | 0.052 |

**Cluster 16:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Using Machine Learning to Predict Problematic Prescription Opioid Use and Opioid Overdose | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2019 | 0.26 |
| Real-time fMRI neurofeedback of large-scale network dynamics in opioid use disorder | YALE UNIVERSITY | R21 | 2020 | 0.24 |
| 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 | 0.24 |
| iTransform: Wearable Biosensors to Detect the Evolution of Opioid Tolerance in Opioid Naïve Individuals | UNIV OF MASSACHUSETTS MED SCH WORCESTER | K23 | 2020 | 0.23 |
| Technology Improving Success of Medication-Assisted Treatment in Primary Care | Q2I, LLC | R42 | 2020 | 0.21 |

**Cluster 17:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Advancing Physical Activity Measurement Using Pattern Recognition Techniques | UNIVERSITY OF MASSACHUSETTS AMHERST | RC1 | 2010 | 0.24 |
| An Intelligent Physical Activity Monitor | CREARE, INC. | R43 | 2006 | 0.21 |
| Novel Models to Predict Energy Expenditure and Physical Activity in Preschoolers | BAYLOR COLLEGE OF MEDICINE | R01 | 2013 | 0.21 |
| PAGES: Physical Activity Genomics, Epigenomics/transcriptomics Site | ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI | U24 | 2020 | 0.2 |
| A cutting edge approach to assessing physical activities occurring on sidewalks/streets | UNIVERSITY OF DELAWARE | R21 | 2019 | 0.2 |

**Cluster 18:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Predicting Self-Harm, Suicide Attempt, and Suicidal Death using Longitudinal EHR, Claims and Mortality Data | WEILL MEDICAL COLL OF CORNELL UNIV | R01 | 2020 | 0.41 |
| Digital Monitoring of Agitation for Short-Term Suicide Risk Prediction | MASSACHUSETTS GENERAL HOSPITAL | K23 | 2020 | 0.4 |
| Decision Processes of Late-Life Suicide | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2018 | 0.39 |
| Predictive modeling: the role of opioid use in suicide risk | KAISER FOUNDATION RESEARCH INSTITUTE | R01 | 2020 | 0.39 |
| Innovations in Suicide Prevention Research (INSPIRE) | UNIV OF NORTH CAROLINA CHAPEL HILL | R01 | 2020 | 0.38 |

**Cluster 19:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Automated quantitative CT imaging of epicardial adipose tissue and risk of cardiac events | CEDARS-SINAI MEDICAL CENTER | R01 | 2019 | 0.17 |
| Novel Non-Invasive Coronary Flow Patterning to Predict Early Coronary Microvascular Disease | RESEARCH INST NATIONWIDE CHILDREN'S HOSP | R21 | 2020 | 0.14 |
| Integrated prediction of cardiovascular events by automated coronary plaque and pericoronary adipose tissue quantification from CT Angiography | CEDARS-SINAI MEDICAL CENTER | R01 | 2020 | 0.12 |
| Machine Learning and Deformable Model-based 4D Characterization of Cardiac Dyssynchrony from MRI | RUTGERS, THE STATE UNIV OF N.J. | R01 | 2020 | 0.12 |
| Comprehensive Cardiac Structure-Function Analysis in Heart Transplantation | NORTHWESTERN UNIVERSITY AT CHICAGO | R01 | 2018 | 0.11 |

**Cluster 20:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Natural language processing for clinical and translational research | MAYO CLINIC ROCHESTER | R01 | 2016 | 0.14 |
| Annotation, development and evaluation for clinical information extraction | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R01 | 2013 | 0.13 |
| Annotation, development and evaluation for clinical information extraction (transfer) | BOSTON CHILDREN'S HOSPITAL | R01 | 2013 | 0.13 |
| CLAMP-CS: a Cloud-based, Service-oriented, high-performance Natural Language Processing Platform for Healthcare | MELAX TECHNOLOGIES, INC. | R44 | 2020 | 0.11 |
| Open Health Natural Language Processing Collaboratory | MAYO CLINIC ROCHESTER | U01 | 2020 | 0.11 |

**Cluster 21:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Automated Assessment of Neurodevelopment in Infants at Risk for Motor Disability | UNIVERSITY OF PENNSYLVANIA | R01 | 2020 | 0.15 |
| Predicting life-threatening events in CHIME infant data | CLARKSON UNIVERSITY | R03 | 2003 | 0.15 |
| A Longitudinal MRI Study Characterizing Very Early Brain Development in Infants with Down Syndrome | WASHINGTON UNIVERSITY | R01 | 2020 | 0.14 |
| The origin and significance of appearance-based stereotypes. | UNIVERSITY OF TEXAS, AUSTIN | R01 | 2014 | 0.13 |
| What you see is what you learn: Visual attention in statistical word learning | INDIANA UNIVERSITY BLOOMINGTON | R01 | 2019 | 0.12 |

**Cluster 22:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Computational genome-wide RNA profiling using next-generation sequencing | UNIVERSITY OF PENNSYLVANIA | R01 | 2016 | 0.33 |
| Discovery of Novel RNA Genes in Genomic DNA Sequences | UNIVERSITY OF CALIF-LAWRENC BERKELEY LAB | R01 | 2005 | 0.31 |
| Programmable RNA-targeting CRISPR-Cas tools to study RNA biology | UNIVERSITY OF ROCHESTER | R35 | 2020 | 0.3 |
| Defining the messenger RNP code in the brain | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R01 | 2016 | 0.3 |
| An Automated RNA 3D Structure Determination System | NYMIRUM, INC. | R44 | 2016 | 0.29 |

**Cluster 23:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Mid-frontal delta/theta rhythms and cognitive control in PD | UNIVERSITY OF IOWA | R01 | 2020 | 0.17 |
| Intrinsic Cortical Networks and Cognitive Dysfunction in Parkinson's Disease | UNIVERSITY OF COLORADO DENVER | K02 | 2017 | 0.16 |
| Intrinsic Cortical Networks and Cognitive Dysfunction in Parkinson???s Disease | UNIVERSITY OF COLORADO DENVER | K02 | 2014 | 0.16 |
| The Gut Microbiome in Parkinson Disease | UNIVERSITY OF MASSACHUSETTS LOWELL | R01 | 2019 | 0.15 |
| Reinforcement Learning for Closed-Loop Deep Brain Stimulation | UNIVERSITY OF MINNESOTA | F31 | 2019 | 0.15 |

**Cluster 24:**

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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 | 0.3 |
| Objectively Quantifying Speech Outcomes of Children with Cleft Palate | ARIZONA STATE UNIVERSITY-TEMPE CAMPUS | R21 | 2019 | 0.26 |
| Functional Architecture of Speech Motor Cortex | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | U01 | 2018 | 0.25 |
| Wearable silent speech technology to enhance impaired oral communication | UNIVERSITY OF TEXAS, AUSTIN | R01 | 2020 | 0.25 |
| Dynamics of Vocal Tract Shaping | UNIVERSITY OF SOUTHERN CALIFORNIA | R01 | 2020 | 0.25 |

**Cluster 25:**

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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 | 0.25 |
| A Noninvasive, Precision Medicine Approach to Improve Breast Cancer Screening Using Cell-free RNA from Saliva. | PRIME GENOMICS, INC. | R43 | 2019 | 0.25 |
| Informatics Techniques to Optimize Mammography for Aging Populations | UNIVERSITY OF WISCONSIN-MADISON | R01 | 2016 | 0.24 |
| Background parenchymal uptake (BPU) on molecular breast imaging as a novel breast cancer risk factor | MAYO CLINIC ROCHESTER | R21 | 2016 | 0.24 |
| Breast Cancer Risk Stratification with Resonant Electrical Impedance Spectroscopy | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R33 | 2010 | 0.23 |

**Cluster 26:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Voice2Connect: Informing the Design of Smart Speakers for Social Connectedness in Low-Income Older Adults | VIRGINIA COMMONWEALTH UNIVERSITY | R03 | 2020 | 0.046 |
| Sleep and Cardiometabolic Health Disparities at the US/Mexico Border: The Nogales Cardiometabolic Health and Sleep (NoCHeS) Study | UNIVERSITY OF ARIZONA | R01 | 2020 | 0.039 |
| A clinician-in-the-loop smart home to support health monitoring and intervention for chronic conditions: Supplement to focus on Alzheimer's and/or other dementias | WASHINGTON STATE UNIVERSITY | R01 | 2020 | 0.038 |
| A clinician-in-the-loop smart home to support health monitoring and intervention for chronic conditions | WASHINGTON STATE UNIVERSITY | R01 | 2020 | 0.037 |
| Sleep Health Profiles in Middle-aged Workers in Relation to Cardiovascular and Cognitive Health | UNIVERSITY OF SOUTH FLORIDA | R56 | 2020 | 0.035 |

**Cluster 27:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Advanced Heart Failure: Epidemiology and Outcomes | MAYO CLINIC ROCHESTER | R01 | 2020 | 0.25 |
| Transition from Risk Factors to Early HF: Prevalence, Pathogenesis, and Phenomics | WAKE FOREST UNIVERSITY HEALTH SCIENCES | R01 | 2018 | 0.25 |
| Early Diagnosis of Heart Failure: A Perioperative Data-Driven Approach | UNIVERSITY OF MICHIGAN AT ANN ARBOR | K01 | 2020 | 0.24 |
| Health Information Technology in Heart Failure Care | NEW YORK UNIVERSITY SCHOOL OF MEDICINE | K08 | 2017 | 0.22 |
| Genomic and Phenomic Architecture of Heart Failure | VANDERBILT UNIVERSITY MEDICAL CENTER | R01 | 2020 | 0.22 |

**Cluster 28:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Neural correlates of recovery from aphasia after acute stroke | VANDERBILT UNIVERSITY MEDICAL CENTER | R01 | 2018 | 0.13 |
| Neural Correlates of Recovery from Aphasia After Stroke | VANDERBILT UNIVERSITY MEDICAL CENTER | R01 | 2020 | 0.13 |
| Center for the Study of Aphasia Recovery (C-STAR) | UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA | P50 | 2020 | 0.1 |
| Contributions of spared brain structures and connections to aphasia recovery | GEORGETOWN UNIVERSITY | R01 | 2020 | 0.09 |
| Automated Assessment of Structural Changes & Functional Recovery Post Spinal Inju | UNIVERSITY OF FLORIDA | R01 | 2014 | 0.085 |

**Cluster 29:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Single Neuron Analyzer for Multi-modal, Cross-dataset (Epi)genomic Cell Type Datasets | UNIVERSITY OF CALIFORNIA, SAN DIEGO | RF1 | 2019 | 0.092 |
| Single Cell Transcriptomic and Genetic Diversity by Single Molecule Long Read Sequencing | UNIVERSITY OF PENNSYLVANIA | R01 | 2020 | 0.088 |
| Neuron and Glial Cellular Signatures from Normal and Diseased iPS Cells | UNIVERSITY OF CALIFORNIA-IRVINE | U54 | 2020 | 0.087 |
| Transfer learning approaches for integration of single cell RNA sequencing data from multiple sources | OHIO STATE UNIVERSITY | F31 | 2020 | 0.087 |
| Neuron and Glial Cellular Signatures from Normal and Diseased iPS Cells-Supplement | UNIVERSITY OF CALIFORNIA-IRVINE | U54 | 2018 | 0.085 |

**Cluster 30:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Systems Biology of Microbiome-mediated Resilience to Antibiotic-resistant Pathogens | SLOAN-KETTERING INST CAN RESEARCH | U01 | 2020 | 0.055 |
| Impact of Gastrointestinal Microbiome on the Host Response to an Effector-Memory T-Cell AIDS Vaccine and Multiple Low-Dose Challenge | NORTH CAROLINA STATE UNIVERSITY RALEIGH | R21 | 2016 | 0.051 |
| Identifying Risk Factors for Antibiotic Resistance via Integration of Epidemiology and Metagenomics | UNIVERSITY OF TX MD ANDERSON CAN CTR | K01 | 2020 | 0.048 |
| Combining chemical and computational tools for predictive models of microbiome communities | UNIVERSITY OF PENNSYLVANIA | R35 | 2020 | 0.048 |
| Comprehensive analysis of human adaptive immune receptors to elucidate correlates of Epstein-Barr virus disease suppression | UNIVERSITY OF KANSAS LAWRENCE | DP5 | 2020 | 0.047 |

**Cluster 31:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Intraocular Robotic Interventional Surgical System for Cataract Surgery Project | UNIVERSITY OF CALIFORNIA LOS ANGELES | R21 | 2015 | 0.022 |
| Automatic Counting System for Items Used in Surgery | ROBOTIC SURGICAL TECH, INC. | R43 | 2004 | 0.019 |
| Objective assessment of surgical competence in a septoplasty model | JOHNS HOPKINS UNIVERSITY | R01 | 2019 | 0.017 |
| Calculation of Percent Body Fat by Analyzing Virtual Body Models | GEORGE WASHINGTON UNIVERSITY | R21 | 2016 | 0.014 |
| Synchronized brain dynamics and eye movement trajectory for objective evaluation of robot-assisted surgical skills | ROSWELL PARK CANCER INSTITUTE CORP | R01 | 2020 | 0.012 |

**Cluster 32:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| The role of area V4 in the perception and recognition of visual objects | UNIVERSITY OF WASHINGTON | R01 | 2018 | 0.11 |
| CRCNS: Joint coding of shape and texture in the primate brian | UNIVERSITY OF WASHINGTON | R01 | 2020 | 0.1 |
| CRCNS: Neural Reprensentation of Hierarchical Visual Concepts in Natural Scenes | CARNEGIE-MELLON UNIVERSITY | R01 | 2014 | 0.098 |
| Perceptual bases of visual concepts | UNIVERSITY OF IOWA | R01 | 2010 | 0.097 |
| Towards cortical visual prosthetics | BOSTON CHILDREN'S HOSPITAL | R21 | 2010 | 0.094 |

**Cluster 33:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Transcriptomics of Tuberculosis Latency and Reactivation in Primates | TULANE UNIVERSITY OF LOUISIANA | R01 | 2013 | 0.47 |
| Mentoring in Immunometabolic Dysregulation in TB and TB/HIV | JOHNS HOPKINS UNIVERSITY | K24 | 2020 | 0.45 |
| Identifying individuals at risk of progression to active tuberculosis | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R01 | 2020 | 0.43 |
| Signature of profiling and staging the progression of TB from infection to disease. | BOSTON UNIVERSITY MEDICAL CAMPUS | R21 | 2020 | 0.42 |
| Discovering hidden groups across tuberculosis patient and pathogen genotype data | RENSSELAER POLYTECHNIC INSTITUTE | R01 | 2011 | 0.41 |

**Cluster 34:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Signals of Epigenetic Modification in Sjogrens Syndrome | UNIVERSITY OF CALIFORNIA BERKELEY | F31 | 2018 | 0.21 |
| MODELING DNA METHYLATION'S ROLE IN GENE REGULATION | WASHINGTON UNIVERSITY | R01 | 2018 | 0.21 |
| Identification of epigenetic subclones in lymphomas and leukemias | WASHINGTON UNIVERSITY | F30 | 2020 | 0.21 |
| Defining Genomic Signatures for Aberrant DNA Methylation in Human Cancers | EMORY UNIVERSITY | R01 | 2013 | 0.2 |
| Computational modeling of DNA methylation-mediated gene regulation | WASHINGTON UNIVERSITY | R01 | 2020 | 0.19 |

**Cluster 35:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Institutional Collaboration between LSTM and CDC and Prevention on Malaria(U01) | TMLIVERPOOL SCHOOL OF TROPICAL MEDICINE | U01 | 2015 | 0.47 |
| Institutional Research Collaboration between the Liverpool School of Tropical Medicine and the Centers for Department of Health and Human Services Centers for Disease Control and Prevention | TMLIVERPOOL SCHOOL OF TROPICAL MEDICINE | U01 | 2019 | 0.46 |
| Institutional Collaboration Between Liverpool STM & CDC on Malaria | TMLIVERPOOL SCHOOL OF TROPICAL MEDICINE | U01 | 2009 | 0.42 |
| Towards noninvasive diagnosis of malaria | CHILDREN'S HOSP OF PHILADELPHIA | R21 | 2020 | 0.4 |
| Malaria Operations Research to Improve Malaria Control and Reduce Morbidity and Mortality in Western Kenya | TMLIVERPOOL SCHOOL OF TROPICAL MEDICINE | U01 | 2020 | 0.39 |

**Cluster 36:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| fMRI-based Biomarkers for Multiple Components of Pain | UNIVERSITY OF COLORADO | R01 | 2017 | 0.36 |
| Central glutamate signaling in postoperative pain regulation - Renewal | NEW YORK UNIVERSITY SCHOOL OF MEDICINE | R01 | 2020 | 0.36 |
| Evaluation of Pain in Chronic Pancreatitis using the NAPS2 cohorts | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R21 | 2015 | 0.36 |
| Finding Good TEMporal PostOperative pain Signatures (TEMPOS) | UNIVERSITY OF FLORIDA | R01 | 2019 | 0.36 |
| Autonomous Pain Recognition in Non-Verbal and Critically Ill Patients | UNIVERSITY OF FLORIDA | R21 | 2020 | 0.35 |

**Cluster 37:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Characterizing mechanistic heterogeneity across ADHD and Autism | OREGON HEALTH & SCIENCE UNIVERSITY | R01 | 2018 | 0.33 |
| Neuroanatomical markers of persistence versus remission of ADHD | NEW JERSEY INSTITUTE OF TECHNOLOGY | R03 | 2017 | 0.32 |
| Neural Correlates of Familial and Non-familial ADHD | NEW JERSEY INSTITUTE OF TECHNOLOGY | R15 | 2019 | 0.29 |
| Dynamic Brain Mechanisms of Proactive and Reactive Control in Childhood ADHD | STANFORD UNIVERSITY | K01 | 2018 | 0.29 |
| Co-occurring ADHD in young children with ASD: Precursors, detection, neural signatures, and early treatment | DUKE UNIVERSITY | P50 | 2020 | 0.29 |

**Cluster 38:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| MobileEye OCR for the Visually Impaired | APPLIED MEDIA ANALYSIS, LLC | R43 | 2006 | 0.076 |
| Leveraging Maps and Computer Vision to Support Indoor Navigation for Blind Travelers | SMITH-KETTLEWELL EYE RESEARCH INSTITUTE | R01 | 2020 | 0.07 |
| Sign Finder: Computer Vision to Find and Read Signs | BLINDSIGHT CORPORATION | R44 | 2006 | 0.069 |
| Locating and Reading Informational Signs | UNIVERSITY OF CALIFORNIA LOS ANGELES | R01 | 2004 | 0.061 |
| SIGN FINDER: COMPUTER VISION TO FIND AND READ SIGNS | BLINDSIGHT CORPORATION | R43 | 2000 | 0.06 |

**Cluster 39:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| The role of memory reactivation in emotional memory suppression and regulation | PRINCETON UNIVERSITY | F99 | 2020 | 0.02 |
| Dynamics of Large-Scale Networks During Emotional and Social Processing | UNIV OF MARYLAND, COLLEGE PARK | R01 | 2020 | 0.019 |
| Delineating proactive social behaviors in dynamic and multidimensional social space | ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI | R21 | 2020 | 0.019 |
| The Molecular Underpinnings of Complex Social Behavior | ROCKEFELLER UNIVERSITY | R35 | 2020 | 0.018 |
| Memory precision and generalization: aging effects on the cognitive and neural basis of adaptive memory function | UNIVERSITY OF OREGON | F32 | 2019 | 0.017 |

**Cluster 40:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Multi-modal and Extreme PET/MRI Reconstruction Methods | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | F32 | 2020 | 0.086 |
| Real-Time MRI Motion Correction System | STANFORD UNIVERSITY | R01 | 2013 | 0.078 |
| Quantitative Low-Dose PET Imaging | YALE UNIVERSITY | R01 | 2020 | 0.076 |
| Reconstruction Hardware for Real-Time Moving Tabel MRI | MAYO CLINIC | R33 | 2005 | 0.074 |
| Reconstruction Hardware for Real-Time Moving Table MRI | MAYO CLINIC | R33 | 2004 | 0.074 |

**Cluster 41:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Genome-Wide Association Analysis of Bladder Cancer | UNIVERSITY OF TX MD ANDERSON CAN CTR | U01 | 2012 | 0.15 |
| Machine Learning Prediction of Cancer Susceptibility | UNIVERSITY OF PENNSYLVANIA | R01 | 2014 | 0.13 |
| Machine learning to identify predictive SNPs and complex interaction effects | VIRGINIA POLYTECHNIC INST AND ST UNIV | R21 | 2010 | 0.13 |
| International Case Control Study of Malignant Glioma | BAYLOR COLLEGE OF MEDICINE | R01 | 2015 | 0.12 |
| Machine Learning to Identify Complex Interactions in Genome-Wide Association Data | WAKE FOREST UNIVERSITY HEALTH SCIENCES | R01 | 2009 | 0.1 |

**Cluster 42:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Protege: A Knowledge-Engineering Environment for Advancing Biomedical Sciences | STANFORD UNIVERSITY | R01 | 2020 | 0.2 |
| Protege: An Ontology-Development Platform for Biomedical Scientists | STANFORD UNIVERSITY | R01 | 2016 | 0.18 |
| Automated Integration of Biomedical Knowledge | BRIGHAM AND WOMEN'S HOSPITAL | R01 | 2010 | 0.18 |
| Ontologies and Biomedical Language Processing | UNIVERSITY OF COLORADO DENVER | R01 | 2010 | 0.18 |
| Collaborative Development of Biomedical Ontologies and Terminologies | STANFORD UNIVERSITY | R01 | 2016 | 0.16 |

**Cluster 43:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Classification Algorithms for Chemical Compounds | UNIVERSITY OF MINNESOTA | R01 | 2008 | 0.043 |
| Small Molecule Probes to Investigate Structure and Function of Y Receptors | VANDERBILT UNIVERSITY | R01 | 2015 | 0.04 |
| Pacific Northwest Advanced Compound Identification Core | BATTELLE PACIFIC NORTHWEST LABORATORIES | U2C | 2020 | 0.038 |
| West Coast Metabolomics Center for Compound Identification | UNIVERSITY OF CALIFORNIA AT DAVIS | U2C | 2020 | 0.037 |
| Automated Molecular Identity Disambiguator (AutoMID) | UNIVERSITY OF MIAMI SCHOOL OF MEDICINE | R01 | 2020 | 0.028 |

**Cluster 44:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Detection of Glaucoma Progression with Macular OCT Imaging | UNIVERSITY OF CALIFORNIA LOS ANGELES | K23 | 2016 | 0.43 |
| Functional and Structural Optical Coherence Tomography for Glaucoma | OREGON HEALTH & SCIENCE UNIVERSITY | R01 | 2020 | 0.42 |
| Relationship between Glaucoma and the Three-Dimensional Optic Nerve Head Related Structure | SCHEPENS EYE RESEARCH INSTITUTE | K99 | 2020 | 0.37 |
| A hybrid artificial intelligence framework for glaucoma monitoring | UNIVERSITY OF TENNESSEE HEALTH SCI CTR | R21 | 2020 | 0.37 |
| Diagnostic Innovations in Glaucoma: Clinical Electrophysiology | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R21 | 2008 | 0.36 |

**Cluster 45:**

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| --- | --- | --- | --- | --- |
| 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 | 0.25 |
| Big Data Analysis of HIV Risk and Epidemiology in Sub-Saharan Africa | STANFORD UNIVERSITY | R01 | 2020 | 0.24 |
| Developing an artificial intelligence-based mHealth intervention to increase HIV testing in Malaysia | YALE UNIVERSITY | R21 | 2020 | 0.24 |
| Developing an Artificial Intelligence Chatbot to Promote HIV Testing | YALE UNIVERSITY | R21 | 2020 | 0.23 |
| Mining real-time social media big data to monitor HIV: Development and Ethical Issues | UNIVERSITY OF CALIFORNIA-IRVINE | R01 | 2020 | 0.22 |

**Cluster 46:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| From enrichment to insights | STANFORD UNIVERSITY | R01 | 2020 | 0.095 |
| Biases introduced by filtering electronic health records for patients with "complete data" | HARVARD MEDICAL SCHOOL | R01 | 2020 | 0.079 |
| National Infrastructure for Standardized and Portable EHR Phenotyping Algorithms | WEILL MEDICAL COLL OF CORNELL UNIV | R01 | 2020 | 0.078 |
| Semi-supervised Algorithms for Risk Assessment with Noisy EHR Data | HARVARD SCHOOL OF PUBLIC HEALTH | R21 | 2020 | 0.077 |
| Automating Delirium Identification and Risk Prediction in Electronic Health Records | UNIVERSITY OF ALABAMA AT BIRMINGHAM | R01 | 2020 | 0.074 |

**Cluster 47:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Quantitative Methods for Neuroimaging Studies of Interventions in Aging | UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN | K25 | 2015 | 0.08 |
| Methods for Dynamic Causal Interactions in Human Brain Function and Dysfunction | STANFORD UNIVERSITY | R01 | 2018 | 0.074 |
| Integrative Bioinformatics Approaches to Human Brain Genomics and Connectomics | UNIVERSITY OF PENNSYLVANIA | R01 | 2019 | 0.071 |
| Bayesian Methods for Localizing Dynamic Brain Activity and Epileptogenic Zones | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | F32 | 2011 | 0.067 |
| Enabling Shared Analysis and Processing of Large Neurophysiology Data | KITWARE, INC. | R44 | 2018 | 0.063 |

**Cluster 48:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Sleep apnea after stroke: Implications for screening and treatment | UNIVERSITY OF MICHIGAN AT ANN ARBOR | R01 | 2019 | 0.28 |
| Biomarker panel to differentiate stroke from stroke mimic | PREDICTION SCIENCES, LLC | R43 | 2008 | 0.27 |
| Whole Transcriptome Studies of Patients with Transient Ischemic Attacks (TIAs) | UNIVERSITY OF CALIFORNIA AT DAVIS | R01 | 2020 | 0.27 |
| Whole Genome RNA Sequencing (RNAseq) of Blood from Patients with Lacunar Stroke | UNIVERSITY OF CALIFORNIA AT DAVIS | R01 | 2020 | 0.26 |
| Fast and Easy Assessment of Stroke | ALVA HEALTH, INC. | R43 | 2019 | 0.26 |

**Cluster 49:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Statistical approaches to linguistic pattern learning | GEORGETOWN UNIVERSITY | R01 | 2019 | 0.18 |
| Neurocognitive determinants of adolescent second language literacy development | HASKINS LABORATORIES, INC. | R01 | 2015 | 0.18 |
| Identification of treatment parameters that maximize language treatment efficacy for children. | UNIVERSITY OF ARIZONA | R01 | 2019 | 0.18 |
| Early Language Intervention via the Internet | LAUREATE LEARNING SYSTEMS, INC. | R44 | 2004 | 0.18 |
| Distributional Learning in Children with Language Impairment | UNIVERSITY OF IOWA | F31 | 2017 | 0.18 |

**Cluster 50:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| An Integrative Approach to Drug Repositioning Using Decision Tree Based Machine Learning | WEILL MEDICAL COLL OF CORNELL UNIV | F31 | 2020 | 0.16 |
| A systems analysis of drug tolerance in Mycobacterium tuberculosis | INSTITUTE FOR SYSTEMS BIOLOGY | R01 | 2020 | 0.15 |
| Novel computational approaches to predict drug response and combination effects | UT SOUTHWESTERN MEDICAL CENTER | R35 | 2020 | 0.13 |
| An integrative multi-phenotype pipeline for drug evaluation, pharmacogenomics, and attribute prediction | PHENVOGEN, LLC | R41 | 2017 | 0.12 |
| Omics data integration and analysis for structure-based multi-target drug design | HUNTER COLLEGE | R01 | 2020 | 0.11 |

**Cluster 51:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Multi-omic Subtyping of Chronic Obstructive Pulmonary Disease | BRIGHAM AND WOMEN'S HOSPITAL | K08 | 2020 | 0.043 |
| Developing and validating prognostic metabolomic signatures of diabetic kidney disease | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R01 | 2020 | 0.039 |
| Prediction of COPD Progression by PRM | UNIVERSITY OF MICHIGAN AT ANN ARBOR | R01 | 2020 | 0.037 |
| Clinical significance and genetic determinants of novel imaging measures of emphysema distribution in 9,743 smokers | BRIGHAM AND WOMEN'S HOSPITAL | K08 | 2020 | 0.036 |
| Autoimmunity as a Mechanism for Atherosclerosis in COPD | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | K23 | 2019 | 0.035 |

**Cluster 52:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Using Big Data to Understand Sepsis in an Immunocompromised Population | UNIVERSITY OF WASHINGTON | F31 | 2020 | 0.35 |
| Enhancing an EMR-Based Real-Time Sepsis Alert System Performance through Machine Learning | WAYNE STATE UNIVERSITY | R21 | 2017 | 0.33 |
| Sepsis Early Prediction and Subphenotype Illumination Study (SEPSIS) | UNIVERSITY OF CHICAGO | R01 | 2019 | 0.33 |
| Sepsis Early Prediction and Subphenotype Illumination Study (SEPSIS) | UNIVERSITY OF WISCONSIN-MADISON | R01 | 2020 | 0.33 |
| A precision medicine framework to improve long-term outcomes in Sepsis Survivors | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | K23 | 2020 | 0.3 |

**Cluster 53:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Histopathology correlated quantitative analysis of lung nodules with LDCT for early detection of lung cancer | UNIVERSITY OF MICHIGAN AT ANN ARBOR | U01 | 2020 | 0.25 |
| Macro-vasculature: A Novel Image Biomarker of Lung Cance | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2020 | 0.24 |
| A diagnostic model for malignant pulmonary nodules | UNIVERSITY OF MARYLAND BALTIMORE | R21 | 2020 | 0.23 |
| Lung cancer in East Africa and the relationship to HIV-1 infection: epidemiology, molecular characterization and imaging | CASE WESTERN RESERVE UNIVERSITY | U54 | 2020 | 0.22 |
| EARLY DETECTION OF LUNG CANCER USING METABOLOMIC LIPID PROFILING | RUSH UNIVERSITY MEDICAL CENTER | R21 | 2014 | 0.22 |

**Cluster 54:**

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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 | 0.086 |
| Integrative Cancer Genomics: Drivers, Pathways and Drugs | COLUMBIA UNIV NEW YORK MORNINGSIDE | R01 | 2016 | 0.078 |
| A Federated Galaxy for user-friendly large-scale cancer genomics research | OREGON HEALTH & SCIENCE UNIVERSITY | U24 | 2020 | 0.072 |
| MICRORNA BIOMARKERS FOR OROPHARYNGEAL CANCER | UNIVERSITY OF ILLINOIS AT CHICAGO | R01 | 2020 | 0.068 |
| Predicting Transcriptional and Epigenetic Networks in Cancer from Sequencing Data | UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN | R01 | 2020 | 0.068 |

**Cluster 55:**

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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 | 0.06 |
| An Olfactory Method for Controlling Cigarette Craving | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2017 | 0.055 |
| An Olfactory Method for Controlling Cigarette Craving - Supplement | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2015 | 0.055 |
| Eliminating Tobacco-Related Disparities amount African American Smokers | UNIVERSITY OF UTAH | R01 | 2020 | 0.053 |
| Eliminating Tobacco-Related Disparities among African American Smokers | RICE UNIVERSITY | R01 | 2016 | 0.053 |

**Cluster 56:**

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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 | 0.19 |
| Quantitative Multimodal Image Guidance for Improved Liver Cancer Treatment | YALE UNIVERSITY | R01 | 2020 | 0.14 |
| MDCT Quantification of hepatic tumor viability for assessment of cancer therapy | IQ MEDICAL IMAGING, LLC | R42 | 2019 | 0.14 |
| Automatic Volumetric Treatment Response Assessment and Determination of Regional Genetic Characteristics in Glioblastoma | HARVARD MEDICAL SCHOOL | F30 | 2020 | 0.14 |
| Engineering personalized micro-tumor ecosystems | BRIGHAM AND WOMEN'S HOSPITAL | U01 | 2020 | 0.13 |

**Cluster 57:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| ABCD-USA Consortium: Research Project | UNIVERSITY OF CALIFORNIA, SAN DIEGO | U01 | 2019 | 0.29 |
| ABCD-USA Consortium:Research Project | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | U01 | 2019 | 0.24 |
| Using Machine Learning Approaches to Examine Emotion-Related Brain Activity and Substance Use Among Adolescents | GEORGE MASON UNIVERSITY | F31 | 2020 | 0.22 |
| Predicting Substance Use and Related Antisocial Behavior with Psychiatric, Socioeconomic, and Brain Measures in Women Offenders | UNIVERSITY OF NEW MEXICO | F31 | 2020 | 0.21 |
| ABCD-USA Consortium: Data Analysis Center | UNIVERSITY OF CALIFORNIA, SAN DIEGO | U24 | 2019 | 0.19 |

**Cluster 58:**

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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 | 0.43 |
| Asthma ascertainment and characterization through electronic health records | MAYO CLINIC ROCHESTER | R01 | 2017 | 0.42 |
| Multi-Omics Analysis of the Association of Polyunsaturated Fatty Acids with Asthma and Allergy in Childhood | BRIGHAM AND WOMEN'S HOSPITAL | K08 | 2020 | 0.37 |
| Multifactorial spatiotemporal analyses to evaluate environmental triggers and patient-level clinical characteristics of severe asthma exacerbations in children | DUKE UNIVERSITY | R21 | 2020 | 0.37 |
| OBJECTIVE HOME MANAGEMENT OF PEDIATRIC ASTHMA EXACERBATION USING MOBILE TECHNOLOGY AND MACHINE LEARNING | AUSCULTECH DX, LLC | R41 | 2020 | 0.36 |

**Cluster 59:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Optimizing long-term post-polypectomy surveillance for colorectal cancer prevention using a prediction rule developed from a large, community-based cohort | KAISER FOUNDATION RESEARCH INSTITUTE | K07 | 2020 | 0.35 |
| Patient-Centered Comparative Effectiveness of Colorectal Cancer Surveillance in IBD | BAYLOR COLLEGE OF MEDICINE | K08 | 2019 | 0.33 |
| Comprehensive Colorectal Cancer Risk Prediction to Inform Personalized Screening | FRED HUTCHINSON CANCER RESEARCH CENTER | R01 | 2020 | 0.32 |
| Integrated Genomic Discovery and Functional Validation of Colorectal Cancer Loci | STANFORD UNIVERSITY | U01 | 2015 | 0.31 |
| Identifying Receipt of Colorectal Cancer Screening | VANDERBILT UNIVERSITY | R21 | 2008 | 0.3 |