**Cluster 0:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Validating Machine-Learned Classifiers of Sedentary Behavior and Physical Activit | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R01 | 2015 | 0.048 |
| Enabling Population-Scale Physical Activity Measurement on Common Mobile Phones | MASSACHUSETTS INSTITUTE OF TECHNOLOGY | U01 | 2010 | 0.036 |
| Sensor-based Just-in Time Adaptive Interventions (JITAIs) Targeting Eating Behavior | UNIVERSITY OF ALABAMA IN TUSCALOOSA | R01 | 2020 | 0.034 |
| Real-Time Mobile Cognitive Behavioral Intervention for Serious Mental Illness | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R01 | 2016 | 0.029 |
| Leveraging Artificial Intelligence for the assessment of severity of depressive symptoms | MASSACHUSETTS GENERAL HOSPITAL | R01 | 2020 | 0.028 |

**Cluster 1:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Personalized Statin Treatment Plan to Optimize Clinical Outcomes Using Big Data | UNIVERSITY OF MINNESOTA | R01 | 2020 | 0.04 |
| Identifying Electronic Phenotypes associated with Patient Health Outcomes of Interhospital Transfer Patients | CASE WESTERN RESERVE UNIVERSITY | R15 | 2018 | 0.038 |
| Modernizing Emergency Department Nurse Triage via Big Data Analytics | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | F31 | 2020 | 0.035 |
| Secure Homomorphically Encrypted National Registry of COVID-19 Recovered Plasma Donors | ELIMU INFORMATICS, INC. | R41 | 2020 | 0.031 |
| Predicting Urinary Continence Status with Sacral Neuromodulation and Botulinum Toxin Treatments | DUKE UNIVERSITY | K01 | 2020 | 0.031 |

**Cluster 2:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 | 0.36 |
| 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 | 0.35 |
| Quantitative diagnosis of TB/HIV co-infection using pathogen-specific exosomes in blood | ARIZONA STATE UNIVERSITY-TEMPE CAMPUS | R03 | 2018 | 0.35 |
| 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 3:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Towards the automation of MR spectroscopic imaging in patients with glioblashoma | EMORY UNIVERSITY | F30 | 2020 | 0.095 |
| Development of automated web-based spectroscopic MRI clinical interface | EMORY UNIVERSITY | R21 | 2017 | 0.085 |
| Quantitative (Perfusion and Diffusion) MRI Biomarkers to Measure Glioma Response | MEDICAL COLLEGE OF WISCONSIN | U01 | 2020 | 0.081 |
| Quantitative Image Modeling for Brain Tumor Analysis and Tracking | OLD DOMINION UNIVERSITY | R01 | 2019 | 0.076 |
| Integration of endoscopic and CT data for radiation therapy treatment planning | UNIV OF NORTH CAROLINA CHAPEL HILL | R01 | 2018 | 0.074 |

**Cluster 4:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Computerized Radiographic Analysis of Bone Structure | UNIVERSITY OF CHICAGO | R01 | 2005 | 0.39 |
| MACE - Michigan Alliance for Cheminformatic Exploration | UNIVERSITY OF MICHIGAN | P20 | 2007 | 0.36 |
| FOUNDATION MODEL OF ANATOMY | UNIVERSITY OF WASHINGTON | R01 | 2002 | 0.29 |
| INTELLIGENT CRITIQUING OF CLINICAL-GUIDELINE APPLICATION | STANFORD UNIVERSITY | R01 | 2000 | 0.28 |
| VOICE RESPONSE/INTERNET REGISTRATION & RANDOMIZATION | RHO FEDERAL SYSTEMS DIVISION, INC. | R44 | 2002 | 0.28 |

**Cluster 5:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Metal binding sites in macromolecular structures | UNIVERSITY OF VIRGINIA | R01 | 2019 | 0.067 |
| Computational tools for T- and B-cell epitope prediction | UNIVERSITY OF TEXAS MED BR GALVESTON | R01 | 2010 | 0.041 |
| Annotating Functional Sites in 3D Biological Structures | STANFORD UNIVERSITY | R01 | 2013 | 0.038 |
| Binding-Site Modeling with Multiple-Instance Machine-Learning | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | R01 | 2020 | 0.034 |
| 2007 Small Intergin Binding Proteins Gordon Research Conference | GORDON RESEARCH CONFERENCES | R13 | 2007 | 0.034 |

**Cluster 6:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Evaluating Longitudinal Changes in the Human Structural Connectome in Relation to Cognitive Aging | UNIVERSITY OF TEXAS, AUSTIN | R01 | 2020 | 0.13 |
| Neural substrates of diffusion imaging in cognitively aging rhesus monkeys | BRIGHAM AND WOMEN'S HOSPITAL | R01 | 2020 | 0.11 |
| Systems Immunology in Aging and Chronic Diseases of Aging | JACKSON LABORATORY | R13 | 2020 | 0.088 |
| Systems Biology of Aging: Data-science meets Gero-science | JACKSON LABORATORY | R13 | 2019 | 0.086 |
| A Strength Analysis Tool for Studying Healthy Aging via Exercise in C. elegans | TEXAS TECH UNIVERSITY | R21 | 2016 | 0.078 |

**Cluster 7:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Computational methods for modeling lineage-specific gene regulation | STANFORD UNIVERSITY | R01 | 2016 | 0.13 |
| Genomic Reconstruction of Yeast Transcription Networks | UNIVERSITY OF CALIFORNIA SAN FRANCISCO | R01 | 2006 | 0.1 |
| Locating Regulatory Elements in Genomes | RUTGERS, THE STATE UNIV OF N.J. | R01 | 2008 | 0.096 |
| CHARTING THE EPIGENOMIC LANDSCAPE OF HUMAN TRANSPOSABLE ELEMENTS | WASHINGTON UNIVERSITY | R01 | 2015 | 0.09 |
| Surveying transcription factor pioneer interactions with nucleosomal DNA | BRIGHAM AND WOMEN'S HOSPITAL | R21 | 2018 | 0.087 |

**Cluster 8:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Open Health Natural Language Processing Collaboratory | MAYO CLINIC ROCHESTER | U01 | 2020 | 0.14 |
| Natural language processing for clinical and translational research | MAYO CLINIC ROCHESTER | R01 | 2016 | 0.12 |
| Annotation, development and evaluation for clinical information extraction | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R01 | 2013 | 0.11 |
| Annotation, development and evaluation for clinical information extraction (transfer) | BOSTON CHILDREN'S HOSPITAL | R01 | 2013 | 0.11 |
| Investigating the generalizability of natural language processing of EMR data | KAISER FOUNDATION RESEARCH INSTITUTE | R21 | 2009 | 0.11 |

**Cluster 9:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Novel Platform for Quantitative Subcellular Resolution Imaging of Human Tissues Using Mass Spectrometry | PURDUE UNIVERSITY | UH3 | 2020 | 0.085 |
| Groundwork for a Synchrotron MicroCT Imaging Resource for Biology (SMIRB) | PENNSYLVANIA STATE UNIV HERSHEY MED CTR | R24 | 2020 | 0.077 |
| Large-Scale Reconstruction of Microvascular Networks and the Surrounding Cellular | UNIVERSITY OF HOUSTON | R00 | 2016 | 0.075 |
| High-definition, wide field of view corneal imaging | LIGHTOPTECH CORPORATION | R44 | 2020 | 0.074 |
| A robust platform for multiplexed, subcellular proteomic imaging in human tissue | STANFORD UNIVERSITY | UH3 | 2020 | 0.073 |

**Cluster 10:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 | 0.25 |
| Genetic & epigenetic analysis of angiogenesis genes in recurrent prostate cancer | H. LEE MOFFITT CANCER CTR & RES INST | R01 | 2012 | 0.25 |
| MRI Imaging and Biomarkers for Early Detection of Aggressive Prostate Cancer | UNIVERSITY OF MIAMI SCHOOL OF MEDICINE | U01 | 2020 | 0.24 |
| CLINICAL AND EPIDEMIOLOGICAL CENTER--PROSTATE CANCER | JOHNS HOPKINS UNIVERSITY | U01 | 2004 | 0.24 |
| High speed automated intraoperative microscopy of the prostate circumference to ensure tumor-free margins in radical prostatectomy | TULANE UNIVERSITY OF LOUISIANA | R01 | 2020 | 0.23 |

**Cluster 11:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| A Multisite Neurobehavioral Assessment of Fetal Alcohol Spectrum Disorders | SAN DIEGO STATE UNIVERSITY | U01 | 2020 | 0.3 |
| : Complex systems analysis of the impact of alcohol on bone in non-human primates | OREGON STATE UNIVERSITY | R01 | 2020 | 0.29 |
| Alcohol consumption monitoring via a power-free wearable biosensor | LOGICINK CORPORATION | R43 | 2018 | 0.29 |
| Ambulatory assessment of alcohol use, mood dysregulation, and alcohol craving | UNIVERSITY OF MISSOURI-COLUMBIA | R21 | 2014 | 0.28 |
| Alcohol Use: Nonlinearities in Intraindividual Variables | UNIVERSITY OF SOUTHERN CALIFORNIA | F31 | 2005 | 0.27 |

**Cluster 12:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| The CSBC Research Center for Cancer Systems Immunology at MSKCC | SLOAN-KETTERING INST CAN RESEARCH | U54 | 2020 | 0.081 |
| Integrated Discovery Pipeline for Tumor Neoantigens | UNIVERSITY OF PENNSYLVANIA | R01 | 2020 | 0.079 |
| UCSC-Buck Specialized Genomic Data Analysis Center for the Genomic Data Analysis Network | UNIVERSITY OF CALIFORNIA SANTA CRUZ | U24 | 2020 | 0.076 |
| Systems Biology of Tumor Progression and Drug Resistance | COLUMBIA UNIVERSITY HEALTH SCIENCES | U01 | 2016 | 0.071 |
| Harnessing protease activity for predictive monitoring of cancer immunotherapy | GEORGIA INSTITUTE OF TECHNOLOGY | R01 | 2020 | 0.063 |

**Cluster 13:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Integrating epidemiologic and environmental approaches to understand and predict Coccidioides exposure and coccidioidomycosis emergence | UNIVERSITY OF CALIFORNIA BERKELEY | R01 | 2020 | 0.017 |
| Decoding the microbial burden in diabetic foot ulcers | UNIVERSITY OF PENNSYLVANIA | R01 | 2020 | 0.016 |
| Identifying Risk Factors for Antibiotic Resistance via Integration of Epidemiology and Metagenomics | UNIVERSITY OF TX MD ANDERSON CAN CTR | K01 | 2020 | 0.016 |
| ChartGlucose4Moms: Characterizing, by Trimester, Continuous Glucose Monitoring Measurements for determining effects on Maternal & Offspring Metabolic Sequelae | KAISER FOUNDATION RESEARCH INSTITUTE | U01 | 2020 | 0.015 |
| A preconception cohort study of environmental chemicals, fertility, and miscarriage | BOSTON UNIVERSITY MEDICAL CAMPUS | R01 | 2020 | 0.015 |

**Cluster 14:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 |
| A Multimodal Approach for Monitoring Prolonged Acute Pain in Neonates | UNIVERSITY OF SOUTH FLORIDA | R21 | 2020 | 0.4 |
| Autonomous Pain Recognition in Non-Verbal and Critically Ill Patients | UNIVERSITY OF FLORIDA | R21 | 2020 | 0.4 |
| Evaluation of Pain in Chronic Pancreatitis using the NAPS2 cohorts | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R21 | 2015 | 0.4 |
| Central glutamate signaling in postoperative pain regulation - Renewal | NEW YORK UNIVERSITY SCHOOL OF MEDICINE | R01 | 2020 | 0.39 |

**Cluster 15:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 | 0.16 |
| Ontology-Driven Methods for Knowledge Acquisition and Knowledge Discovery | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2014 | 0.13 |
| Developing and applying information extraction resources and technology to create | UNIVERSITY OF COLORADO DENVER | R01 | 2017 | 0.12 |
| Adaptive Information Monitoring and Extraction | UNIVERSITY OF WISCONSIN-MADISON | R01 | 2009 | 0.12 |
| Automated Knowledge Extraction for Biomedical Literature | BRANDEIS UNIVERSITY | R01 | 2006 | 0.12 |

**Cluster 16:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 |
| Neural Circuit Mechanisms of Social Homeostasis in Individuals and Supraorganismal Social Groups | SALK INSTITUTE FOR BIOLOGICAL STUDIES | DP1 | 2020 | 0.17 |
| BIGDATA: Small DA Social Behavior Driven Modeling and Optimization of Information | GEORGIA INSTITUTE OF TECHNOLOGY | R01 | 2015 | 0.17 |
| The Molecular Underpinnings of Complex Social Behavior | ROCKEFELLER UNIVERSITY | R35 | 2020 | 0.17 |

**Cluster 17:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 | 0.26 |
| Novel video-based approaches for detection of autism risk in the first year of life | UNIVERSITY OF CALIFORNIA AT DAVIS | R01 | 2020 | 0.25 |
| Co-occurring ADHD in young children with ASD: Precursors, detection, neural signatures, and early treatment | DUKE UNIVERSITY | P50 | 2020 | 0.24 |
| Adapting Biomarker Assays for Individuals with Autism and Intellectual Disability | YALE UNIVERSITY | R21 | 2020 | 0.24 |

**Cluster 18:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Building a classroom game economy to improve mathematical reasoning and prepare K-5 students for success in STEM learning | TEACHLEY, LLC | R44 | 2020 | 0.086 |
| Deep Fractions Learning: A Core Curriculum of Games, Inquiry, and Collaboration | TEACHLEY, LLC | R44 | 2019 | 0.086 |
| A Novel Pregnancy Prevention Intervention for Latino Middle School Girls | UNIVERSITY OF MIAMI CORAL GABLES | R01 | 2018 | 0.081 |
| An interactive, digital platform to transform biological learning | SQUID BOOKS, LLC | R44 | 2020 | 0.076 |
| Artificial Intelligence in a Mobile Intervention for Depression (AIM) | NORTHWESTERN UNIVERSITY AT CHICAGO | R01 | 2017 | 0.075 |

**Cluster 19:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Programmable RNA-targeting CRISPR-Cas tools to study RNA biology | UNIVERSITY OF ROCHESTER | R35 | 2020 | 0.3 |
| The next generation of RNA-Seq simulators for benchmarking analyses | UNIVERSITY OF PENNSYLVANIA | R21 | 2019 | 0.27 |
| New methods for computational modeling of RNA structures | UNIVERSITY OF MISSOURI-COLUMBIA | R35 | 2020 | 0.26 |
| Defining the messenger RNP code in the brain | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R01 | 2016 | 0.25 |
| Computational genome-wide RNA profiling using next-generation sequencing | UNIVERSITY OF PENNSYLVANIA | R01 | 2016 | 0.23 |

**Cluster 20:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| CRCNS: Learning the Neural Code for Prosthetic Control | BROWN UNIVERSITY | R01 | 2006 | 0.093 |
| Exploring thalamocortical neural state space for adaptive closed-loop deep brain stimulation of epileptic networks. | STANFORD UNIVERSITY | F31 | 2019 | 0.08 |
| STATISTICAL MODELING OF NEURAL INFORMATION ENCODING | MASSACHUSETTS GENERAL HOSPITAL | K02 | 2003 | 0.078 |
| Advancing understanding of neural representations of threat perception through a novel predictive coding framework | NORTHEASTERN UNIVERSITY | F32 | 2020 | 0.076 |
| A Comparative Framework for Modeling the Low-Dimensional Geometry of Neural Population States | GEORGIA INSTITUTE OF TECHNOLOGY | R01 | 2020 | 0.075 |

**Cluster 21:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Defining cell types, lineage, and connectivity in developing human fetal cortex | UNIVERSITY OF CALIFORNIA LOS ANGELES | U01 | 2016 | 0.13 |
| Cell line identification with DNA replication timing fingerprints | INSILICOM, LLC | R43 | 2019 | 0.13 |
| Single Cell Transcriptomic and Genetic Diversity by Single Molecule Long Read Sequencing | UNIVERSITY OF PENNSYLVANIA | R01 | 2020 | 0.13 |
| Single-cell multi-protein device for informative cellular function evaluation | ISOPLEXIS, INC. | R43 | 2016 | 0.13 |
| High-throughput technology for automated single cell expression analysis for C. e | STANFORD UNIVERSITY | RC1 | 2010 | 0.12 |

**Cluster 22:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Towards cortical visual prosthetics | BOSTON CHILDREN'S HOSPITAL | R21 | 2010 | 0.2 |
| Cue Reliability and Depth Calibration During Space Perception | STATE COLLEGE OF OPTOMETRY | R01 | 2011 | 0.18 |
| A Visual Assessment System for Retinal Function/Drug Discovery | AFASCI, INC. | R41 | 2015 | 0.16 |
| Perceptual bases of visual concepts | UNIVERSITY OF IOWA | R01 | 2010 | 0.16 |
| The nGoggle: A portable brain-based device for assessment of visual function deficits | NGOGGLE, INC. | R42 | 2019 | 0.14 |

**Cluster 23:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Motion Robust Mapping of Human Brain Functional Connectivity Changes in Utero | UNIVERSITY OF WASHINGTON | R01 | 2016 | 0.086 |
| Enabling Shared Analysis and Processing of Large Neurophysiology Data | KITWARE, INC. | R44 | 2018 | 0.085 |
| Longitudinal brain development and clinical outcomes in ADHD from 7-17 years | OREGON HEALTH & SCIENCE UNIVERSITY | R56 | 2016 | 0.084 |
| A BRAIN Initiative Resource: The Neuroscience Multi-omic Data Archive | UNIVERSITY OF MARYLAND BALTIMORE | R24 | 2020 | 0.083 |
| EEGLAB: Software for Analysis of Human Brain Dynamics | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R01 | 2020 | 0.08 |

**Cluster 24:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Nasal biomarkers of asthma | ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI | R01 | 2019 | 0.41 |
| Asthma ascertainment and characterization through electronic health records | MAYO CLINIC ROCHESTER | R01 | 2017 | 0.39 |
| 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 | 0.36 |
| SCH: kHealth: Semantic Multisensory Mobile Approach to Personalized Asthma Care | WRIGHT STATE UNIVERSITY | R01 | 2018 | 0.35 |

**Cluster 25:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 | 0.43 |
| Cardiovascular implications of sleep characteristics using real-world objective sleep data | UNIVERSITY OF WASHINGTON | R21 | 2020 | 0.42 |
| Enhanced Measurement and Modeling of Sleep Electrophysiology to Better Understand Sleep Disparities | BRIGHAM AND WOMEN'S HOSPITAL | R21 | 2020 | 0.4 |
| 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 | 0.4 |
| Sleep Health Profiles in Middle-aged Workers in Relation to Cardiovascular and Cognitive Health | UNIVERSITY OF SOUTH FLORIDA | R56 | 2020 | 0.39 |

**Cluster 26:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Digital Mammography: Advanced Computer-Aided Breast Can\* | UNIVERSITY OF MICHIGAN | R01 | 2007 | 0.36 |
| Improving Breast Cancer Detection and Diagnosis with CAD | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2011 | 0.35 |
| Digital Tomosynthesis Mammography: Computer-Aided Analysis of Masses | UNIVERSITY OF MICHIGAN AT ANN ARBOR | R33 | 2009 | 0.32 |
| Toward Diagnostics and Therapies of Molecular Subcategories of CAD | ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI | R01 | 2018 | 0.31 |
| COMPUTER AIDED DIAGNOSIS IN CHEST RADIOGRAPHY | UNIVERSITY OF CHICAGO | R01 | 2004 | 0.29 |

**Cluster 27:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 |
| Innovative MRI-based Characterization of Cardiac Dyssynchrony | RUTGERS, THE STATE UNIV OF N.J. | R01 | 2018 | 0.14 |
| Machine Learning and Deformable Model-based 4D Characterization of Cardiac Dyssynchrony from MRI | RUTGERS, THE STATE UNIV OF N.J. | R01 | 2020 | 0.14 |
| AUTOMATIC QUANTITATIVE CT IMAGING OF PERICARDIAL FAT: A NOVEL ISCHEMIA PREDICTOR | CEDARS-SINAI MEDICAL CENTER | R21 | 2009 | 0.14 |
| Charting a New Course for Heart Failure: From Discovery to Data | KEYSTONE SYMPOSIA | R13 | 2020 | 0.13 |

**Cluster 28:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| A systems analysis of drug tolerance in Mycobacterium tuberculosis | INSTITUTE FOR SYSTEMS BIOLOGY | R01 | 2020 | 0.13 |
| An Integrative Approach to Drug Repositioning Using Decision Tree Based Machine Learning | WEILL MEDICAL COLL OF CORNELL UNIV | F31 | 2020 | 0.11 |
| Omics data integration and analysis for structure-based multi-target drug design | HUNTER COLLEGE | R01 | 2020 | 0.11 |
| Impacts of a Novel law-enforcement delivered intervention on drug user health | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R01 | 2020 | 0.099 |
| Computationally modeling the impact of ontogeny on drug metabolic fate | UNIV OF ARKANSAS FOR MED SCIS | R01 | 2019 | 0.098 |

**Cluster 29:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Structural and Semantic Cues for the Acquisition of Linguistic Regularties | UNIVERSITY OF WISCONSIN-MADISON | F31 | 2011 | 0.21 |
| Neurocognitive determinants of adolescent second language literacy development | HASKINS LABORATORIES, INC. | R01 | 2015 | 0.2 |
| Statistical Learning in Language Acquisition | UNIVERSITY OF WISCONSIN-MADISON | R37 | 2019 | 0.19 |
| The When to Worry about Language Study (W2W-L): Joint consideration of developmental patterning and neural substrates for enhancing earlyidentification of language impairment | NORTHWESTERN UNIVERSITY | R01 | 2020 | 0.19 |
| Linking Language Comprehension to Production Patterns | UNIVERSITY OF WISCONSIN-MADISON | R01 | 2008 | 0.19 |

**Cluster 30:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Effect of complex mixtures on oxidative stress and cognition in children | STATE UNIVERSITY OF NEW YORK AT BUFFALO | 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 | 0.13 |
| Multi-Site Validation Study of the HLHS Arrest Predictor | BAYLOR COLLEGE OF MEDICINE | R01 | 2020 | 0.12 |
| PREDICTING OUTCOME IN CHILDREN WITH NEW-ONSET TICS USING NEUROIMAGING DATA | WASHINGTON UNIVERSITY | R21 | 2016 | 0.12 |
| Predicting Heterogeneous Neurodevelopmental Outcomes in School-age Children with Early Caregiving Adversities | COLUMBIA UNIV NEW YORK MORNINGSIDE | R01 | 2020 | 0.11 |

**Cluster 31:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Genome-Wide Association Analysis of Bladder Cancer | UNIVERSITY OF TX MD ANDERSON CAN CTR | U01 | 2012 | 0.082 |
| Machine Learning Prediction of Cancer Susceptibility | UNIVERSITY OF PENNSYLVANIA | R01 | 2014 | 0.078 |
| International Case Control Study of Malignant Glioma | BAYLOR COLLEGE OF MEDICINE | R01 | 2015 | 0.076 |
| Genome Wide Association Study of Head and Neck Cancer | UNIVERSITY OF TX MD ANDERSON CAN CTR | R01 | 2013 | 0.072 |
| Detecting Genome Wide Epistasis with Efficient Bayesian Network Learning | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R00 | 2014 | 0.07 |

**Cluster 32:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Revealing the connectivity and functionality of brain stem circuits | UNIVERSITY OF CALIFORNIA, SAN DIEGO | U01 | 2016 | 0.1 |
| Supplement request to: Revealing the connectivity and functionality of brain stem circuits | UNIVERSITY OF CALIFORNIA, SAN DIEGO | U01 | 2015 | 0.1 |
| Experimental examinations of the mechanisms that generate the responses of midbra | HARVARD UNIVERSITY | R01 | 2017 | 0.099 |
| Crowd coding in the brain:3D imaging and control of collective neuronal dynamics | UNIV OF MARYLAND, COLLEGE PARK | U01 | 2016 | 0.098 |
| Reverse Engineering the Brain Stem Circuits that Govern Exploratory Behavior | UNIVERSITY OF CALIFORNIA, SAN DIEGO | U19 | 2020 | 0.092 |

**Cluster 33:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 | 0.25 |
| 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 | 0.22 |
| Statistical methods for vitamin D targets for functional outcomes in older adults | UNIVERSITY OF MARYLAND BALTIMORE | R01 | 2019 | 0.22 |
| Frailty, Statins, and Cardiovascular Disease Burden in Older Adults | HARVARD MEDICAL SCHOOL | R03 | 2019 | 0.21 |

**Cluster 34:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 | 0.15 |
| Distributed Learning of Deep Learning Models for Cancer Research | STANFORD UNIVERSITY | U01 | 2020 | 0.15 |
| Learning to learn in structural biology with deep neural networks | UNIVERSITY OF ROCHESTER | R35 | 2020 | 0.14 |
| Robust AI to develop risk models in retinopathy of prematurity using deep learning | MASSACHUSETTS GENERAL HOSPITAL | R21 | 2020 | 0.13 |
| Deep LOGISMOS | UNIVERSITY OF IOWA | R01 | 2020 | 0.11 |

**Cluster 35:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| INTELLIGENT CONTROL OF UPPER EXTREMITY NEURAL PROSTHESES | CLEVELAND CLINIC LERNER COL/MED-CWRU | R21 | 2006 | 0.096 |
| Spinal Epidural Electrode Array To Facilitate Standing and Stepping After SCI | UNIVERSITY OF CALIFORNIA LOS ANGELES | U01 | 2018 | 0.095 |
| Human and Machine Learning for Customized Control of Assistive Robots | REHABILITATION INSTITUTE OF CHICAGO D/B/A SHIRLEY RYAN ABILITYLAB | R01 | 2019 | 0.085 |
| Enabling forelimb function with agonist drug and epidural stimulation in SCI | UNIVERSITY OF CALIFORNIA LOS ANGELES | U01 | 2017 | 0.08 |
| Motor Learning for the Control of an Assistive Device | REHABILITATION INSTITUTE OF CHICAGO D/B/A SHIRLEY RYAN ABILITYLAB | R21 | 2008 | 0.078 |

**Cluster 36:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 | 0.41 |
| Computerized Adaptive Suicidal Risk Stratification and Prediction | ADAPTIVE TESTING TECHNOLOGIES | R44 | 2020 | 0.4 |
| Prediction of suicide death using EHR and polygenic risk scores | UNIVERSITY OF UTAH | R01 | 2020 | 0.39 |
| Innovations in Suicide Prevention Research (INSPIRE) | UNIV OF NORTH CAROLINA CHAPEL HILL | R01 | 2020 | 0.38 |

**Cluster 37:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Shape up! Kids | UNIVERSITY OF HAWAII AT MANOA | R01 | 2020 | 0.16 |
| Optical Body Composition and Health Assessment | UNIVERSITY OF HAWAII AT MANOA | R01 | 2020 | 0.16 |
| Calculation of Percent Body Fat by Analyzing Virtual Body Models | GEORGE WASHINGTON UNIVERSITY | R21 | 2016 | 0.13 |
| Computational Modeling of Anatomical Shape Distributions | MASSACHUSETTS INSTITUTE OF TECHNOLOGY | R01 | 2009 | 0.12 |
| Validation and Evaluation of a Portable Body Scanner for Determination of Obesity | UNIVERSITY OF TEXAS, AUSTIN | R21 | 2009 | 0.12 |

**Cluster 38:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| New Tools for the interpretation of Pathogen Genomic Data with a focus on Mycobacterium tuberculosis | HARVARD MEDICAL SCHOOL | K01 | 2019 | 0.087 |
| 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 | 0.079 |
| Patient Oriented Research and Mentorship and Training in Functional Neuroimaging of Obsessive-Compulsive Disorder | YALE UNIVERSITY | K24 | 2020 | 0.076 |
| Improving Prediction of Medical Responsiveness and Clinical Outcomes in Crohn's Disease | UNIVERSITY OF MICHIGAN AT ANN ARBOR | K23 | 2019 | 0.073 |
| The initial care of younger adults with newly diagnosed type 2 diabetes | KAISER FOUNDATION RESEARCH INSTITUTE | K23 | 2020 | 0.068 |

**Cluster 39:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| An Olfactory Method for Controlling Cigarette Craving | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2017 | 0.043 |
| An Olfactory Method for Controlling Cigarette Craving - Supplement | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2015 | 0.043 |
| The Development of a Noninvasive Monitoring System for Cigarette Smoking | UNIVERSITY OF ALABAMA IN TUSCALOOSA | R21 | 2011 | 0.032 |
| Smartband/smartphone-based automatic smoking detection and real time mindfulness intervention | YALE UNIVERSITY | R34 | 2020 | 0.031 |
| Smoking Cessation Coach--An Internet Tailoring Program | JOHNS HOPKINS UNIVERSITY | R21 | 2002 | 0.03 |

**Cluster 40:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 | 0.047 |
| Transforming Analytical Learning in the Era of Big Data | UNIVERSITY OF MICHIGAN AT ANN ARBOR | R25 | 2020 | 0.046 |
| Fisk University/UIUC-Mayo KnowENG BD2K Center R25 Partnership | FISK UNIVERSITY | R25 | 2019 | 0.039 |
| Mobility Data Integration to Insight | STANFORD UNIVERSITY | U54 | 2018 | 0.035 |
| Summer Institute for Statistics of Big Data | UNIVERSITY OF WASHINGTON | R25 | 2016 | 0.034 |

**Cluster 41:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| A Simulation Tool to Enable Identification of Critical Network Interactions Using | CFD RESEARCH CORPORATION | R43 | 2008 | 0.029 |
| A platform for mining, visualization and design of microbial interaction networks | BOSTON UNIVERSITY (CHARLES RIVER CAMPUS) | R01 | 2019 | 0.025 |
| Computational Studies of Virus-host Interactions Using Metagenomics Data and Applications | UNIVERSITY OF SOUTHERN CALIFORNIA | R01 | 2020 | 0.021 |
| Reactome: An Open Knowledgebase of Human Pathways | ONTARIO INSTITUTE FOR CANCER RESEARCH | U41 | 2020 | 0.019 |
| Transmission Networks in Trait-Based Communities | CORNELL UNIVERSITY | R01 | 2019 | 0.019 |

**Cluster 42:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 | 0.33 |
| Multimodal Speech Translation for Assistive Communication | NORTHEASTERN UNIVERSITY | R21 | 2015 | 0.32 |
| Perception of dysarthric speech: An objective model of dysarthric speech evaluation with actionable outcomes | ARIZONA STATE UNIVERSITY-TEMPE CAMPUS | R01 | 2020 | 0.31 |

**Cluster 43:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Quantitative Low-Dose PET Imaging | YALE UNIVERSITY | R01 | 2020 | 0.35 |
| Optimization of PET Image Reconstruction for Lesion Detection | MASSACHUSETTS GENERAL HOSPITAL | R03 | 2020 | 0.35 |
| Multi-modal and Extreme PET/MRI Reconstruction Methods | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | F32 | 2020 | 0.29 |
| Permeability Imaging using Simultaneous Dynamic PET and Arterial Spin Labeling MRI | MASSACHUSETTS GENERAL HOSPITAL | K01 | 2020 | 0.29 |
| Data-driven Head Motion Correction in PET Imaging Using Deep Learning | YALE UNIVERSITY | R21 | 2020 | 0.27 |

**Cluster 44:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Using medical informatics to follow-up a colorectal sessile serrated polyp cohort | FRED HUTCHINSON CANCER RESEARCH CENTER | R03 | 2015 | 0.076 |
| MICRORNA BIOMARKERS FOR CERVICAL CANCER | WASHINGTON UNIVERSITY | R21 | 2015 | 0.074 |
| Stephenson Cancer Center - Cancer Center Support Grant | UNIVERSITY OF OKLAHOMA HLTH SCIENCES CTR | P30 | 2020 | 0.072 |
| MICRORNA BIOMARKERS FOR OROPHARYNGEAL CANCER | UNIVERSITY OF ILLINOIS AT CHICAGO | R01 | 2020 | 0.07 |
| Identifying hereditary cancer patients in low-resource community cancer settings using an innovative informatics solution | ITRUNSINMYFAMILY.COM, INC. | R41 | 2019 | 0.064 |

**Cluster 45:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Data-driven approaches to identify biomarkers from multimodal imaging big data | GEORGIA STATE UNIVERSITY | R01 | 2020 | 0.045 |
| Statistical and Machine Learning Methods for Integrating Clinical and Multimodal Imaging Data to Select Optimal Antidepressant Treatment | GEORGE WASHINGTON UNIVERSITY | K01 | 2020 | 0.044 |
| Statistical Methods for Analyzing Complex, Multi-dimensional Data from Cross-sectional and Longitudinal Mental Health Studies | EMORY UNIVERSITY | R01 | 2019 | 0.043 |
| Delineating neurobiological heterogeneity in internalizing symptoms using machine learning and deep phenotyping | VANDERBILT UNIVERSITY | R00 | 2020 | 0.041 |
| Course and Outcome of Bipolar Disorder in Youth | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2020 | 0.038 |

**Cluster 46:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Biomarker panel to differentiate stroke from stroke mimic | PREDICTION SCIENCES, LLC | R43 | 2008 | 0.33 |
| Fast and Easy Assessment of Stroke | ALVA HEALTH, INC. | R43 | 2019 | 0.32 |
| Sleep apnea after stroke: Implications for screening and treatment | UNIVERSITY OF MICHIGAN AT ANN ARBOR | R01 | 2019 | 0.31 |
| Whole Transcriptome Studies of Patients with Transient Ischemic Attacks (TIAs) | UNIVERSITY OF CALIFORNIA AT DAVIS | R01 | 2020 | 0.3 |
| Enhancing Stroke Prehospital and Emergency Evaluation and Delivery (E-SPEED) | UNIVERSITY OF CHICAGO | R18 | 2020 | 0.29 |

**Cluster 47:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Sign Finder: Computer Vision to Find and Read Signs | BLINDSIGHT CORPORATION | R44 | 2006 | 0.017 |
| Digital image analysis for quantitative and qualitative assessment of pig islets | VITACYTE, LLC | R43 | 2011 | 0.013 |
| MICRO-OPTICS-BASED DIGITAL ALLERGEN COUNTER | INTELLIGENT OPTICAL SYSTEMS, INC. | R43 | 2000 | 0.011 |
| Mobile Food Intake Visualization and Voice Recognize (FIVR) | VIOCARE, INC. | U01 | 2010 | 0.0091 |
| Development and Dissemination of MuscleMiner: An Imaging Informatics Tool for Mus | UNIVERSITY OF FLORIDA | R01 | 2018 | 0.0086 |

**Cluster 48:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 |
| Advanced approaches to protein structure prediction | UNIVERSITY OF MICHIGAN AT ANN ARBOR | R35 | 2020 | 0.19 |
| PREDOCTORAL FELLOWSHIPS FOR STUDENTS WITH DISABILITIES | PRINCETON UNIVERSITY | F31 | 2004 | 0.17 |
| 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 49:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| DNA Methylation and gene expression variations influence pituitary adenoma hormonal function and invasive growth | UNIVERSITY OF SOUTHERN CALIFORNIA | R01 | 2020 | 0.12 |
| MODELING DNA METHYLATION'S ROLE IN GENE REGULATION | WASHINGTON UNIVERSITY | R01 | 2018 | 0.1 |
| Statistical Models in Epigenomics | UNIVERSITY OF SOUTHERN CALIFORNIA | R01 | 2005 | 0.096 |
| A MACHINE LEARNING APPROACH FOR FINE-SCALE GENOME WIDE DNA METHYLATION ANALYSIS | WASHINGTON UNIVERSITY | R21 | 2013 | 0.094 |
| Defining Genomic Signatures for Aberrant DNA Methylation in Human Cancers | EMORY UNIVERSITY | R01 | 2013 | 0.084 |

**Cluster 50:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Automatic Acquisition of Knowledge for Senior Care Planning | MY HEALTH CARE | R44 | 2011 | 0.088 |
| SCH: INT Re-envisioned Chat-assessment for Real-time Investigating of Nursing and Guidance | EMORY UNIVERSITY | R01 | 2020 | 0.078 |
| Identifying Patterns of Health Care Utilization among Physical Elder Abuse Victims Using Medicare Data and Legally Adjudicated Cases | WEILL MEDICAL COLL OF CORNELL UNIV | R01 | 2020 | 0.073 |
| Consumer Assessment of Healthcare Providers and Systems V (CAHPS V) | RAND CORPORATION | U18 | 2020 | 0.073 |
| ACILIA will be a low-cost kit with SaaS platform that integrates an embodied conversational agent using AI capabilities to provide educational information and emotional coping support | BENTEN TECHNOLOGIES, INC. | R43 | 2020 | 0.07 |

**Cluster 51:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 | 0.24 |
| Macro-vasculature: A Novel Image Biomarker of Lung Cance | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 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 |
| Lung Screening: Efficacy versus Effectiveness | BROWN UNIVERSITY | R01 | 2020 | 0.22 |
| Development of a Novel Lung Function Imaging Modality for comprehensive management of lung cancer | UNIVERSITY OF COLORADO DENVER | R01 | 2020 | 0.22 |

**Cluster 52:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 | 0.26 |
| Using Markov Decision Processes to Optimize Breast Biopsy Decision Making | UNIVERSITY OF WISCONSIN-MADISON | R21 | 2009 | 0.25 |
| Informatics Techniques to Optimize Mammography for Aging Populations | UNIVERSITY OF WISCONSIN-MADISON | R01 | 2016 | 0.24 |
| A Noninvasive, Precision Medicine Approach to Improve Breast Cancer Screening Using Cell-free RNA from Saliva. | PRIME GENOMICS, INC. | R43 | 2019 | 0.24 |
| Convergent AI for Precise Breast Cancer Risk Assessment | METHODIST HOSPITAL RESEARCH INSTITUTE | R01 | 2020 | 0.24 |

**Cluster 53:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Predicting causal non-coding variants in a founder population | STANFORD UNIVERSITY | R01 | 2017 | 0.13 |
| Regulation of mRNA splicing by intronic genetic variants | INDIANA UNIV-PURDUE UNIV AT INDIANAPOLIS | R01 | 2018 | 0.1 |
| Inferring the effects of genetic variants on gene expression and splicing | STANFORD UNIVERSITY | F32 | 2017 | 0.1 |
| Discovering Novel Structural Genomic Rearrangements Using Deep Neural Networks | UNIVERSITY OF MICHIGAN AT ANN ARBOR | F31 | 2020 | 0.1 |
| Decrypting Variants of Uncertain Significance in Long-QT Syndrome | NORTHWESTERN UNIVERSITY AT CHICAGO | R01 | 2017 | 0.099 |

**Cluster 54:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 | 0.23 |
| Improving Diagnosis of Multiple Sclerosis Through the Integration of Novel Imaging and Laboratory Biomarkers | UNIVERSITY OF VERMONT & ST AGRIC COLLEGE | K02 | 2020 | 0.22 |
| Analysis of LC-MS data to identify peptide and glycan biomarkers for hepatocellul | GEORGETOWN UNIVERSITY | R01 | 2014 | 0.2 |
| Sequential Ion/Ion Reactions for Large Peptide and Whole Protein Characterization | UNIVERSITY OF WISCONSIN-MADISON | R01 | 2015 | 0.2 |
| Prediction of risk of disability worsening and inflammatory disease activity in MS utilizing multimodal prediction algorithms | JOHNS HOPKINS UNIVERSITY | K23 | 2020 | 0.19 |

**Cluster 55:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Intraocular Robotic Interventional Surgical System for Cataract Surgery Project | UNIVERSITY OF CALIFORNIA LOS ANGELES | R21 | 2015 | 0.18 |
| Impact of Crouch Gait and Surgical Treatment on Knee Mechanics and Function | UNIVERSITY OF WISCONSIN-MADISON | R21 | 2016 | 0.17 |
| Quantifying the Metrics of Surgical Mastery: An Exploration in Data Science | STANFORD UNIVERSITY | R01 | 2020 | 0.17 |
| Data-Driven Framework for Classification and Surgical Planning of Spinal Deformity. | CHILDREN'S HOSP OF PHILADELPHIA | R21 | 2020 | 0.16 |
| Real-time non-intrusive workload monitoring-Integration of human factors in surgery training and assessment | PURDUE UNIVERSITY | R21 | 2020 | 0.16 |

**Cluster 56:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| ABCD-USA Consortium: Research Project | UNIVERSITY OF CALIFORNIA, SAN DIEGO | U01 | 2019 | 0.34 |
| ABCD-USA Consortium:Research Project | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | U01 | 2019 | 0.3 |
| Predicting Substance Use and Related Antisocial Behavior with Psychiatric, Socioeconomic, and Brain Measures in Women Offenders | UNIVERSITY OF NEW MEXICO | F31 | 2020 | 0.26 |
| Using Machine Learning Approaches to Examine Emotion-Related Brain Activity and Substance Use Among Adolescents | GEORGE MASON UNIVERSITY | F31 | 2020 | 0.24 |
| ABCD-USA Consortium: Data Analysis Center | UNIVERSITY OF CALIFORNIA, SAN DIEGO | U24 | 2019 | 0.22 |

**Cluster 57:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Transforming Patient Safety Event Data into Actionable Insights through Advanced Analytics | MEDSTAR HEALTH RESEARCH INSTITUTE | R01 | 2020 | 0.13 |
| Improving Patient Safety and Clinician Cognitive Support Through eMAR Redesign | MEDSTAR HEALTH RESEARCH INSTITUTE | R01 | 2020 | 0.12 |
| 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 | 0.12 |
| Collaborative Research: Statistical algorithms for anomaly detection and patterns recognition in patient care and safety event reports | NORTH CAROLINA STATE UNIVERSITY RALEIGH | R01 | 2020 | 0.12 |
| Pharmacovigilance Methods: Leveraging Heterogeneous Adverse Drug Reaction Data | COLUMBIA UNIVERSITY HEALTH SCIENCES | R01 | 2016 | 0.11 |

**Cluster 58:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 59:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 | 0.32 |
| Assessing ASL CBF as a biomarker for early Alzheimer's disease detection and disease progression | UNIVERSITY OF MARYLAND BALTIMORE | R01 | 2020 | 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 | 0.3 |
| Computational Prediction and Functional Validation of Novel Epigenetic Risk Loci in Alzheimer's Disease | EMORY UNIVERSITY | R56 | 2018 | 0.29 |
| Manifold-valued statistical models for longitudinal morphometic analysis in preclinical Alzheimer's disease (AD) | UNIVERSITY OF WISCONSIN-MADISON | R01 | 2018 | 0.28 |