**Cluster 0:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Supplementing Survey-Based Analyses of Group Vaccination Narratives and Behaviors Using Social Media | GEORGE WASHINGTON UNIVERSITY | R01 | 2019 | 0.33 |
| Leveraging Social Media for Substance Use Behavioral Insight | WASHINGTON UNIVERSITY | K02 | 2020 | 0.3 |
| Mining Social Media Messages for HIV Testing and Prevention Communication | UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN | R01 | 2020 | 0.29 |
| Influencing cervical cancer prevention and detection online through social media | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | R01 | 2016 | 0.27 |
| Social Media Use and Mechanisms of Suicide Risk in Adolescents | RHODE ISLAND HOSPITAL | K23 | 2020 | 0.27 |

**Cluster 1:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Wireless EEG/PSG System with Novel Artifact Removal | CLEVELAND MEDICAL DEVICES, INC. | R43 | 2004 | 0.1 |
| EEGLAB: Software for Analysis of Human Brain Dynamics | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R01 | 2020 | 0.089 |
| Scalable Software for Distributed Processing and Visualization of Multi-Site MEG/EEG Datasets | MASSACHUSETTS GENERAL HOSPITAL | R01 | 2020 | 0.086 |
| MULTICHANNEL EEG DATA COMPRESSION | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2001 | 0.083 |
| Translational refinement of adaptive communication system for locked-in patients | OREGON HEALTH & SCIENCE UNIVERSITY | R01 | 2013 | 0.082 |

**Cluster 2:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Digital Mammography: Advanced Computer-Aided Breast Can\* | UNIVERSITY OF MICHIGAN | R01 | 2007 | 0.22 |
| Computer-Aided Detection of Urinary Tract Cancer on MDCT Urography | UNIVERSITY OF MICHIGAN AT ANN ARBOR | R01 | 2014 | 0.21 |
| Improving Breast Cancer Detection and Diagnosis with CAD | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2011 | 0.19 |
| Toward Diagnostics and Therapies of Molecular Subcategories of CAD | ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI | R01 | 2018 | 0.18 |
| Digital Tomosynthesis Mammography: Computer-Aided Analysis of Masses | UNIVERSITY OF MICHIGAN AT ANN ARBOR | R33 | 2009 | 0.17 |

**Cluster 3:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| From enrichment to insights | STANFORD UNIVERSITY | R01 | 2020 | 0.13 |
| National Infrastructure for Standardized and Portable EHR Phenotyping Algorithms | WEILL MEDICAL COLL OF CORNELL UNIV | R01 | 2020 | 0.12 |
| Semi-supervised Algorithms for Risk Assessment with Noisy EHR Data | HARVARD SCHOOL OF PUBLIC HEALTH | R21 | 2020 | 0.12 |
| Biases introduced by filtering electronic health records for patients with "complete data" | HARVARD MEDICAL SCHOOL | R01 | 2020 | 0.12 |
| An Informatics Framework for Discovery and Ascertainment of Drug-Supplement Interactions | UNIVERSITY OF MINNESOTA | R01 | 2020 | 0.12 |

**Cluster 4:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Deciphering cellular signaling system by deep mining a comprehensive genomic compendium | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2018 | 0.081 |
| Integrated SNP, gene expression and proteomic analysis | EPICENTER SOFTWARE | R44 | 2005 | 0.076 |
| Computational Methods for Expression Image Analysis | ARIZONA STATE UNIVERSITY-TEMPE CAMPUS | R01 | 2013 | 0.073 |
| GenePattern: Methodologies and Software Tools. | MASSACHUSETTS INSTITUTE OF TECHNOLOGY | R33 | 2004 | 0.073 |
| Translational Bioinformatics for Human Developmental Genomics | TUFTS UNIVERSITY MEDFORD | R01 | 2012 | 0.072 |

**Cluster 5:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| A Computational Biomechanical Airway Model for Obese Children at Risk for OSAS | ALBERT EINSTEIN COLLEGE OF MEDICINE | R01 | 2020 | 0.1 |
| Multi-Site Validation Study of the HLHS Arrest Predictor | BAYLOR COLLEGE OF MEDICINE | R01 | 2020 | 0.1 |
| PREDICTING OUTCOME IN CHILDREN WITH NEW-ONSET TICS USING NEUROIMAGING DATA | WASHINGTON UNIVERSITY | R21 | 2016 | 0.096 |
| Development of clinical decision tools for management of diarrhea of children in high and low resource settings | UNIVERSITY OF UTAH | R01 | 2020 | 0.087 |
| Predicting Heterogeneous Neurodevelopmental Outcomes in School-age Children with Early Caregiving Adversities | COLUMBIA UNIV NEW YORK MORNINGSIDE | R01 | 2020 | 0.084 |

**Cluster 6:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Identifying Mechanisms of Dementia: Role for MRI in the Era of Molecular Imaging | MAYO CLINIC ROCHESTER | R01 | 2012 | 0.12 |
| Changing Talk Online (CHATO): A Pragmatic Trial to Reduce Behavioral Symptoms in Dementia Care | UNIVERSITY OF KANSAS MEDICAL CENTER | R61 | 2019 | 0.11 |
| Preventable Hospitalization in Dementia: The Impact of Neuropsychiatric Symptoms | UNIVERSITY OF MICHIGAN AT ANN ARBOR | K08 | 2017 | 0.1 |
| Planning Changing Talk Online (CHATO): a Clinical Trial Testing the Effects of Online Communication Training for Nursing Home Staff on Behavioral and Psychological Symptoms of Residents with Dementia | UNIVERSITY OF KANSAS MEDICAL CENTER | R34 | 2018 | 0.1 |
| SPEEKO for Elderspeak: A Self-Monitoring App to Improve Communication and Reduce Behavioral Symptoms in Care for Persons with Alzheimer's Disease and Other Dementias | UNIVERSITY OF KANSAS MEDICAL CENTER | R21 | 2020 | 0.095 |

**Cluster 7:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Alcohol Use: Nonlinearities in Intraindividual Variables | UNIVERSITY OF SOUTHERN CALIFORNIA | F31 | 2005 | 0.23 |
| How Cannabis Use Affects Alcohol Treatment Outcomes | PUBLIC HEALTH INSTITUTE | R21 | 2016 | 0.23 |
| Ambulatory assessment of alcohol use, mood dysregulation, and alcohol craving | UNIVERSITY OF MISSOURI-COLUMBIA | R21 | 2014 | 0.23 |
| A Multisite Neurobehavioral Assessment of Fetal Alcohol Spectrum Disorders | SAN DIEGO STATE UNIVERSITY | U01 | 2020 | 0.22 |
| Mediators and Moderators of a Neighborhood Experiment on Alcohol Use | UNIVERSITY OF MINNESOTA | R21 | 2017 | 0.22 |

**Cluster 8:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| National Center: Multi-Scale Study of Cellular Networks(RMI) | COLUMBIA UNIVERSITY HEALTH SCIENCES | U54 | 2010 | 0.052 |
| National Center: Multiscale Analysis of Genomic and Cellular Networks (MAGNet) | COLUMBIA UNIVERSITY HEALTH SCIENCES | U54 | 2010 | 0.052 |
| Reactome: An Open Knowledgebase of Human Pathways | ONTARIO INSTITUTE FOR CANCER RESEARCH | U41 | 2020 | 0.052 |
| Nation Center: Multi-Scale Study- Cellular Networks(RMI) | COLUMBIA UNIVERSITY HEALTH SCIENCES | U54 | 2008 | 0.05 |
| Integration and Visualization of Diverse Biological Data | PRINCETON UNIVERSITY | R01 | 2018 | 0.039 |

**Cluster 9:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Intelligent Aids for Proteomic Data Mining | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | K25 | 2008 | 0.11 |
| Analysis of LC-MS data to identify peptide and glycan biomarkers for hepatocellul | GEORGETOWN UNIVERSITY | R01 | 2014 | 0.11 |
| Urinary Polypeptide Biomarkers of IgA Nephropathy | UNIVERSITY OF ALABAMA AT BIRMINGHAM | R21 | 2010 | 0.11 |
| A New Model of Peptide Fragmentation for Improved Protein Identification and Targ | UNIVERSITY OF COLORADO | R01 | 2015 | 0.095 |
| Self Correcting Nanoflow LC-MS for Clinical Proteomics | UNIVERSITY OF WASHINGTON | R01 | 2016 | 0.094 |

**Cluster 10:**

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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 | 0.1 |
| Hippocampal and prefrontal contributions to memory integration | UNIVERSITY OF TEXAS, AUSTIN | R01 | 2019 | 0.097 |
| Neurophysiological mechanisms of cognitive and emotional control in ADHD | OREGON HEALTH & SCIENCE UNIVERSITY | K23 | 2019 | 0.089 |
| Characterization of executive function dimensions across pediatric psychiatric disorders | GEORGETOWN UNIVERSITY | R01 | 2020 | 0.087 |
| The effects of film music on neural activity in higher-order brain areas and comprehension for the film narrative | PRINCETON UNIVERSITY | F99 | 2020 | 0.077 |

**Cluster 11:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Computational Modeling of Anatomical Shape Distributions | MASSACHUSETTS INSTITUTE OF TECHNOLOGY | R01 | 2009 | 0.073 |
| Optical Body Composition and Health Assessment | UNIVERSITY OF HAWAII AT MANOA | R01 | 2020 | 0.07 |
| Multi-Parametric Spatial Assessment of Bone with HR-pQCT | UNIVERSITY OF COLORADO DENVER | R01 | 2020 | 0.063 |
| Shape up! Kids | UNIVERSITY OF HAWAII AT MANOA | R01 | 2020 | 0.063 |
| Fracture Prediction by Machine Learning and 3D Finite Element Models from DXA | COLUMBIA UNIVERSITY HEALTH SCIENCES | K99 | 2016 | 0.055 |

**Cluster 12:**

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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 | 0.39 |
| Innovations in Suicide Prevention Research (INSPIRE) | UNIV OF NORTH CAROLINA CHAPEL HILL | R01 | 2020 | 0.38 |
| Digital Monitoring of Agitation for Short-Term Suicide Risk Prediction | MASSACHUSETTS GENERAL HOSPITAL | K23 | 2020 | 0.38 |
| Using multimodal imaging and the RDoC framework to predict risk factors for suicide attempt | YALE UNIVERSITY | R03 | 2020 | 0.37 |
| Treatment Utilization Before Suicide (TUBS) | HENRY FORD HEALTH SYSTEM | R01 | 2018 | 0.37 |

**Cluster 13:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Web-based App to Alleviate Loneliness and Isolation in Older Adults at Home | VIGOROUS MIND, INC. | R43 | 2018 | 0.11 |
| Cognitive and social aspects of decision-making | UNIVERSITY OF COLORADO AT COLORADO SPGS | R15 | 2002 | 0.11 |
| Sleep Health Profiles and Mortality Risk in Older Adults: A Multi-Cohort Application of Novel Statistical Methods | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2019 | 0.1 |
| Leveraging large-scale national data to understand, reduce, and prevent benzodiazepine-related harms among older adults | UNIVERSITY OF MICHIGAN AT ANN ARBOR | R01 | 2020 | 0.1 |
| Integrated Web-Based Customer Engagement, Physical Exercise, and Coaching Platform for Older Adults | VIGOROUS MIND, INC. | R43 | 2017 | 0.1 |

**Cluster 14:**

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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 | 0.24 |
| Lung cancer in East Africa and the relationship to HIV-1 infection: epidemiology, molecular characterization and imaging | CASE WESTERN RESERVE UNIVERSITY | U54 | 2020 | 0.24 |
| A diagnostic model for malignant pulmonary nodules | UNIVERSITY OF MARYLAND BALTIMORE | R21 | 2020 | 0.24 |
| EARLY DETECTION OF LUNG CANCER USING METABOLOMIC LIPID PROFILING | RUSH UNIVERSITY MEDICAL CENTER | R21 | 2014 | 0.23 |
| High Density Association Analysis of Lung Cancer | UNIVERSITY OF TX MD ANDERSON CAN CTR | R01 | 2010 | 0.23 |

**Cluster 15:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| NONINVASIVE ASSESSMENT OF ATRIAL FIBRILLATION | CREARE, INC. | R44 | 2001 | 0.0038 |
| Non-invasive device to assist selecting the level-of-amputation in patients with peripheral arterial disease | SPECTRAL MD, INC. | R43 | 2018 | 0.0036 |
| Inference in Regression Models with Missing Covariates | UNIVERSITY OF NORTH CAROLINA CHAPEL HILL | R01 | 2003 | 0.0021 |
| FOUNDATION MODEL OF ANATOMY | UNIVERSITY OF WASHINGTON | R01 | 2002 | 0.0021 |
| Advanced Risk Adjusters and Predictive Formulas for ICD-10 Based Risk Adjustment | BOSTON UNIVERSITY (CHARLES RIVER CAMPUS) | R01 | 2020 | 0.002 |

**Cluster 16:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Metal binding sites in macromolecular structures | UNIVERSITY OF VIRGINIA | R01 | 2019 | 0.048 |
| Computational tools for T- and B-cell epitope prediction | UNIVERSITY OF TEXAS MED BR GALVESTON | R01 | 2010 | 0.047 |
| Reactome IDG portal: Pathway-based analysis and visualization of understudied human proteins | OREGON HEALTH & SCIENCE UNIVERSITY | U01 | 2020 | 0.046 |
| 2007 Small Intergin Binding Proteins Gordon Research Conference | GORDON RESEARCH CONFERENCES | R13 | 2007 | 0.039 |
| Annotating Functional Sites in 3D Biological Structures | STANFORD UNIVERSITY | R01 | 2013 | 0.035 |

**Cluster 17:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Central glutamate signaling in postoperative pain regulation - Renewal | NEW YORK UNIVERSITY SCHOOL OF MEDICINE | R01 | 2020 | 0.39 |
| Finding Good TEMporal PostOperative pain Signatures (TEMPOS) | UNIVERSITY OF FLORIDA | R01 | 2019 | 0.39 |
| A Multimodal Approach for Monitoring Prolonged Acute Pain in Neonates | UNIVERSITY OF SOUTH FLORIDA | R21 | 2020 | 0.38 |
| Autonomous Pain Recognition in Non-Verbal and Critically Ill Patients | UNIVERSITY OF FLORIDA | R21 | 2020 | 0.38 |
| Measuring Infant Pain Objectively using Sensor Fusion and Machine Learning Algorithms | AUTONOMOUS HEALTHCARE, INC. | R41 | 2018 | 0.38 |

**Cluster 18:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Gait and communication growth in typical development and autism spectrum disorder | UNIVERSITY OF PENNSYLVANIA | F31 | 2020 | 0.16 |
| The role of statistical learning in the atypical language development in ASD | UNIVERSITY OF DELAWARE | R21 | 2019 | 0.15 |
| Prediction and Early Language Development in Young Children with ASD | UNIVERSITY OF WISCONSIN-MADISON | R01 | 2019 | 0.14 |
| Cerebellar connectivity and error-based learning in infants at risk for autism | WASHINGTON UNIVERSITY | F31 | 2020 | 0.13 |
| Investigating quantitative signatures of autism in toddlers | COLUMBIA UNIVERSITY TEACHERS COLLEGE | R01 | 2020 | 0.12 |

**Cluster 19:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| MUSC Minority Student Development Program | MEDICAL UNIVERSITY OF SOUTH CAROLINA | R25 | 2008 | 0.18 |
| An interactive, digital platform to transform biological learning | SQUID BOOKS, LLC | R44 | 2020 | 0.18 |
| An interactive, digital platform to transform physical science learning | SQUID BOOKS, LLC | R44 | 2020 | 0.18 |
| Building a classroom game economy to improve mathematical reasoning and prepare K-5 students for success in STEM learning | TEACHLEY, LLC | R44 | 2020 | 0.17 |
| MBRS IMSD Program at the University of Kansas | UNIVERSITY OF KANSAS LAWRENCE | R25 | 2008 | 0.16 |

**Cluster 20:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Programmable RNA-targeting CRISPR-Cas tools to study RNA biology | UNIVERSITY OF ROCHESTER | R35 | 2020 | 0.26 |
| Defining the messenger RNP code in the brain | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R01 | 2016 | 0.23 |
| Computational genome-wide RNA profiling using next-generation sequencing | UNIVERSITY OF PENNSYLVANIA | R01 | 2016 | 0.22 |
| New methods for computational modeling of RNA structures | UNIVERSITY OF MISSOURI-COLUMBIA | R35 | 2020 | 0.22 |
| The next generation of RNA-Seq simulators for benchmarking analyses | UNIVERSITY OF PENNSYLVANIA | R21 | 2019 | 0.2 |

**Cluster 21:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| UCSC-Buck Inst. Genome Data Analysis Center for TCGA Research Network (GDAC) | UNIVERSITY OF CALIFORNIA SANTA CRUZ | U24 | 2016 | 0.053 |
| A statistical framework to systematically characterize cancer driver mutations in noncoding genomic regions | DANA-FARBER CANCER INST | R21 | 2020 | 0.044 |
| KnowEng, a Scalable Knowledge Engine for Large-Scale Genomic Data-OVERALL | UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN | U54 | 2017 | 0.042 |
| Pilot for Creating Reproducible Workflows Using Docker Containers for NIH Commons | UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN | U54 | 2017 | 0.038 |
| Analytical Approaches to Massive Data Computation with Applications to Genomics | BROWN UNIVERSITY | R01 | 2016 | 0.036 |

**Cluster 22:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| CorBand: A novel wearable wrist sensor for heart failure remote monitoring | RETHINK MEDICAL, INC. | R44 | 2017 | 0.14 |
| Automated quantitative CT imaging of epicardial adipose tissue and risk of cardiac events | CEDARS-SINAI MEDICAL CENTER | R01 | 2019 | 0.13 |
| Transition from Risk Factors to Early HF: Prevalence, Pathogenesis, and Phenomics | WAKE FOREST UNIVERSITY HEALTH SCIENCES | R01 | 2018 | 0.13 |
| Advanced Heart Failure: Epidemiology and Outcomes | MAYO CLINIC ROCHESTER | R01 | 2020 | 0.12 |
| Charting a New Course for Heart Failure: From Discovery to Data | KEYSTONE SYMPOSIA | R13 | 2020 | 0.12 |

**Cluster 23:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| iFACS: Imaging Florescence Activated Cell Sorter to sort cells based on images | NANOCELLECT BIOMEDICAL, INC. | R44 | 2018 | 0.11 |
| Single-cell multi-protein device for informative cellular function evaluation | ISOPLEXIS, INC. | R43 | 2016 | 0.1 |
| Dissecting the mechanism of cell migration at the systems level | CARNEGIE-MELLON UNIVERSITY | R35 | 2020 | 0.1 |
| Real-time computer vision tracking of stemness | CARNEGIE-MELLON UNIVERSITY | R01 | 2010 | 0.096 |
| Single Cell Transcriptomic and Genetic Diversity by Single Molecule Long Read Sequencing | UNIVERSITY OF PENNSYLVANIA | R01 | 2020 | 0.096 |

**Cluster 24:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Multifactorial spatiotemporal analyses to evaluate environmental triggers and patient-level clinical characteristics of severe asthma exacerbations in children | DUKE UNIVERSITY | R21 | 2020 | 0.16 |
| Nasal biomarkers of asthma | ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI | R01 | 2019 | 0.15 |
| Multi-Omics Analysis of the Association of Polyunsaturated Fatty Acids with Asthma and Allergy in Childhood | BRIGHAM AND WOMEN'S HOSPITAL | K08 | 2020 | 0.15 |
| Perinatal Origins of Asthma | UNIVERSITY OF ILLINOIS AT CHICAGO | F30 | 2020 | 0.14 |
| AUTOMATED SYSTEM FOR TELEPHONIC MGMT OF ASTHMA | BETTER CONTROL MEDICAL COMPUTERS (BCMC) | R44 | 2000 | 0.13 |

**Cluster 25:**

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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 | 0.12 |
| MRI Imaging and Biomarkers for Early Detection of Aggressive Prostate Cancer | UNIVERSITY OF MIAMI SCHOOL OF MEDICINE | U01 | 2020 | 0.11 |
| CLINICAL AND EPIDEMIOLOGICAL CENTER--PROSTATE CANCER | JOHNS HOPKINS UNIVERSITY | U01 | 2004 | 0.1 |
| Genetic & epigenetic analysis of angiogenesis genes in recurrent prostate cancer | H. LEE MOFFITT CANCER CTR & RES INST | R01 | 2012 | 0.1 |
| Predicting the Presence of Clinically Significant Prostate Cancer using Multiparametric MRI and MR-US Fusion Biopsy | UNIVERSITY OF CALIFORNIA LOS ANGELES | R21 | 2019 | 0.099 |

**Cluster 26:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Enabling Population-Scale Physical Activity Measurement on Common Mobile Phones | MASSACHUSETTS INSTITUTE OF TECHNOLOGY | U01 | 2010 | 0.087 |
| Novel Analytic Techniques to Assess Physical Activity | UNIVERSITY OF MASSACHUSETTS AMHERST | R01 | 2010 | 0.086 |
| Calibrating free-living physical activity characteristics across functionally-limited populations using machine-learned accelerometer approaches | UNIVERSITY OF WISCONSIN MILWAUKEE | R01 | 2020 | 0.083 |
| Advancing Physical Activity Measurement Using Pattern Recognition Techniques | UNIVERSITY OF MASSACHUSETTS AMHERST | RC1 | 2010 | 0.082 |
| Physical Activity Calibration in Individuals with Movement Limitations | UNIVERSITY OF WISCONSIN MILWAUKEE | R21 | 2015 | 0.08 |

**Cluster 27:**

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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 | 0.33 |
| Dynamics of Vocal Tract Shaping | UNIVERSITY OF SOUTHERN CALIFORNIA | R01 | 2020 | 0.3 |
| Perception of dysarthric speech: An objective model of dysarthric speech evaluation with actionable outcomes | ARIZONA STATE UNIVERSITY-TEMPE CAMPUS | R01 | 2020 | 0.29 |
| Wearable silent speech technology to enhance impaired oral communication | UNIVERSITY OF TEXAS, AUSTIN | R01 | 2020 | 0.29 |
| Objectively Quantifying Speech Outcomes of Children with Cleft Palate | ARIZONA STATE UNIVERSITY-TEMPE CAMPUS | R21 | 2019 | 0.29 |

**Cluster 28:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Cheminformatics of Allosteric mGluR Modulation promotes Therapeutic Development | VANDERBILT UNIVERSITY | R01 | 2013 | 0.075 |
| Classification Algorithms for Chemical Compounds | UNIVERSITY OF MINNESOTA | R01 | 2008 | 0.067 |
| Development of a Biocatalytic Platform for Convergent Synthesis of Chiral Amines | CALIFORNIA INSTITUTE OF TECHNOLOGY | R01 | 2020 | 0.067 |
| A Machine Learning Platform for Adaptive Chemical Screening | MORGRIDGE INSTITUTE FOR RESEARCH, INC. | R01 | 2020 | 0.065 |
| Mechanism-Driven Virtual Adverse Outcome Pathway Modeling for Hepatotoxicity | RUTGERS THE STATE UNIV OF NJ CAMDEN | R01 | 2020 | 0.054 |

**Cluster 29:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| EMERGE PHASE III CLINICAL CENTER AT PARTNERS HEALTHCARE | BRIGHAM AND WOMEN'S HOSPITAL | U01 | 2019 | 0.11 |
| EMR-Linked Biobank for Translational Genomics | GEISINGER CLINIC | U01 | 2019 | 0.1 |
| OMOP information model for eMERGE phenotyping | GEISINGER CLINIC | U01 | 2017 | 0.1 |
| EMR Phenotype and Community Engaged Genomic Associations | MAYO CLINIC ROCHESTER | U01 | 2014 | 0.089 |
| Center for Multi- and Trans-ethnic Mapping of Mendelian and Complex Diseases | ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI | U01 | 2020 | 0.079 |

**Cluster 30:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Signals of Epigenetic Modification in Sjogrens Syndrome | UNIVERSITY OF CALIFORNIA BERKELEY | F31 | 2018 | 0.23 |
| Identification of epigenetic subclones in lymphomas and leukemias | WASHINGTON UNIVERSITY | F30 | 2020 | 0.23 |
| Defining Genomic Signatures for Aberrant DNA Methylation in Human Cancers | EMORY UNIVERSITY | R01 | 2013 | 0.23 |
| MODELING DNA METHYLATION'S ROLE IN GENE REGULATION | WASHINGTON UNIVERSITY | R01 | 2018 | 0.22 |
| Computational modeling of DNA methylation-mediated gene regulation | WASHINGTON UNIVERSITY | R01 | 2020 | 0.2 |

**Cluster 31:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Natural language processing for clinical and translational research | MAYO CLINIC ROCHESTER | R01 | 2016 | 0.17 |
| Annotation, development and evaluation for clinical information extraction | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R01 | 2013 | 0.16 |
| Annotation, development and evaluation for clinical information extraction (transfer) | BOSTON CHILDREN'S HOSPITAL | R01 | 2013 | 0.16 |
| Extended Methods and Software Development for Health NLP | COLUMBIA UNIVERSITY HEALTH SCIENCES | R01 | 2019 | 0.14 |
| Investigating the generalizability of natural language processing of EMR data | KAISER FOUNDATION RESEARCH INSTITUTE | R21 | 2009 | 0.13 |

**Cluster 32:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 | 0.11 |
| Avoidable Acute Care Use among Patients with Lupus | BRIGHAM AND WOMEN'S HOSPITAL | K23 | 2020 | 0.1 |
| Advanced Image Analysis Tools for Diabetic Retinopathy Telemedicine Application | EYENUK, INC. | R44 | 2017 | 0.08 |
| Improving Prediction of Medical Responsiveness and Clinical Outcomes in Crohn's Disease | UNIVERSITY OF MICHIGAN AT ANN ARBOR | K23 | 2019 | 0.077 |
| Multimodal Biomarkers in Frontotemporal Lobar Degeneration | UNIVERSITY OF PENNSYLVANIA | K01 | 2017 | 0.073 |

**Cluster 33:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Computational Prediction and Functional Validation of Novel Risk Loci of Alzheimer's Disease | EMORY UNIVERSITY | R56 | 2018 | 0.28 |
| Assessing ASL CBF as a biomarker for early Alzheimer's disease detection and disease progression | UNIVERSITY OF MARYLAND BALTIMORE | R01 | 2020 | 0.27 |
| Computational Prediction and Functional Validation of Novel Epigenetic Risk Loci in Alzheimer's Disease | EMORY UNIVERSITY | R56 | 2018 | 0.27 |
| Genetic Predictors, Transcriptomic Biomarkers, & Neurobiological Signatures of Resilience to Alzheimer's Disease | UPSTATE MEDICAL UNIVERSITY | R01 | 2020 | 0.26 |
| Circadian Organization and Disorder in Alzheimer's Disease | UNIVERSITY OF PENNSYLVANIA | R01 | 2020 | 0.26 |

**Cluster 34:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Experimental examinations of the mechanisms that generate the responses of midbra | HARVARD UNIVERSITY | R01 | 2017 | 0.13 |
| Corticofugal Modulation of Tactile Sensory Processing | DUKE UNIVERSITY | R01 | 2005 | 0.1 |
| Crowd coding in the brain:3D imaging and control of collective neuronal dynamics | UNIV OF MARYLAND, COLLEGE PARK | U01 | 2016 | 0.086 |
| Probing neural feature selectivity with natural stimuli | SALK INSTITUTE FOR BIOLOGICAL STUDIES | K25 | 2008 | 0.083 |
| CRCNS: Theory and Experiments to Elucidate Neural Coding in the Reward Circuit | UNIVERSITY OF WASHINGTON | R01 | 2020 | 0.074 |

**Cluster 35:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| A systems analysis of drug tolerance in Mycobacterium tuberculosis | INSTITUTE FOR SYSTEMS BIOLOGY | R01 | 2020 | 0.14 |
| An Integrative Approach to Drug Repositioning Using Decision Tree Based Machine Learning | WEILL MEDICAL COLL OF CORNELL UNIV | F31 | 2020 | 0.13 |
| Impacts of a Novel law-enforcement delivered intervention on drug user health | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R01 | 2020 | 0.12 |
| Novel computational approaches to predict drug response and combination effects | UT SOUTHWESTERN MEDICAL CENTER | R35 | 2020 | 0.11 |
| Mapping the Drugome: predictive network approaches to drug safety surveillance | BOSTON CHILDREN'S HOSPITAL | R00 | 2014 | 0.098 |

**Cluster 36:**

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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 | 0.061 |
| Pathway-based analysis of addiction susceptibility genes | MAYO CLINIC ROCHESTER | R03 | 2010 | 0.054 |
| Modeling Dimensionality and Genetic Heterogeneity in Schizophrenia | UNIVERSITY OF UTAH | K01 | 2019 | 0.053 |
| Machine Learning Prediction of Cancer Susceptibility | UNIVERSITY OF PENNSYLVANIA | R01 | 2014 | 0.044 |
| Multi-point and multi-locus analysis of genomic association data | CASE WESTERN RESERVE UNIVERSITY | R01 | 2010 | 0.043 |

**Cluster 37:**

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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 | 0.37 |
| Enhancing an EMR-Based Real-Time Sepsis Alert System Performance through Machine Learning | WAYNE STATE UNIVERSITY | R21 | 2017 | 0.37 |
| A New Tool to Rapidly Diagnose Sepsis using Flow Imaging Microscopy and Machine Learning | URSA ANALYTICS, INC. | R43 | 2020 | 0.33 |
| Sepsis Early Prediction and Subphenotype Illumination Study (SEPSIS) | UNIVERSITY OF CHICAGO | R01 | 2019 | 0.32 |
| Sepsis Early Prediction and Subphenotype Illumination Study (SEPSIS) | UNIVERSITY OF WISCONSIN-MADISON | R01 | 2020 | 0.32 |

**Cluster 38:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Surveying transcription factor pioneer interactions with nucleosomal DNA | BRIGHAM AND WOMEN'S HOSPITAL | R21 | 2018 | 0.12 |
| Administrative Supplement: Surveying transcription factor pioneer interactions with nucleosomal DNA | BRIGHAM AND WOMEN'S HOSPITAL | R21 | 2017 | 0.12 |
| Comprehensive functional characterization and dissection of noncoding regulatory elements and human genetic variation | BROAD INSTITUTE, INC. | UM1 | 2020 | 0.1 |
| High-throughput methods for elucidating the control of chromatin accessibility | MASSACHUSETTS INSTITUTE OF TECHNOLOGY | R01 | 2017 | 0.098 |
| Development of a Neuronal Regulatory Lexicon | JOHNS HOPKINS UNIVERSITY | R01 | 2018 | 0.093 |

**Cluster 39:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| High Resolution Connectomics of Mammalian Neural Circuits | HARVARD UNIVERSITY | R01 | 2015 | 0.16 |
| Center for Cell Circuits | BROAD INSTITUTE, INC. | P50 | 2015 | 0.16 |
| Neural control of skilled movements: an ethological dissection of genetically tractable mammalian motor circuits | SALK INSTITUTE FOR BIOLOGICAL STUDIES | DP2 | 2019 | 0.13 |
| Revealing the connectivity and functionality of brain stem circuits | UNIVERSITY OF CALIFORNIA, SAN DIEGO | U01 | 2016 | 0.13 |
| Supplement request to: Revealing the connectivity and functionality of brain stem circuits | UNIVERSITY OF CALIFORNIA, SAN DIEGO | U01 | 2015 | 0.13 |

**Cluster 40:**

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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 | 0.37 |
| An Olfactory Method for Controlling Cigarette Craving | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2017 | 0.33 |
| An Olfactory Method for Controlling Cigarette Craving - Supplement | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2015 | 0.33 |
| Eliminating Tobacco-Related Disparities amount African American Smokers | UNIVERSITY OF UTAH | R01 | 2020 | 0.32 |
| Eliminating Tobacco-Related Disparities among African American Smokers | RICE UNIVERSITY | R01 | 2016 | 0.32 |

**Cluster 41:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Southern California Clinical Center of the Type 1 Diabetes in Acute Pancreatitis Consortium | CEDARS-SINAI MEDICAL CENTER | U01 | 2020 | 0.14 |
| Effects of Chronic Kidney Disease on Cardiovascular Disease and Dementia Among People with Diabetes: Causal Modeling with Machine Learning Approach | UNIVERSITY OF CALIFORNIA LOS ANGELES | F99 | 2020 | 0.13 |
| Clinical, Radiologic and Biochemical Factors Related to Diabetes Development after Acute Pancreatitis | JOHNS HOPKINS UNIVERSITY | U01 | 2020 | 0.13 |
| Validation of Survey Questions to Distinguish Type 1 and Type 2 Diabetes Among Adults With Diabetes | WESTAT, INC. | U01 | 2018 | 0.12 |
| Statistical methods for healthcare in complex patients with diabetes | FRED HUTCHINSON CANCER RESEARCH CENTER | R01 | 2019 | 0.1 |

**Cluster 42:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Biomarker panel to differentiate stroke from stroke mimic | PREDICTION SCIENCES, LLC | R43 | 2008 | 0.31 |
| Sleep apnea after stroke: Implications for screening and treatment | UNIVERSITY OF MICHIGAN AT ANN ARBOR | R01 | 2019 | 0.31 |
| Fast and Easy Assessment of Stroke | ALVA HEALTH, INC. | R43 | 2019 | 0.29 |
| Whole Transcriptome Studies of Patients with Transient Ischemic Attacks (TIAs) | UNIVERSITY OF CALIFORNIA AT DAVIS | R01 | 2020 | 0.28 |
| Prediction Model for Incident Stroke for Early Screening of an Individual at Risk of Stroke | IHEALTHSCREEN, INC. | R43 | 2018 | 0.28 |

**Cluster 43:**

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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 | 0.32 |
| Defining the impact of injection drug use on antiretroviral therapy and HIV treatment outcomes: an (epi)genomic approach | YALE UNIVERSITY | R01 | 2020 | 0.3 |
| 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 | 0.29 |
| NeuroAIDS in India | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R01 | 2011 | 0.29 |
| Gene Network Identification and Integration (GNetii) Approach to Understanding the Biology Underlying HIV and Drug Abuse. | RESEARCH TRIANGLE INSTITUTE | R01 | 2020 | 0.27 |

**Cluster 44:**

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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 | 0.16 |
| Statistical atlases of brain tumor MRI:do imaging phenotypes predict progression? | UNIVERSITY OF PENNSYLVANIA | R01 | 2012 | 0.13 |
| Automatic Volumetric Treatment Response Assessment and Determination of Regional Genetic Characteristics in Glioblastoma | HARVARD MEDICAL SCHOOL | F30 | 2020 | 0.11 |
| Exploring the Role of Mitochondrial Fission in Pancreatic Tumorigenesis | UNIVERSITY OF VIRGINIA | R01 | 2017 | 0.11 |
| SBIR Phase I Topic 402 - Artificial Intelligence-Aided Imaging for Cancer Prevention, Diagnosis, and Monitoring | PHENOMAPPER, LLC | N43 | 2020 | 0.11 |

**Cluster 45:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| National Center for Biomedical Ontology | STANFORD UNIVERSITY | U54 | 2014 | 0.04 |
| SCH: INT A.Soclotechnilcal Systems Systems Approach for Improving Tuberculosis Diagnostics Using Mobile Health Technologies | UNIVERSITY OF MASSACHUSETTS LOWELL | R01 | 2019 | 0.032 |
| Computational Methods for Enhancing Privacy in Biomedical Data Sharing | BROAD INSTITUTE, INC. | DP5 | 2020 | 0.029 |
| Protege: An Ontology-Development Platform for Biomedical Scientists | STANFORD UNIVERSITY | R01 | 2016 | 0.028 |
| A Resource for Biomedical Ontologies and Knowledge Bases | STANFORD UNIVERSITY | P41 | 2010 | 0.028 |

**Cluster 46:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Designing Visually Accessible Spaces | UNIVERSITY OF MINNESOTA | R01 | 2018 | 0.11 |
| A Visual Assessment System for Retinal Function/Drug Discovery | AFASCI, INC. | R41 | 2015 | 0.11 |
| Towards cortical visual prosthetics | BOSTON CHILDREN'S HOSPITAL | R21 | 2010 | 0.11 |
| Perceptual bases of visual concepts | UNIVERSITY OF IOWA | R01 | 2010 | 0.11 |
| VISUAL OBJECT RECOGNITION OF CATEGORIES AND EXEMPLARS | UNIVERSITY OF MINNESOTA TWIN CITIES | R03 | 2001 | 0.1 |

**Cluster 47:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Bioinformatics for post-traumatic stress | UNIVERSITY OF MINNESOTA | R01 | 2020 | 0.049 |
| ABCD-USA Consortium: Data Analysis Center | UNIVERSITY OF CALIFORNIA, SAN DIEGO | U24 | 2019 | 0.041 |
| ABCD-USA Consortium: Research Project | UNIVERSITY OF CALIFORNIA, SAN DIEGO | U01 | 2019 | 0.04 |
| Characterizing Trauma Outcomes: From Pre-trauma Risk to Post-trauma Sequelae | BOSTON UNIVERSITY MEDICAL CAMPUS | R01 | 2020 | 0.039 |
| Assisted Identification and Navigation of Early Mental Health Symptoms in Youth | KAISER FOUNDATION RESEARCH INSTITUTE | R56 | 2018 | 0.036 |

**Cluster 48:**

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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 |
| Environmental Modifications in sub-Saharan Africa: Changing Epidemiology, Transmission and Pathogenesis of Plasmodium falciparum and P. vivax Malaria | UNIVERSITY OF CALIFORNIA-IRVINE | U19 | 2019 | 0.4 |
| Malaria Operations Research to Improve Malaria Control and Reduce Morbidity and Mortality in Western Kenya | TMLIVERPOOL SCHOOL OF TROPICAL MEDICINE | U01 | 2020 | 0.4 |
| Towards noninvasive diagnosis of malaria | CHILDREN'S HOSP OF PHILADELPHIA | R21 | 2020 | 0.4 |

**Cluster 49:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Using Narrative Data to Enrich the Online Medical Record | COLUMBIA UNIVERSITY HEALTH SCIENCES | R01 | 2004 | 0.051 |
| Learning from patient safety events: A case base tool kit | UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON | R01 | 2018 | 0.041 |
| UMLS ENHANCED DYNAMIC AGENTS TO MANAGE MEDICAL KNOWLEDGE | UNIVERSITY OF ARIZONA | R01 | 2003 | 0.038 |
| Real-time detection of deviations in clinical care in ICU data streams | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2017 | 0.037 |
| Data Structuring and Visualization System for Neuro-oncology | UNIVERSITY OF CALIFORNIA LOS ANGELES | R01 | 2010 | 0.035 |

**Cluster 50:**

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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 |
| Advanced approaches to protein structure prediction | UNIVERSITY OF MICHIGAN AT ANN ARBOR | R35 | 2020 | 0.17 |
| PREDOCTORAL FELLOWSHIPS FOR STUDENTS WITH DISABILITIES | PRINCETON UNIVERSITY | F31 | 2004 | 0.16 |
| Alignment-independent Classification of Proteins | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2007 | 0.16 |
| COMPUTER ANALYSIS AND PREDICTION OF PROTEIN STRUCTURE | UNIVERSITY OF CALIFORNIA SAN FRANCISCO | R01 | 2003 | 0.15 |

**Cluster 51:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| 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 | 0.059 |
| Identifying Risk Factors for Antibiotic Resistance via Integration of Epidemiology and Metagenomics | UNIVERSITY OF TX MD ANDERSON CAN CTR | K01 | 2020 | 0.051 |
| Interactions between Gut Microbiome Natural Products and Intestinal Helminths | OREGON STATE UNIVERSITY | R21 | 2019 | 0.049 |
| Bayesian Machine Learning Tools for Analyzing Microbiome Dynamics | BRIGHAM AND WOMEN'S HOSPITAL | R01 | 2020 | 0.049 |
| Computational Studies of Virus-host Interactions Using Metagenomics Data and Applications | UNIVERSITY OF SOUTHERN CALIFORNIA | R01 | 2020 | 0.048 |

**Cluster 52:**

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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 | 0.42 |
| Combined Cardiopulmonary Failure in COPD: SPIROMICS HF | COLUMBIA UNIVERSITY HEALTH SCIENCES | R01 | 2020 | 0.39 |
| Predictive Modeling with Clinical and Genomic Data in COPD | BRIGHAM AND WOMEN'S HOSPITAL | K08 | 2014 | 0.38 |
| Machine Learning Development for Subtyping COPD | BRIGHAM AND WOMEN'S HOSPITAL | K25 | 2020 | 0.38 |
| Autoimmunity as a Mechanism for Atherosclerosis in COPD | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | K23 | 2019 | 0.38 |

**Cluster 53:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| The Molecular Underpinnings of Complex Social Behavior | ROCKEFELLER UNIVERSITY | R35 | 2020 | 0.086 |
| Neural Circuit Mechanisms of Social Homeostasis in Individuals and Supraorganismal Social Groups | SALK INSTITUTE FOR BIOLOGICAL STUDIES | DP1 | 2020 | 0.08 |
| Studying how the hippocampal-prefrontal-hypothalamic circuit encodes social dominance | SALK INSTITUTE FOR BIOLOGICAL STUDIES | K99 | 2020 | 0.071 |
| From Cells to Societies: Mechanisms by Which Microbial Parasites Control Host Phenotypes | PENNSYLVANIA STATE UNIVERSITY-UNIV PARK | R01 | 2020 | 0.07 |
| Regulation of social aggression through hippocampal CA2 inputs to lateral septum | COLUMBIA UNIVERSITY HEALTH SCIENCES | R01 | 2020 | 0.067 |

**Cluster 54:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Analysis of mRNA Polyadenylation across Species and Tissues | UNIV OF MED/DENT OF NJ-NJ MEDICAL SCHOOL | R01 | 2012 | 0.1 |
| Gene Prediction by Markov Models and Complementary Methods | GEORGIA INSTITUTE OF TECHNOLOGY | R01 | 2014 | 0.089 |
| Informatics Platform for Mammalian Gene Regulation at Isoform-level | NORTHWESTERN UNIVERSITY AT CHICAGO | R01 | 2015 | 0.063 |
| Informatics platform for mammalian gene regulation at isoform-level | NORTHWESTERN UNIVERSITY AT CHICAGO | R01 | 2014 | 0.063 |
| Comparative Genomics to Identify Functional Blocks & HGT | UNIVERSITY OF CALIFORNIA BERKELEY | R01 | 2008 | 0.061 |

**Cluster 55:**

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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 | 0.26 |
| Informatics Techniques to Optimize Mammography for Aging Populations | UNIVERSITY OF WISCONSIN-MADISON | R01 | 2016 | 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 |
| Background parenchymal uptake (BPU) on molecular breast imaging as a novel breast cancer risk factor | MAYO CLINIC ROCHESTER | R21 | 2016 | 0.23 |
| Using Markov Decision Processes to Optimize Breast Biopsy Decision Making | UNIVERSITY OF WISCONSIN-MADISON | R21 | 2009 | 0.23 |

**Cluster 56:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Spinal Epidural Electrode Array To Facilitate Standing and Stepping After SCI | UNIVERSITY OF CALIFORNIA LOS ANGELES | U01 | 2018 | 0.035 |
| Restoring arm and hand motor function with non-invasive spinal stimulation. | NEUROENABLING TECHNOLOGIES, INC. | R43 | 2013 | 0.033 |
| CRCNS: Deep Neural Network Approaches for Closed-Loop Deep Brain Stimulation | MASSACHUSETTS GENERAL HOSPITAL | R01 | 2020 | 0.033 |
| Neural and Kinematic Features of Freezing of Gait for Adaptive Neurostimulation | STANFORD UNIVERSITY | R21 | 2017 | 0.028 |
| Enabling forelimb function with agonist drug and epidural stimulation in SCI | UNIVERSITY OF CALIFORNIA LOS ANGELES | U01 | 2017 | 0.025 |

**Cluster 57:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| A Real-Time Computational System for Detecting ARDS Using Ventilator Waveform Data | UNIVERSITY OF CALIFORNIA AT DAVIS | F31 | 2020 | 0.52 |
| Data-Driven Identification of the Acute Respiratory Distress Syndrome | UNIVERSITY OF MICHIGAN AT ANN ARBOR | K01 | 2020 | 0.5 |
| TREAT ECARDS: Translating Evidence into Action: Electronic Clinical Decision Support in ARDS | ALBERT EINSTEIN COLLEGE OF MEDICINE | R18 | 2020 | 0.48 |
| Rule Based Semantics and Big Data Based Methods for Early Identification of Patients at Risk of Acute Respiratory Distress Syndrome (ARDS) | COMPUTER TECHNOLOGY ASSOCIATES, INC. | R43 | 2017 | 0.48 |
| Acute Respiratory Distress Syndrome after Isolated Traumatic Brain Injury: Platelet Biology, Endothelial Activation, and Mechanical Ventilation | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | K23 | 2020 | 0.47 |

**Cluster 58:**

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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 | 0.098 |
| A TOF, DOI, MRI compatible PET detector to support sub-millimeter neuroPET imaging | UNIVERSITY OF WASHINGTON | R01 | 2019 | 0.082 |
| Machine learning for fast motion compensated quantitative abdominal DCE-MRI | BOSTON CHILDREN'S HOSPITAL | R21 | 2020 | 0.08 |
| Reconstruction Hardware for Real-Time Moving Tabel MRI | MAYO CLINIC | R33 | 2005 | 0.071 |
| Reconstruction Hardware for Real-Time Moving Table MRI | MAYO CLINIC | R33 | 2004 | 0.071 |

**Cluster 59:**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Olfactory and facial markers of developmental risk for psychosis in 22q11 deletion syndrome | UNIVERSITY OF PENNSYLVANIA | R01 | 2020 | 0.13 |
| Ultra-high field GluCEST MRI and MRS in youth at risk for psychosis | UNIVERSITY OF PENNSYLVANIA | R01 | 2020 | 0.12 |
| A Study of the Computational Space of Facial Expressions of Emotion | OHIO STATE UNIVERSITY | R01 | 2014 | 0.12 |
| Automated Facial Expression Analysis for Research and Clinical Use | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2016 | 0.11 |
| 2/5 CAPER Computerized assessment of psychosis risk | NORTHWESTERN UNIVERSITY | R01 | 2020 | 0.11 |