2018 CITRIS SEED FUNDING AWARDS
Fifty highly competitive teams from the four campuses of CITRIS and the Banatao Institute at UC Berkeley, Davis, Merced and Santa Cruz submitted proposals for collaborative research projects. Ten teams will receive a one-time award of up to $60,000 each for interdisciplinary work that can lead to larger research programs and extramural grant proposals.

CONNECTED COMMUNITIES
Visualizing ancient Egyptian landscapes and material culture: Cultural contexts for immersive visualization and VR
Researchers will build 3D and 4D models of ancient Egyptian artifacts and landscapes so they can be navigated in their ancient contexts.
PrincipalInvestigators: RitaLucarelli(UCBerkeley), ElaineSullivan(UC Santa Cruz)

Mapping spatial inequality: Immigrants in poverty and community services
Researchers will build a web app that shows the spatial mismatch between where immigrants live and where community immigrant organizations are.
Principal Investigators: IreneBloemraad(UCBerkeley), VeronicaTerritquez(UCSanta Cruz)

PEOPLE AND ROBOTS
Cloud-based anytime computation of reachable tubes for provably safe unmanned aerial systems traffic management
This project aims to develop a framework and associated tools for fast computation of the space-time reachable sets for multiple networked agents under uncertainty.
Principal Investigators: AbhishekHalderand RicardoSanfelice(UC Santa Cruz), MarkMuellerand ClaireTomlin(UC Berkeley)

A sensor system for robotic monitoring and mapping of plant root and shoot health
Researchers will build an unmanned ground robot to non-destructively monitor plant root size and density using X-ray technology.
Principal Investigators: RezaEhsani(UCMerced), AlirezaPoureza(UC Davis)

HEALTH
WeCare: WiFi-enabled device-free activity monitoring platform for elderly healthcare and smart home automation
Researchers will develop a human–activity monitoring platform that infers users’ daily activities based on how human bodies interfere with ubiquitous WiFi signals.
Principal Investigators: HanZouand MingJin(UCBerkeley), ZhouYu(UC Davis)

Automation and deep learning for diabetic retinopathy screening
This project will develop a program for automated diabetic retinopathy screening at UC Davis Health (UCDH) and deep learning algorithms for detecting diabetic retinopathy at UC Berkeley.
Principal Investigators: GlennYiu(UCDavis MedicalCenter), StellaYu(UC Berkeley)

Predicting cancer patients who develop venous thromboembolism episodes using routine patient care data and machine learning techniques
Using data collected during routine patient care and applying machine learning techniques, researchers will develop predictive models to identify patients with cancer who are at high risk to develop venous thromboembolism (VTE).
Principal Investigators: TedWun(UC Davis Medical Center), PrabhuShankarand Chen-NeeChuah(UC Davis)

SUSTAINABLE INFRASTRUCTURES
Persistent autonomous monitoring for early detection and prediction of wildfires
Researchers will design, deploy, test, and evaluate under real-world scenarios a novel IoT system to enable accurate, timely, and scalable wildfire detection and prediction.
Principal Investigators: KatiaObraczka(UCSanta Cruz), StefanoCarpin(UC Merced), ScottStephens(UC Berkeley)

Smart road corridors by meso-scale in-pavement distributed infrastructure sensing
This project will use a dynamic distributed fiber optic sensor technology as a novel system for vehicle detection and behavior analysis for complex road junctions and busy road corridors.
Principal Investigators: KenichiSoga(UC Berkeley), JohnHarvey(UC Davis)

Using smart city and building-specific air quality data for improved indoor air quality and building energy efficiency
Sensors providing building-specific air quality data will be used to improve natural ventilation efficiency and better optimize building control systems to ensure safe indoor air quality and improve energy efficiency.
Principal Investigators: JovanPantelic(UC Berkeley), MarkModera(UC Davis), WolfgangRogge(UC Merced)