		en estre seen y and jest on a sum arimente	NerseQMO and servels	[]
		spectroscopy and isotope experiments, basic mechanisms of carbon-mineral and	NanoSMS) and sample	
			preparation (microtoming, FIB)	
		aggregation formation can be investigated		
		that will feed into next-generation		
		mathematical models. These models need		
		then be verified through wide geographic		
		analyses of regional and continental carbon		
		behavior. Special interest pertains to the		
		properties and behavior of fire-derived		
		pyrogenic carbon in its effects on soil		
		carbon dynamics and global carbon cycles.		
Peter Hess, Biological and Environmental Engineering, Cornell University	(3) Land-Atmosphere	The research addresses fundamental	Someone with quantitative	More specifically skill in
(https://bee.cals.cornell.edu/people/peter-hess)	Biogeochemical Nitrogen Cycling:	questions regarding the interaction	training in a physical science	computing is necessary.
	Climate and Air Pollution	between the biogeochemistry of the	(physics, atmospheric science)	Knowledge of large scale
		nitrogen cycle and the resulting impacts on	or mathematics. At any rate	computing, big data,
		dimate and air-quality. It addresses how	knowledge of mathematics and	atmospheric science,
		the nitrogen cycle will change in the future	hopefully some statistics is	biogeochemistry, and Earth
		as the dimate changes, emissions change	necessary. Also good	System modeling would be a
		and agricultural changes. The research	knowledge of English is	plus.
		involves simulating various aspects of the	important.	
		nitrogen cycle and agriculture within an		
		Earth System model.		
Harold van Es, School f Integrative Plant Science, Soil and Orop Sciences	(4) Climate Change, Soil Health	My program is working on important	In terms of the technical	I would be looking for
Section, Cornell University (https://scs.cals.cornell.edu/people/harold-van-es)	and Cropping Systems	aspects related to climate change,	background, I would be looking	someone who has strong
		agriculture, and digital solutions. We have	for a person who has a strong	background in statistics
		developed an assessment and management	background in soil science and	(including familiarity with R
		framework for soil health that allows	understands agricultural	software) and has some
		cropping systems to be more productive	systems. In addition, the person	programming skills.
		and resilient to climate change. We have	needs to have a quantitative	
		also developed computational technology	interest in terms of the	
		that allows for more efficient use of	application of digital	
		nitrogen fertilizer using weather, soil, and	technologies to soils and	
		crop management inputs, which allows for	agronomy.	
		greater production efficiencies as well as		
		reduced impacts of greenhouse gas		
		emissions and water contaminants.		
David Wolfe, School of Integrative Plant Science, Horticulture Section, Cornell	(5) Agricultural Soil and Water	I currently have research on-going that		- English proficiency
University (https://hort.cals.cornell.edu/people/david-wolfe)	Management for Changing	might succinctly be described as	\rightarrow	- Excel
	Dimate			- crop production,
		l have a postdoc		agroecology, research
		working on NYS water resources-		experience (particularly
		agriculture-climate change, and there is		maize, and/or vegetable
	1		1	-
		more to be done there than 1 postdoc can		crops)

		Conservancy on various research concepts asso carbon sequestration and soil health etc Another area is policy interests at international level- developing mechanisms for agriculture, forestry, other land uses (AFOLU) to be part of COP negotiations and address national and international mitigation goals. Planning a major side event for the next COP (in Bonn, Germany about a year from now).		sampling and analyses experience, particularly in relation to soil organic matter, soil carbon sequestration, and soil health <i>Other qualifications of</i> <i>interest:</i> - water management in crop production - role of agriculture, forestry, other land uses (AFOLU) in climate change mitigation and policy
Natalie Mahowald, Earth and Atmospheric Sciences, Cornell University (<u>http://www.eas.cornell.edu/people/profile.cfm?netId=nmm63</u>)	(6) Aerosol-Climate- Biogeochemistry Interactions	Recent studies have highlighted the role of natural and anthropogenic aerosols and their impacts on biogeochemistry, especially the carbon cycle and their resulting impact on climate. Indirect changes in aerosols can also result from land use, including changing emissions from wild fires, desert dust or forests as well as direct emissions from agriculture, which can impact climate and biogeochemistry. Our group focuses on addresses these poorly understood processes.	Requires atmospheric science, physics, chemistry or engineering background	Good computer skills
Toby Ault, Earth and Atmospheric Sciences, Cornell University (http://www.eas.cornell.edu/people/profile.cfm?netid=tra38_eng)	(7) Quantification of Megadrought Risk	Megadroughts are prolonged periods of aridity unlike anything seen during the historical period, and they have been linked to the demise of several preindustrial civilizations. Mounting evidence suggests that the risks of such events during dimate change is increasing due to rising temperatures and dynamic circulation changes throughout many of the world's subtropical dry zones. This project will work towards quantifying global megadrought risk on near-term (decadal and multidecadal) time horizons using a combination of statistical techniques and new numerical model simulations. The postdoc will assist in both the data analysis and climate modeling aspects of this work.	In general, the postdoc should be comfortable working in a linux environment and should know at least one of the following (or related) interpreted languages: Matlab, Python, R, IDL, NCL, or equivalent. Proficiency in any of these languages is largely transferable, so knowing one (or a related one not listed here), would be sufficient. In terms of background: interest/experience with chaotic dynamical systems, multivariate statistics, or applied physics	

			would make for a strong post- doc.	
Ying Sun, School of Integrative Plant Science, Soil and Orop Sciences Section, Cornell University (https://scs.cals.cornell.edu/people/ying-sun)	(8) The Application of Chlorophyll Ruorescence for Crop Stress Monitoring and Yield Prediction	Chlorophyll Fluorescence (F) is a direct probe of photosynthesis and has the potential to be applied for crop stress monitoring and yield prediction. However, the quantitative relationship of F with plant physiology and crop yield likely differs among crop cultivars and varies with environmental conditions, and management practices. This project aims to develop a predictive understanding of F dynamics and use the understanding gained to guide practical applications of F measurements from different observational platforms in crop stress management and yield prediction.	The postdoc is expected to have general background in ecology-, agriculture-, computational- related fields.	Preference would be given if the postdoc have skills in machine learning technique or/and field measurement.
Michael Core, School of Integrative Plant Science, Plant Breeding and Genetics Section, Cornell University (<u>https://plbrgen.cals.cornell.edu/people/michael-gore</u>)	(9) Deep-Learning for High- Throughput Plant Phenotyping	We will develop an unmanned aircraft system (UAS) platform to collect images over experimental crops, and aim to develop deep learning algorithms to identify plant pathologies and morphologies at an accuracy that is on par with human experts. The UAS will consult human experts in ambiguous cases and gradually learn to make decisions autonomously.	This postdoctoral associate position involves the phenotyping of foliar diseases in maize with several complementary ground- and aerial-based methods in the field. The postdoc will computationally process collected images along with geospatial information and apply deep learning algorithms for reliable identification of foliar diseases. The ideal candidate will have expertise in remote sensing, image processing, deep learning, and statistical genetics. Responsibilities will include research in the collection and processing of geospatial and image data, statistical dissection, prediction and validation of disease phenotypes, and training scientists and students. The position will involve dose collaboration with a dynamic	A Ph.D. in remote sensing, statistics, computer programming or related discipline with at least 2 years of intensive training in statistical methods. Programming (R/ Java/ Python/ Julia), image (ImageJ / Agisoft/ Pix4D) analysis skills, development and/or application of deep learning algorithms, and working knowledge of remote sensing, geospatial, and statistical approaches. Excellent interpersonal and communication skills with a strong publication record in the field of remote sensing and statistical genetics.

Mark Sorrells, School of Integrative Plant Science, Plant Breeding and Genetics Section, Cornell University (<u>https://plbrgen.cals.cornell.edu/people/mark-sorrells</u>)	(10) Incorporating High Throughput Phenotypes and Environmental Covariates in Genomic Prediction Models to Accelerate Genetic Gain in response to Climate Change	This project would use correlated phenotypes from repeated aerial imaging of breeding research plots and environmental parameters as components of genomic prediction models to increase prediction accuracy. We have data sets and computing facilities to use in these analyses and can provide the expertise for training in the necessary methods. We have published more than a dozen peer- reviewed articles on genomic selection methods including one using environmental covariates that enables the	team of robotics engineers, computer scientists, statistical geneticists, and plant pathologists. The person should have deep knowledge of statistics and quantitative analysis. A good working knowledge of genetics and breeding would be desirable.	Ability to program in R and manage large datasets, aerial image analysis of plants.
		prediction of performance in untested environments expected with climate change.		
Marc Fuchs, School of Integrative Plant Science, Plant Pathology and Plant- Microbe Biology Section, Cornell University (https://pppmb.cals.cornell.edu/people/marc-fuchs)	(11) Improving Our Understanding of Grapevine Red Blotch-Associated Virus	Among the recently described plant viruses is grapevine red blotch-associated virus, a monopartite single-stranded DNA virus. Little is known about the interaction of this virus with its natural host and treehopper vector. Using cutting-edge microbiological and molecular techniques, we will advance our knowledge of the virus interface with its host and vector.	I am anticipating the postdoc to have excellent knowledge of plant pathology and experience in molecular biology. More importantly, enthusiasm and dedication to excellence are expected.	
Christine Smart, School of Integrative Plant Science, Plant Pathology and Plant- Microbe Biology Section, Cornell University (https://pppmb.cals.cornell.edu/people/christine-smart)	(12) Understanding Genetic Diversity in Pathogens of Vegetable Crops	Plant diseases such as cucurbit downy mildew, Phytophthora blight, late blight of tomato and potato, and tomato leaf mold are having a major economic impact on vegetable production. My lab studies pathogen diversity to identify effectors that are present in unique pathogen populations, and also to track pathogens geographically. Be identifying the effector complement of each pathogen population, it is possible to determine the plant resistance genes that will be effective against each population, which will enhance disease control.	The postdoc should have a working knowledge of plant pathology (preferably a PhD98 ref	

Dan Buckley, School of Integrative Plant Science, Soil and Crop Sciences Section, Cornell University (<u>https://scs.cals.cornell.edu/people/daniel-buckley</u>) (13) Metagenomic and Isotopic Techniques in Microbiome Identification Soil microbiomes provide ecological services which underlie the sustainability of both agricultural and ecological systems, and yet the vast majority of soil microorganisms remain poorly characterized. We are using a suite of metagenomic and isotopic techniques to identify dominant members of soil microbiomes and to characterize their impacts on soil health, plant productivity, and on the terrestrial carbon cycle.

Candidates should be familiar with the analysis of highthroughput DNA sequencing data generated from microorganisms or microbial communities. They should have familiarity working with either amplicon sequence data, comparative genomic data, or metagenomic data. Successful applicants will have a background in microbial ecology, environmental microbiology or allied field and experience in bioinformatic analysis of DNA sequence data. Experience with R and Python, and experience working with computer scripts necessary for bioinformatics is required.

The post-doc should have a Ph.D. in Microbiology or an allied field with specific research experience that relates to either the genomics, ecology, physiology, or

		function and the Associate of any other set of	
		fruit quality. A variety of experimental	
		techniques including transcriptome	
		analysis, cellular calcium imaging, and	
		electrophysiology methods will be used.	
Todd Walter, Biological and Environmental Engineering, Cornell University	(16) Climate Change Impacts on	This past summer much of New York State	
https://bee.cals.cornell.edu/people/m-todd-walter	Agricultural Water Resources	experienced a severe drought, which	
	Management	resulted in considerable crop loss.	
		Ironically, in the previous year there was	
		too much rain early in the growing season	
		and many crops drowned and had to be	
		replanted. This project would consist of	
		three activities: (1) use the hydro-	
		meteorological record (e.g., rainfall, snow,	
		stream discharge, etc.) across New York	
		State (NYS) in combination with stochastic	
		and/or simulation models to determine the	
		historical frequency and spatial distribution	
		of droughts/floods that result in crop	
		failures; (2) apply stress tests to the	
		previous analysis to determine how	
		Itural systems are to	
		changes in weather extreme magnitudes	
		and frequencies; and (3) test the capacity	
		of management decisions (e.g., adopt	
		irrigation, increase soil water holding	
		capacity with carbon amendments, etc.) to	
		potentially mitigate water-related crop	
		risks. This project would interface with	
		those being led by Drs. DeGaetano, Ault,	
		van Es, and Ault.	
Todd Walter, Biological and Environmental Engineering, Cornell University	(17) Climate Change Impacts on	My research group and colleagues at	
https://bee.cals.cornell.edu/people/m-todd-walter	Water Quality in Agricultural	Cornell have been working on strategies for	
https://bee.cals.comein.edu/people/milloud-waiter	Watersheds	mitigating nonpoint source pollution from	
	vvaler srieus		
		agricultural runoff based on watershed	
		hydrology. We have developed a	
		prototype model and web interface that	
		predicts runoff-generating locations	
		throughout a watershed; currently we have	
		set up this model for the Owasco Lake	
		watershed in central New York. This	
		project would expand the scope of the	
		model statewide and apply the historical	
		weather records in order to identify the	
		frequency, duration, and seasonality of	

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		food applications as alternatives to chemical preservatives to inhibit the growth of pathogens and spoilage organisms. Little is known about the mechanisms of this inhibition. This project would leverage metagenomic analysis to identify potential genes necessary for inhibition by comparing dosely related lactic acid bacteria strains that are and are not inhibitory of eukaryotic spoilage organisms.	some experience in cloning, transcriptome analysis, and general molecular biology techniques. Experience in dairy fermentations and working with lactic acid bacteria and/or bacteriophage is preferred, but not required	The ability to conduct independent research The ability to lead a team consisting of graduate (MS, PhD) and undergraduate student
Sam Alcaine, Food Science, Cornell University (<u>https://foodscience.cals.cornell.edu/people/sam-alcaine</u>)	(23) Visualization of Bacterial Contamination Patterns in Food	We know that pathogenic bacteria regularly contaminate food, but know little about the routes (surface, internalization, etc). This project will involve engineering bacteriophage to express visual reporters that can be seen, as a color bloom, on the surface or within a food (model food will be cheese) if the pathogen of interest is present. This will potentially allow investigators to identify routes of contamination in food processing plants and improve food safety.	The candidate should have good basic microbiological skills and some experience in cloning, transcriptome analysis, and general molecular biology techniques. Experience in dairy fermentations and working with lactic acid bacteria and/or bacteriophage is preferred, but not required	Excellent written and communication skills The ability to conduct independent research The ability to lead a team consisting of graduate (MS, PhD) and undergraduate students
Martin Wiedmann, Food Science, Cornell University (https://foodscience.cals.cornell.edu/people/martin-wiedmann)	(24) Development and Implementation of Food Safety Genomics Tools	This project will involve the development or implementation of bioinformatics and/or genomics tools that can be used to improve food safety and reduce microbial food spoilage. For example, scholars may (i) develop and implement new approaches that can be used to determine genetic signatures that can be used to predict the source of a foodborne contaminant; (ii) develop approaches that can be used to identify abnormalities in raw materials based on metagenomic signatures; or (iii) perform whole genome sequencing (WGS) and analyze WGS data to characterize pathogen or spoilage organism transmission in food processing plants.	Expertise in bioinformatics, molecular biology, genome analyses, GIS data analyses or related fields.	Good written and oral English communication skills, including expertise in publishing peer-review papers in English journals, are also required.
Sara Pryor, Earth and Atmospheric Sciences, Cornell University (<u>http://www.eas.cornell.edu/people/profile.cfm?netid=sp2279_eng</u>)	(25) Improved Understanding of, and Smulation of, the Causes of Intra-Annual to Inter-Annual	The feasibility of wind energy installations at given locations are dictated in large part	Experience with numerical modeling and high-performance computing (i.e. Running models	PhD in Atmospheric Science and/or Mechanical Engineering. Strong analytical

	Variability in Wind Resources and Operating Conditions	Variability of, and uncertainty in, that resource increase project risk (and uncertainty in electrical power production). We seek to improve prediction of the wind farm lifetime resource and operating conditions by developing and optimizing efficient numerical (computational) tools.	such as WRF on high performance computing platforms, doud or conventional). It would be desirable to have also experience with model performance methods and of course wind energy resource assessments.	skills and if an Mech Eng graduate at least one course in atmospheric boundary layers (or similar).
Lindsay Anderson, Biological and Environmental Engineering, Cornell University (<u>https://bee.cals.cornell.edu/people/catherine-anderson</u>)	(26) Hybrid Statistical Optimization Methods for Stochastic Resources in Power Systems	Incorporating data analytic approaches with stochastic optimization, to accelerate operational decisions on large power networks with significant renewable resources.	Technical background should include some experience in formulating and solving optimization problems. Solutions are computational, so some scientific computing background is important. IN my lab we work with Matlab, Python and (occasionally) GAMS	No specific qualifications, other that a PhD in a quantitative field could be math, engineering, operations research, statistics. Some background in energy applications is helpful, but mathematically strong researchers can generally pick that up fairly quickly.
Lindsay Anderson, Biological and Environmental Engineering, Cornell University (<u>https://bee.cals.cornell.edu/people/catherine-anderson</u>)	(27) Bi-level Optimization Under Uncertainty to Incorporate Utility Scale Renewables with Demand Sde Flexility and Distributed Resources	This project will investigate bi-level optimization algorithms to model interactions between transmission and distribution level components to develop synergistic operational strategies.	Technical background should include some experience in formulating and solving optimization problems. Solutions are computational, so some scientific computing background is important. IN my lab we work with Matlab, Python and (occasionally) GAMS	No specific qualifications, other that a PhD in a quantitative field could be math, engineering, operations research, statistics. Some background in energy applications is helpful, but mathematically strong researchers can generally pick that up fairly quickly.
Philip SLi, Center for Male Reproductive Medicine & Microsurgery, Cornell University (http://urology.weillcornell.org/philip-s-li)	(28) Male Infertility Microsurgical Big Data Research for Male Reproductive Medicine and Microsurgery	The project focuses on Male Infertility Microsurgical Data Research for Male Reproductive Medicine and Microsurgery. Microsurgical data analytics training is essential for clinical audiologists specializing in male infertility. Success in clinical microsurgery depends on practice in the laboratory and data analytics with technology. Microsurgery for male infertility is among the most technically and mentally challenging of microsurgical procedures, which generates big amount of unstructured and structured data for	Domain knowledge in Male Reproductive Medicine and Microsurgery; proficiency in SPSS, SAS, or R. Strong skills in data cleaning, data mining, data analysis and MIM HPC tools.	Cinical / Resident doctor with Master degree, PhD candidate, Post-doc.

		advanced research and dinical usage. Most male infertility micro-procedures are performed under 10 to 25 power magnification and required all image to be stored and processed in high performance computing. In contrast to conventional post surgery evaluation, tones of surgical procedures are as dependent on technical perfection and technology application. Coordination, dexterity and steadiness of the microsurgery can only be developed with extensive practice in the laboratory with strong technical skills, especially with data mining and analytics background.		
Liang Huang, EECS, Oregon State University (http://web.engr.oregonstate.edu/~huanlian/)	(29) Natural language processing, computational biology, machine learning	Project Background: Smultaneous speech- to-speech translation is just like real-time interpreters: you have to start translation before the source sentence ends, and gradually translates as more input is available. Example usage: United Nations. Project Goals: Build the first simultaneous speech-to-speech translation framework and software using deep learning and reinforcement learning. Publish 2 top conference papers.	required: Strong in algorithms design and analysis, esp. dynamic programming Strong coding experience (Python, C/C++, Java). Experience in deep learning toolkits (Theano, Torch, Tensorflow, etc.) Experience in machine translation. recommend: Experience in machine learning (esp. reinforcement learning)	PhD Candidate; Post-doc

Stephen Ramsey, Department of Biomedical Sciences, Oregon State Univertiving 0:

		developing machine learning methods to identify and functionally characterize		
		human genetic variants using large-scale datasets from human population genetic		
		studies. Project Goals: We propose to		
		develop and deploy an IBM DB2 Cloud-		
		based system that would accelerate and		
		advance human population genetics		
		studies. More specifically the system would		
		enable life scientists to search for, rank,		
		and view evidence for candidate causal		
		genetic variants within regions of the		
		genome that have been implicated in		
		genetic association studies for traits of		
		interest (for example, risk of heart attack or		
		stroke). The system would incorporate		
		advances in machine learning that have		
		originated in our lab for discriminating		
		functional from nonfunctional genetic		
		variants. The Y-100 scholar would work		
		with our team of three researchers (the Pl		
		and three computer science graduate		
		students from China), and would		
		specifically work on enabling the system		
		that we are building to leverage IBM DB2 to		
		enable efficient querying of large-scale		
		population genetics datasets (10-100 billion		
		rows). Industry: Public Health		
		(Computational biology; genomics;		
		machine learning; population genetics;		
		doud computing)		
Brett Tyler; Chris Sullivan, Center for Genome Research and Biocomputing,	(31) Genome sequence	Project Background: The skyrocketing	Knowledge of CUDA and GPU	PhD candidate, Post-doc,
Oregon State University (<u>http://bpp.oregonstate.edu/tyler</u>)	alignment and assembly is a	amounts of genomic data generated by	technologies. Skill Set: Ability to	Junior professor
	major bottleneck. New advances	modern DNA sequence technologies are	work on a Linux based operating	
	in hardware architecture allow	creating major data processing bottlenecks.	system, IBM Power8 processors,	
	for changes in how data can be	The most important processing tools use	IBM CAPI, IBM 822LC Server,	
	processed. This project will re-	sequence alignment and assembly, for	NVIDIA NVLink P100 Pascal	
	write genome assembly	example to assemble full genomes.	using.	
	algorithms to run on the IBM	Currently, these tools use many cores,		
	Power8 with NVIDIA NVLink	require much memory and take weeks to		
	GPUs using the CAPI	run. This project will use IBM POWER8		
	GPUs using the CAPI interconnect.	run. This project will use IBM POWER8 technology with GPUs to attack this bottleneck. The OGRB has purchased a new		

IBM S822LC server with two 10-core
Power8 processors, two NVLink P100
Pascal GPUs and 1TB of local RAM. The
CGRB plans to use the new hardware with
the CAPI interface to connect the GPU and
in order to change the way genome
sequence data can be processed. The CGRB
has spent the last year working with the
IBM to compile and help port scientific
software to the Power8 processors with
NVIDIA K80 GPUs
(https://www.ibm.com/blogs/systems/ibm-
power8-and-osu-advance-genomics-
research-through-porting/). These older
systems with card based GPUs work great
for data on the CPU and simulations on the
GPU. The new machine with GPUs using
the CAPI interface will accelerate the way
data can be processed on the GPU. Project
Goals: The main goal of this project is to
port a tool that uses De Bruijn graph theory
to assemble genomes to the IBM Power8
with CAPI NVLink GPU processing using
CUDA. The final genome assembly tool will
take advantage of the multiple cores within
the GPU to dramatically decrease
processing time. To take full advantage of
the CUDA Cores in the GPU the tool will
move data through the CAPI interface to
interact with system memory to reduce
needed GPU memory footprint. Finally we
will use of the Power8 cores to manage the
data moving onto and off of the GPU to
ensure throughput. Industry: Genome
assembly tools are used throughout
biomedical research and increasingly for
genome-informed personalized health care.
The industry aims to go from patient
sample to assembled genome sequence
within 24 hours. This can only be achieved
by adapting assembly tools onto new
hardware technologies.

Chan Li - Ochard of Information and Commuter Original Linitary	(20) Classella annu latana ati sa		E martine in data management	Dest. de su husien Dreference
Chen Li, School of Information and Computer Science, University of	(32) Ooudberry: Interactive	We are developing a new, general-purpose	Expertise in data management,	Post-doc; Junior Professor
California-Irvine	Analytics and Visualization of	to support interactive data analytics and	hands-on programming skills	
(<u>http://www.ics.uci.edu/faculty/profiles/view_faculty.php?ucinetid=chenli</u>) Mike Carey, School of Information and Computer Science, University of	Large-Scale Fast Data	to support interactive data analytics and data visualization over large amounts of		
California-Irvine		fast data. The Ooudberry system aims to		
(http://www.ics.uci.edu/faculty/profiles/view_faculty.php?ucinetid=mjcarey)		provide several unique and important		
[1] http://doudberry.ics.uci.edu		capabilities: Scalability, Interactivity,		
[2] http://doudberry.ics.udi.edu/demos/twittermap/		Visualization, Ourrency. A system on 500		
[2] http://doudberry.lcs.ud.edu/demos/twitternap/		million tweets with live data being ingested		
		is available at [2]. We will study various		
		open challenges in this exciting research		
		direction, including: (1) A domain-		
		independent middleware layer to translate		
		frontend Restful requests to queries to the backend AsterixDB; (2) Cache module and		
		replacement policies at the middleware; (3)		
		Intelligent query slicing to reduce initial		
		query responsive time and return results		
		progressively; (4) Making the middleware		
		distributed across multiple machines; (5)		
		Improving the AsterixDB LSM storage and		
		indexing to reduce computational cost per		
		query; and (6) Supporting continuous		
		queries to reduce costs of compilation and		
		deployment.		
 Photod Mohrotro, Pohool of Information and Computer Original University of	(33) Innovation in Data Cleaning	The key insight on which this proposal is	I	I
Sharad Mehrotra, School of Information and Computer Science, University of	(55) Innovation in Data Cleaning	based is that big data analytics in		
California-Irvine		streaming, real-time, and interactive		
(http://www.ics.uci.edu/faculty/profiles/view_faculty.php?ucinetid=smehrotr)		settings requires a paradigm shift in how		
		data deaning is performed Proposed		
		research will explore 2 new innovations to		
		help advance data deaning for Big Data		
		analysis. Thg hp 66.89 260.33 Tm0 g0 Gr; a pr	,	
		approach to ER to support progressive	1	
		analysis. Throposed research will		
		260.33 Tm0 g] TJETQq508.75 37.824 188.66		
		200.33 1110 yj 10±10(1300.7337.824 188.00		
		when cleaning is based on complex logic		
		possibly requiring dynamic acquisition of		
		additional contextual information. The		
		second is the analysis-aware cleaning that		
		is developed for structured queries (e.g.,		

	nuous query scenarios that are issued	
on top	p of static and streaming data. The	
project	ct will exploit a concrete context to	
guide th	the research exploration viz., line	
analysis	rsis of social media data.	