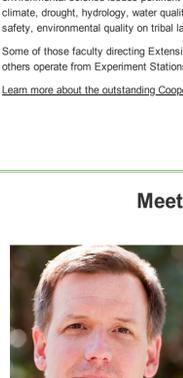




# The Critical Zone

CLIPS FROM THE DEPARTMENT OF ENVIRONMENTAL SCIENCE

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## Notes from Dept Head

Friend,

One of the things that makes our department different from many other environmental science departments is that we have a specific mission to bring environmental science to people throughout the state of Arizona as a practical means to help solve problems.

This activity, bringing science to bear on practical issues of Arizonan's, is the principal focus of our Cooperative Extension faculty.

We are fortunate in ENVS to have nine Cooperative Extension faculty among our 41 total, which makes our department one of the most active in the area of engaging communities with science.

The specific Extension programs that we have in our department focus on the wide range of environmental science issues pertinent to those living in the semi-arid Southwest, including climate, drought, hydrology, water quality, policy, sustainability, aquaculture, fresh produce safety, environmental quality on tribal lands, and arid and semi-arid agriculture.

Some of those faculty directing Extension programs are located on the UA campus, whereas others operate from Experiment Stations distributed throughout the state.

[Learn more about the outstanding Cooperative Extension programs in ENVS.](#)

*JoCharmo*

## Meet the People



### Welcome, Dr. Dan Ferguson!

Assistant Professor Dan Ferguson joined our department earlier this month, retaining a joint appointment with the Arizona Institutes for Resilience.

He is also the Director of Climate Assessment for the Southwest (CLIMAS).

His research interests include: evaluation of use-inspired environmental research; development of theory and pragmatic approaches to socially-engaged environmental research; and development of knowledge about societal and cultural context for inter- and trans-disciplinary teams and the design and implementation partner engagement strategies.

Click to see his ENVS Profile

## NEW Graduate Student Directory

Learn more about our amazing MS and PhD students!

- ▶ **Photos**
- ▶ **Faculty Advisors**
- ▶ **Research Descriptions**

Click to meet the graduate students in our department!

## Report from the Field & Lab



Click to read the full story

## Mapping Microbes in the Sky Islands

Postdoctoral researcher Gabriele Schiro and undergraduate researcher Adalee Martinez spent this summer collecting dust and soil samples to better understand microbial biogeography in the Sky Islands (as safely as possible following covid-19 precautions).



Click to watch the short video by University of Arizona Research

## PFAS: an Insidious Environmental Contaminant

Doctoral students Matt Bigler and Sarah Van Glubt discuss contaminant transport, specifically per- and polyfluoroalkyl substances (PFAS), and how critical it is to understand these contaminants so we can better clean up our water.

## Virtual Events

## ENVS Colloquium Fall 2020

### Mondays 3:00-4:00 PM

Join us for our departmental colloquium for invited speakers to discuss a variety of topics related to environmental science.

All welcome to attend.

Join us on Zoom!

Click to past recordings and future presentations

## Upcoming Colloquium

- **November 23:** TBD, Dr. Solange Duhamel, University of Arizona Department of Molecular and Cellular Biology
- **December 7:** *NativesOutdoors and the Intersection of Indigenous People and Natural Resource Policy Management*, Dr. Len Neecefer, University of Arizona American Indian Studies and Udall Center for Public Policy, Founder and CEO of NativesOutdoors

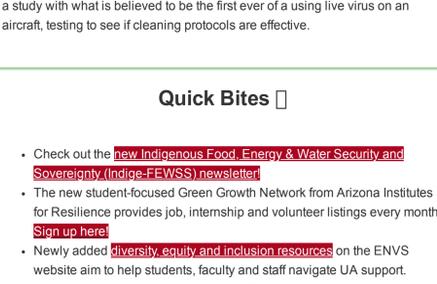
## News Clips



Click to read in Forbes

## UArizona Student Discusses the Obstacles that Strengthen You

In her own words, **environmental science and political science major Charisma Pricilla Quiroz** discusses obstacles she overcomes, as a Native American and Mexican student working her way through college during a global pandemic fraught with civil unrest.



Click to read in Eos

## ENVS Faculty Shows Significance of the Life that Teems Below the Surface

Dr. **Jon Chorover's** article in *Eos*, Science News by the American Geophysical Union, focuses on the complex interactions in Earth's 'living skin,' and how this supports life as we know it.



Click to read in The Atlantic

## ENVS Faculty Featured in The Atlantic

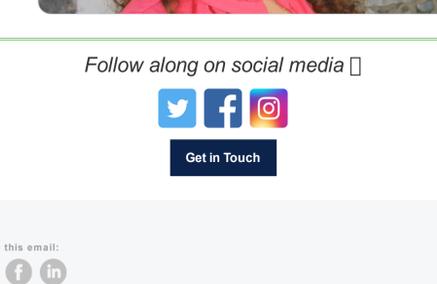
**Drs. Ian Pepper and Charles Gerba** have been waiting 30 years for the chance to use sewage to save the world. Read how these professors helped reopen the University of Arizona campus as safely as possible during the covid-19 pandemic.



Click to read in MIT Solve

## ENVS Doctoral Student Awarded Grant for Protecting Medicinal Plants

Doctoral candidate **Richelle Thomas** was featured in MIT Solve as part of the 2020 Indigenous Communities Fellowship. She was awarded a grant as a Native innovator for assessing the risks from legacy mining to the Diné (Navajo) people through measurement of heavy metal uptake into traditional medicinal plants.



Click to read in Arizona Republic

## Study Finds New Cleaning Protocols in Aircraft Works

**ENVS faculty Dr. Charles Gerba and joint faculty Dr. Kelly Reynolds** partnered with the Boeing Corporation to examine the disinfection of aircraft and risk assessment for control of the new coronavirus. They recently released a study with what is believed to be the first ever of a using live virus on an aircraft, testing to see if cleaning the protocols are effective.

## Quick Bites

- Check out the [new Indigenous Food, Energy & Water Security and Sovereignty \(Indige-FEWSS\) newsletter!](#)
- The new student-focused Green Growth Network from Arizona Institutes for Resilience provides job, internship and volunteer listings every month. [Sign up here](#)
- Newly added [diversity, equity and inclusion resources](#) on the ENVS website aim to help students, faculty and staff navigate UA support.
- Listen to doctoral candidate JoRee LaFrance and her fellow Carson Scholars present in the webinar series [DeStressing the Earth and Ourselves](#)
- Faculty Dr. Charles Gerba and Dr. Kelly Reynolds did a [Q&A on a laundry list of questions](#) about how long germs can survive on garments.

## Recent Publications

**Transport of GenX in saturated and unsaturated porous media** Ni Yan, Yifan Ji, Bohan Zhang, Xilai Zheng, Mark L. Brusseau  
 "GenX is one of the primary replacements for the longer-chain PFAS (e.g., PFOA). There is growing concern over the presence in the environment and the toxicity of GenX and other PFAS replacements. This paper is to our knowledge the first to investigate the sorption and air-water interfacial adsorption of GenX in soil." - Dr. Mark Brusseau

**Life-history strategies of soil microbial communities in an arid ecosystem** Yongjian Chen, Julia W. Nelson, Priyanka Kushwaha, Raina M. Maier, Albert Barberan

**Pharmaceuticals as emerging contaminants in the aquatic of Latin America: a review** Melissa Valdez-Carillo, Leif Abrell, Jorge Ramirez-Hernández, Jaime Reyes-López, Concepción Carreón-Díazconili

**Covalent bonding of aromatic amine daughter compounds of 2,4-dinitroanisole (DNAN) with model quinine products using humus via nucleophilic addition**

Warren M. Kadoyaa, Reyes Sierra-Alvarez, Bhumasamudram Jagadish, Stanley Wong, Leif Abrell, Eugene A. Mash, Jim A. Field

"By the way, coauthor Stanley Wong is an undergraduate who first joined our team as a KEYS Research Internship Program and has around three publications now!" - Dr. Leif Abrell

## Snapshots

Highlights from social media!

**UArizona Environmental Science** @uarizonaenvs · Oct 28 \*\*\*

🎉 Congrats to our PhD student Jason Windingstad for the Peter Birkeland Soil Geomorphology Award 🏆!

👍 I'm interested in understanding how & when the Sonoran soil landscape responded to paleoenvironmental changes in terms of desert formation, erosion, and landform development.



**Karletta Chief** @nativehydro · Oct 23

Pyramid Lake Paiute Tribe Tribal Council just approved the dissertation of my PhD student Edward S. Schuyler Chew (#Mohawk) who grew up on #Tuscarora Nation in NY: "A Collaborative Investigation of #ClimateChange Adaptation for Pyramid Lake Paiute Tribe. Congratulations Dr. Chew!



**Channah Rock** @channah\_rock · Oct 20 \*\*\*

Advanced water reclamation facilities are my favorite!! 💧💧💧 #potablereuse #waterreuse

**Dr. Rivka Fidel** @RivkaFidel · Oct 5 \*\*\*

The past couple of weeks my cats have been very interested in my [soil](#) lab demonstrations, so my students get treated to views like this [#RemoteTeaching](#) [#LabKit](#)

(No chemicals used and no cats were harmed in taking these photos) 1/3

**UArizona Environmental Science** @uarizonaenvs · Oct 23 \*\*\*

🎉 Congrats to faculty Mónica Ramirez-Andreotta (@EnvSci\_G\_Roots)! She was invited to be Associate Editor at

- 1) [@nresearchnews](#) Journal of Exposure Science & Environmental Epidemiology ([nature.com/jes/](#))
- 2) [@LiebertPub](#) Environmental Justice ([home.liebertpub.com/publications/e](#))

...🍷🍷🍷



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