

Hello and thank you for your interest in The University of Arizona's world class Hydrology and Atmospheric Sciences graduate degree programs.

Before you begin the application process, please read our department's website for additional instructions: <http://has.arizona.edu/graduate-information>. This website contains a lot of information about applying to our programs, including a list of undergraduate course prerequisites in mathematics and science for each graduate degree.

**Please note: We cannot guarantee your admission without you formally submitting the online application and going through the review process. We do not review students' transcripts, CVs and records unless an official online application has been submitted. In addition, we cannot waive application fees.**

Below you will find some information about our faculty areas of interest and admission application procedures. These are our core faculty members in their particular area of interest. Visit our website and look in the Directory under Faculty to read their individual profiles and contact them directly: <http://has.arizona.edu/people/core-faculty>.

### **SUBSURFACE HYDROLOGY**

- **Laura Condon** (Large-scale water sustainability and the dynamic behavior of managed hydrologic systems in the context of past development and future climate change)
- **Paul A. "Ty" Ferre'** (vadose zone & geophysical methods)
- **Bo Guo** (Modeling flow in permeable earth materials)
- **C. Larrabee "Larry" Winter** (probably more surface-focused now but possibly some surfacegroundwater interactions)
- **T. C. Jim Yeh** (geostatistical & numerical modeling, development of computer imaging tools for characterizing geological media, contaminant fate & transport)
- **Marek G. Zreda** (cosmogenic isotope hydrogeology, environmental tracers, contaminant fate & transport)

### **SURFACE HYDROLOGY**

- **Victor R. Baker** (fluvial geomorphology, paleohydrology (ancient floods), hydrology of Mars)
- **Ali Behrangi** (remote sensing of hydrology, streamflow simulation, flood, drought, extremes)
- **Hoshin V. Gupta** (water resources systems, stochastic and computer modeling, neural networks)
- **Guo-Yue Niu** (hydrometeorology, ecohydrology, modeling of coupled soil-water-plant processes at various scales)
- **Peter A. Troch** (hillslope, catchment, and river basin hydrology, surface water modeling)
- **C. Larrabee "Larry" Winter** (environmental risk & economic analysis, stochastic/statistical modeling of surface & groundwater flow)

## WATER QUALITY/WATER CHEMISTRY

- **Jennifer C. McIntosh** (isotope chemistry of surface water, groundwater, saline fluids, and natural gas; geochemical and hydrologic modeling)
- **Thomas Meixner** (biogeochemistry, computer modeling at the catchment to basin scale, model calibration)
- **Marek G. Zreda** (cosmogenic isotope hydrogeology, environmental tracers, contaminant fate & transport)

## WATER RESOURCES SYSTEMS/POLICY

- **Hoshin V. Gupta** (water resources systems, stochastic and computer modeling, neural networks)

## NUMERICAL AND COMPUTER MODELING

### **(Ground Water)**

Laura Condon  
Paul "Ty" Ferré  
Bo Guo  
T.-C. "Jim" Yeh

### **(Chemistry)**

Jennifer C. McIntosh  
Thomas Meixner  
(Land-Surface modeling)  
Guo-Yue Niu

### **(Surface Water)**

Hoshin V. Gupta  
Guo-Yue Niu  
Peter A. Troch  
Larry Winter

### **Parameterization of Atmo Models)**

Christopher L. Castro  
Xiquan Dong  
Yang Song (parameterization of vegetation dynamics)

### **(Atmospheric Science)**

Avelino F. Arellano  
Yang Song

## ATMOSPHERIC SCIENCE

- **Avelino F. Arellano** (Coupled observation and numerical modeling to study atmospheric constituents.)
- **Ali Behrangi** (remote sensing, precipitation, fire, hydrometeorology, climate change, drought, heatwaves; model evaluation)
- **Eric A. Betterton** (Environmental pollutants, especially those found in the air and water that might affect people).
- **Christopher L. Castro** (Climate prediction in North America; improving seasonal climate forecasts).
- **Xiquan Dong** (Development and application of ground- and satellite-based sensing techniques).

- **Thomas J. Galarneau** (Synoptic-dynamic and mesoscale meteorology, tropical cyclone formation)
- **Steven L. Mullen** (Predictability, weather analysis and forecasting).
- **Guo-Yue Niu** (Land surface modeling, distributed hydrologic modeling, global and regional climate modeling).
- **Yang Song** (Development, evaluation, application of numerical models to assess interactions between terrestrial biosphere processes and climate change)
- **Xubin Zeng** (Land-atmosphere-ocean interface processes, climate modeling, hydrometeorology).

We are now accepting applications for Fall 2022 semester (starts in January) and Spring 2023 semester (starts in August), and invite you to apply online at the Graduate College website: <http://www.grad.arizona.edu/prospective-students>. The important sections to read are Admissions Requirements, Application Procedures, and Admissions FAQ.

Applications for the fall semester must be completed by January 15. For spring semester admission, the application deadline for international students is August 1, and the deadline for domestic students is October 1. While we will consider admitting students for spring semesters, the budget for Departmental funding of graduate students is typically determined and distributed for fall semester. Students admitted for spring semester are typically not offered funding. For fall semester applicants, only complete applications will be considered for possible funding. It takes our review committee at least a month to review all our applications before making decisions.

Please be advised that our graduate program has the following undergraduate course prerequisites, and **we typically do not admit students with more than four undergraduate course deficiencies. In addition, we do not consider applications unless the applicant has successfully completed (or in some exceptional circumstances, will have completed) at least Calculus II prior to beginning the any of our graduate programs. “Successful completion” means a U.S. grade equivalent of C or higher.**

#### *Hydrology*

- Physical geology: 1 semester
- Fluid mechanics: 1 semester

#### *Hydrology and Atmospheric Sciences*

- College chemistry: 2-semester sequence in inorganic/analytical chemistry
- College physics: 2-semester sequence, one course in mechanics and one course in electricity/magnetism or optics/thermodynamics \*Must be calculus based for Atmospheric Sciences graduate programs
- Mathematics: Calculus 1, calculus 2, vector calculus, and introductory differential equations
- Statistics: 1 semester in statistics or probability theory for the physical sciences or engineering

You should try to complete as many undergraduate course deficiencies as possible at your local university or community college, if possible, before you come to Tucson. If you cannot complete the courses prior to starting at UArizona, you must complete them here at our university during your first year in residence.

At the "Graduate Programs" webpage (<https://grad.arizona.edu/catalog/>), use the search engine to find the various *Hydrology* and *Atmospheric Sciences* programs (MS (thesis or non-thesis options) and PhD) offered by our Department.

When you visit our webpage (<http://has.arizona.edu>), our faculty are listed under "People". Please note that primary faculty who review applications are listed under Regents Professor, Professor & Chair, Professor, Associate Professor, and Assistant Professor. Emeritus Faculty members are retired from service, so they do not teach courses, do not engage in research, and do not accept students.

Faculty members listed under Joint Appointment are courtesy appointments with our department. These faculty members are located in other departments on the University of Arizona campus, although they sometimes collaborate with our faculty. In most cases, Joint Appointment faculty members would not review your application.

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When you are ready to apply, go to the Graduate College website and click on "**Apply Now**" to create your application: <http://grad.arizona.edu/admissions/apply-now>. You will be asked to create an application by using your email address and choosing a personal password.

The application will ask you to which degree program you wish to apply.

- If you have completed a Bachelor's degree, you are eligible to apply to the Master's degree program.
- If you have already completed a Master's degree, then you may apply to the Doctoral degree program. The major you should select is Hydrology or Atmospheric Sciences depending on your area of interest.
- *You must have completed courses in mathematics at least through Calculus II (integral calculus) to be considered for any of our programs.*

At the Graduate College online application, you may attach a Statement of Purpose or Statement of Research Interests, a Resume or Curriculum Vitae, and also upload scanned copies of all of your college or university transcripts that show all courses completed, the number of semester units, and the final grades. Please also include a *copy of your grading scale*, especially if you have a non-traditional grading system (e.g. numeric grades rather than letter grades, quarter or trimester system instead of semester system). This information is usually found on the back of your official transcript. (Please, attach only legible copies to your online application.)

At this time, we no longer require domestic applicants to submit GRE scores. During the pandemic, we are also waiving GRE scores for international applicants. We will still accept GRE scores if you want to share them with us, but we do not require them.

The Graduate College's online application system will ask you to list the names and email address of three professors or supervisors who can write letters of recommendation for you. These people will receive an automatic email message from the system which will ask them to submit their information electronically. Their replies will be linked back to the Graduate College website and become attached to your application.

If you are an international student, I encourage you to click this [link](#). It provides very detailed information about the cost of attending and the financial guarantee required to obtain a visa. These details include a PDF link to the Financial Guarantee Form that breaks down the annual cost (Tuition and Fees \$33,800, Living Expenses \$19,800, Health Insurance \$2,725). If the current form is for the previous academic year, it is very likely it will be the same or only slightly for the subsequent academic year

Finally, check us out on Facebook - - (go ahead and "Like" us!) – look for the HAS Department logo - a stylized water cycle - as the profile picture. Just search for "Department of Hydrology & Atmospheric Sciences" and click "Like".

Thank you again for your interest in our degree program. We look forward to reviewing your application to our world-class Hydrology graduate program. If you have further questions our programs, please contact me (I'm the Director of Graduate Studies for Hydrology) at [marthaw@arizona.edu](mailto:marthaw@arizona.edu), or Dr. Xiquan ("She-Chwen") Dong, Director of Graduate Studies in Atmospheric Sciences at [xdong@arizona.edu](mailto:xdong@arizona.edu).

With very best regards,  
Martha & Eyad