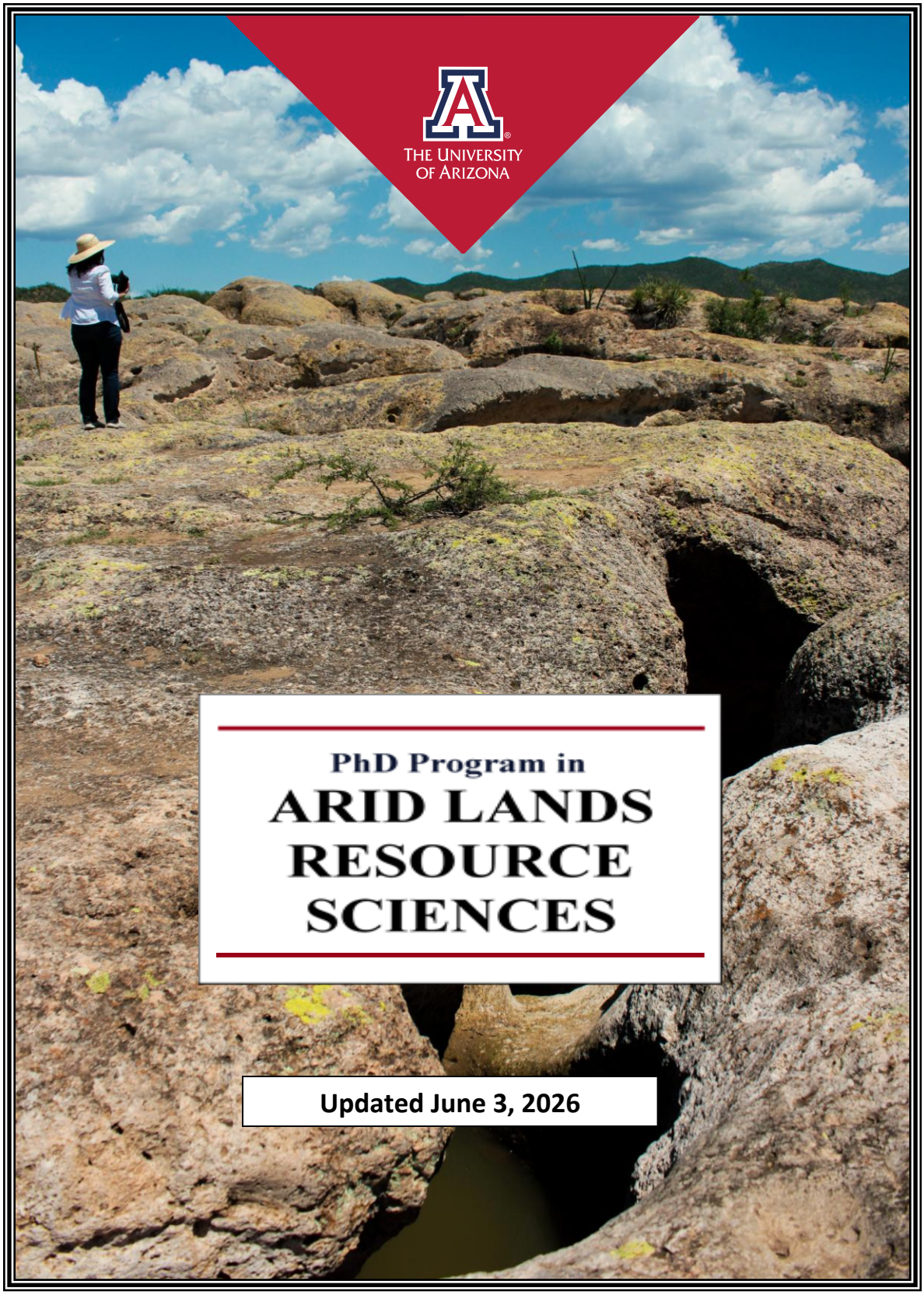

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Graduate Student Handbook

Arid Lands Resource Sciences

Graduate Interdisciplinary Ph.D. Program

The University of Arizona

Tucson, Arizona

This handbook outlines the philosophy and requirements for the Ph.D. Degree in Arid Lands Resource Sciences (ALRS). Please use this as a resource to understand program requirements and facilitate fulfilling the requirements for obtaining your graduate degree. This handbook should be used in conjunction with a current Graduate College website. The requirements of the Graduate Interdisciplinary Program in Arid Lands Resource Sciences are consistent with the rules and guidelines set forth by the Graduate Council of the University of Arizona. In some cases there are more stringent requirements than found in the Graduate Catalog online (http://grad.arizona.edu/academics/policies) and in those cases the requirements specified in the ALRS handbook take precedence.

We hope that your graduate experience is enjoyable and rewarding. If you require additional information, please contact the ALRS Program Coordinator or Program Chair.

David Quanrud

Program Chair

Jennifer Shim

Program Coordinator

Arid Lands Resource Sciences GIDP

University of Arizona

1064 East Lowell Street, Room N231

Tucson, AZ 85721

Telephone: (520) 626-9111

Website: https://alrs.arizona.edu/

Email: alrsgidp@email.arizona.edu

Table of Contents

INTRODUCTION

The University of Arizona offers a graduate interdisciplinary program leading to a Ph.D. with a major in Arid Lands Resource Sciences. The program is interdisciplinary and provides an academic environment in which to examine the ecological, economic and social factors that influence the sustainable use of arid and semi-arid lands. Special interdisciplinary concentrations combining aspects of the biological, physical, economic, and social sciences, not available in the traditional degree programs, are offered to advanced students with a clear focus of their research goals and a strong interest in arid lands.

MISSION STATEMENT

The Arid Lands Resource Sciences (ALRS) GIDP is a unique interdisciplinary program that is designed to prepare students to examine the physical, ecological, economic, social and ethical factors that determine the long-term sustainable use of arid and semiarid lands. Because of its multifaceted nature, sustainable use cannot be adequately defined nor understood through the tools available in any single discipline. Rather, it must be considered from multiple disciplinary perspectives. Thus, students in the ALRS program are trained in two or more of the physical, biological, resource, economic, agricultural and social sciences, as they relate specifically to the sustainable use and management of arid and semiarid lands. Our program also emphasizes the need for an in-depth understanding of the linkages and interactions between the natural environment and the people who inhabit it.

PROGRAM HISTORY

The Arid Lands Resource Sciences Ph.D. program was amongst the first interdisciplinary programs established at The University of Arizona. Administrative responsibility was initially with the Office of Arid Lands Studies, an Organized Research Unit (ORU) within the College of Agriculture and Life Sciences. Initially, a 10-member committee and an appointed chair oversaw the program.

In 1987, the University adopted new guidelines for its Interdisciplinary Programs and as a result, the ALRS program was restructured in 1988. The initial ALRS faculty members formed the first Executive Committee, and thirty additional faculty members were enlisted into the ranks. Presently, there are more than 50 faculty members from some 20 departments and programs across campus. Governance by-laws were developed and adopted in 1992, and were most recently amended in 2015.

During the last Academic Program Review the external review committee noted that, in terms of its importance to the University:

The Arid Lands Resource Sciences program directly supports the University's land grant mission in the University of Arizona system. The program recognizes a critical need of the state for individuals who are trained from an interdisciplinary perspective to address problems related to the development and utilization of arid lands by man.

In commenting on the program's uniqueness on a national and international level, they stated:

There is no other program of comparable scope that comprehensively addresses arid lands education and research at the doctoral level in any other American university. The program is well known nationally and internationally and thus brings worldwide recognition to the University.

Clearly, the importance of interdisciplinary research concerning the arid regions of the world is even more apparent today. The Executive Committee of the ALRS graduate program continues to strive towards increased excellence and growth to meet this demand.

ORGANIZATION OF THE GRADUATE PROGRAM

Administration

The Graduate Program in Arid Lands Resource Sciences is one of several Graduate Interdisciplinary Programs (GIDPs) at the University of Arizona. There are no faculty members directly within ALRS; rather, the program consists of participating faculty who are willing to devote their time and efforts to our students. The faculty is from the following departments and/or programs:

Agricultural and Biosystems Engineering

Agricultural and Resource Economics

Agricultural Education

Architecture, Planning & Landscape Architecture

Bureau of Applied Research in Anthropology

Environmental Science

Geosciences

Hydrology & Water Resources

Institute of the Environment

Laboratory of Tree-Ring Research

Latin American Studies

Psychology

School of Anthropology

School of Geography and Development

School of Middle Eastern & Northern African Studies

School of Plant Sciences

School of Natural Resources and the Environment

The Southwest Center

Udall Center for Studies in Public Policy

Since this is an interdisciplinary program, all graduates receive a Ph.D. in Arid Lands Resource Sciences. The program is administered through the Executive Committee.

Committee on Arid Lands Resource Sciences

The Committee on Arid Lands Resource Sciences Ph.D. Program is divided into two parts: 1) a nine member Executive Committee and 2) the general faculty membership.

Executive Committee

The ALRS Executive Committee members come from a variety of affiliated departments. Current Executive Committee members are:

David Quanrud (School of Natural Resources and Environment), Program Chair

Michael Bogan (School of Natural Resources and the Environment)

Gregg Garfin (School of Natural Resources and the Environment)

Millard Keith (Planning / Sustainable Built Environment)

Adriana Zuniga Teran (School of Landscape Architecture and Planning)

Philip Stoker (School of Landscape Architecture and Planning)

The Executive Committee administers the program and is responsible for general development, overview, admission recommendations, and student mentoring.

ALRS Faculty

The Arid Lands Resource Sciences faculty consists of more than 70 members, providing the multidisciplinary breadth necessary for teaching and mentoring students with a wide range of interests.

Roger Angel, Regents Professor, Astronomy and Optical Sciences

Adaptive optics, Instrumentation, Extrasolar planets, Telescope design and optical fabrication, Geoengineering, Concentrating photovoltaic solar energy

Steven R. Archer, Regents Professor Emeritus, School of Natural Resources and the Environment

Plant ecology and ecosystem sciences, interdisciplinary research on dry-land plant community dynamics and succession, with an emphasis on grass-woody plant interactions in relation to soils, climate, disturbance, and land use.

Alberto Arenas, Professor, Teaching, Learning & Sociocultural Studies, College of Education

Greening of formal education, green vocational and technical education, decolonization of education with a focus on restoring culturally-rich, non-commodified knowledge and skills.

Diane Austin, Professor and Director, School of Anthropology and Research Anthropologist, Bureau of Applied Research in Anthropology

Long-term, multi-sectoral partnerships with governmental, non-governmental, academic, and business organizations, with emphasis on the development of community-based participatory research approaches.

Laura Bakkensen, Associate Professor, School of Government and Public Policy

Public policy on insurance regulation, pre- and post-disaster aid, severe weather warnings, and public adaptation projects.

Jeffrey Banister, Director, Southwest Center; Associate Research Professor, School of Geography, Development and Environment

Resource governance and politics in the US-Mexico borderlands, Mexico, and Latin America.

Mamadou A. Baro, Associate Professor, Bureau of Applied Research in Anthropology

Development, household livelihood security, applied anthropology, land tenure, gender and international development with special focus on Africa and the Caribbean, and research methodology.

Greg Barron-Gafford, Associate Professor, School of Geography Development and Environment

Leaf, soil, and ecosystem scale fluxes of carbon and water in response to vegetative and climatic change.

Carl J. Bauer, Professor & Director, School of Geography, Development and Environment

Comparative and international water law and policy in different contexts of Chile, Eastern U.S., Spain, and Mexico.

Paloma Beamer, Professor, Chemical & Environmental Engineering

Collect of multi-media exposure samples for metals, pesticides and VOCs with minority and rural populations, environmental contamination, health risks of exposure on vulnerable populations.

Michael Bogan, Associate Professor, School of Natural Resources and the Environment

Focuses on how disturbance and dispersal processes shape local and regional biodiversity patterns in aquatic and riparian ecosystems, including the impacts of drought on arid-land streams.

James Buizer, Professor, School of Natural Resources and the Environment; Founding Director, AIRES

Climate Adaptation and Sustainability, Global Change Management.

Megan Carney, Assistant Professor, School of Anthropology; Director, Center for Regional Food Studies

Transnational and gendered migration; food and food systems; immigration policy; health inequality; food and migration; the anthropology of food, fermentation, and microbes; ethnographic research methods; and migrant health in the Americas and the Mediterranean.

Nader Chalfoun, Professor Emeritus, Architecture and Environmental Sciences

Energy conservation, passive solar architecture, outdoor environmental comfort, green building materials, and sustainable architecture.

Karletta Chief, Associate Professor, Department of Hydrology & Atmospheric Sciences, American Indian Studies

Watershed hydrology, arid and semi-arid lands, soil hydrology, and how indigenous communities are affected by climate change.

Bonnie G. Colby, Professor, Agricultural & Resource Economics, School of Geography, Development and Environment

Resource economics, impacts of climate change on resource utilization and value of natural areas, hydrology and water resources.

Andrew C. Comrie, Professor, School of Geography, Development and Environment; Chief Academic Officer, Arizona Board of Regents

Climatology, air pollution, environmental issues.

Michael Crimmins, Professor & Extension Specialist, Department of Environmental Science

Increasing climate science literacy and developing strategies to adapt to a changing climate. Implementation of drought preparedness and impact monitoring plans.

Jonathan Jae-an Crisman, Assistant Professor, School of Geography, Development and Environment, School of Landscape Architecture and Planning

Current research focuses on the role that art and culture can play as forms of political engagement in gentrifying cities, and (with collaborator Maite Zubiaurre) on the forensic, cultural, and political practices around migrant death in the Borderlands.

Joel Cuello, Professor, Agricultural & Biosystems Engineering

Applying engineering to put biological systems to work. Bioreactor design & secondary metabolite production.

Altaf Engineer, Assistant Professor, School of Architecture

Research interests include social, cultural, and behavioral factors in design with a special focus on daylighting, health and wellbeing.

Kacey C. Ernst, Associate Professor, Department of Epidemiology and Biostatistics

Examining the links between environment and environmental change and infectious disease transmission; particularly vector-borne diseases.

Margaret Evans, Associate Professor, Laboratory of Tree-Ring Research

Plant population biologist with research focused in two areas - conservation ecology, including the development of general tools for population and range modeling, as well as building knowledge about particular rare species; and evolutionary ecology, including bet hedging, life history evolution, breeding system evolution, and comparative analyses of the evolution of climatic niches.

Thomas Evans, Professor, School of Geography, Development & Environment

Dynamics of human-environment relationships including land use, agricultural decision-making, food security and environmental governance.

Timothy J. Finan, Professor, School of Anthropology; Research Anthropologist, Bureau of Applied Research & Anthropology

Applied anthropology, cultural and societal impacts of climate vulnerability, famine vulnerability and early warning.

Larry A Fisher, Research Professor, School of Natural Resources & the Environment

Climate Adaptation and Sustainability, Ecosystem Services, Global Change Management Social Dimensions of Natural Resource Management, Watershed Management.

Jeff Fehmi, Professor, School of Natural Resources and the Environment

Restoration ecology; mineland reclamation; revegetation of denuded lands; quantitative methods; plant community distributions; accuracy of plant community determinations from aerial photographs on the Goldwater range; impacts of vehicle traffic on vegetation; military training on military lands.

Edward Franklin, Associate Professor, Agriculture Education, Technology and Innovation

Principles and practices of agricultural mechanization; turf and landscape technology; applications in agricultural mechanics; operations in agricultural mechanics; and instructional materials development.

Rachel Gallery, Associate Professor, School of Natural Resources and the Environment

Conservation biology, genetics and molecular ecology; plant and soil ecology; population and community ecology.

Gregg M. Garfin, Professor and Associate Extension Specialist, School of Natural Resources and the Environment; Director, AIRES Science Translation (Note: Not available as advisor)

Research Topics: Climate Adaptation and Sustainability; Global Change Management; and Watershed Management. *Note: Unavailable as a primary advisor*

Andrea Gerlak, Professor, School of Geography, Development and Environment; Director, Udall Center for Studies in Public Policy

Water governance and policy; Global environmental policy, transboundary Waters; Groundwater management; Resilience, adaptation, social-ecological systems.

Elise Gornish, Cooperative Extension Specialist in Ecological Restoration, School of Natural Resources and the Environment

Trait based restoration approaches, restoration for multiple ecosystem services, the use of restoration in weed management, and spatially patterned seeding.

Phillip D. Guertin, Professor, School of Natural Resources and the Environment

Watershed hydrology and management; watershed assessment and planning; nonpoint source pollution; geographic information science and technology.

Zackry Guido, Director, AIRES International Programs

His research interests include quantifying climate impacts on water resources (including glaciers), coproducing end-to-end climate services, and advancing climate risk management through participatory processes.

Leslie Gunatilaka, Professor, School of Natural Resources & the Environment; Director, Southwest Center for Natural Products Research & Commercialization

Application of natural product chemistry to solve problems of human and animal health and agriculture.

Vance Holliday, Professor, School of Anthropology & Geosciences, School of Geography, Development, and Environment, Department of Geosciences

Geoarchaeology; paleoindian archaeology, soil-geomorphology, quaternary landscape evolution and paleoenvironments.

Malcolm Hughes, Regents Professor Emeritus, Dendrochronology, The Laboratory of the Tree-Ring Research

Climatology, modeling, dendrochronology. Specific areas of interest include past climate in Europe, Asia, and the Sierra Nevada, as indicated by tree rings.

Aletheia Ida, Assistant Professor, School of Architecture

She integrates design theory in her research for emergent environmental building technologies, incorporating aspects of material inventions with socio-environmental performance criteria through innovative digital and physical prototyping methods.

Michael K. Johnson, Indigenous Resilience Specialist, School of Natural Resources and the Environment

Indigenous traditional ecological knowledge, indigenous conservation and land management techniques, indigenous dryland agriculture systems, and food production.

Anna Josephson, Assistant Professor, Agricultural & Resource Economics

Individuals and households in around the world, working on risk, development, food security, and agriculture. Much of this research is centered in Sub-Saharan Africa, including Ethiopia, Malawi, and Zimbabwe, as well as Asia, including Bangladesh, India, and the Philippines.

Mark Kear, Assistant Professor, School of Geography, Development and Environment

Financial Geography, Urban Geography, Ethnography, Urban Poverty, Financial Exclusion, Financial Literacy, Financial Empowerment, Governmentality, Biopolitics, Credit and Debt, Personal/Consumer Finance, Financial Regulation, Payment Systems.

Ladd Keith, Assistant Professor, School of Landscape Architecture and Planning; Chair, Sustainable Built Environments

His research is at the intersection of urban planning and climate science and explores how policy innovation in local governance can make more sustainable and resilient cities.

Diana Liverman, Regents Professor Emerita, School of Geography, Development and Environment

Global change, climate impacts, vulnerability and adaptation, climate change and food security, and climate policy, mitigation and justice especially in the developing world.

Margaret Livingston, Professor, School of Landscape Architecture and Planning

Urban ecologist whose work emphasizes the importance of evaluating and maintaining natural and semi-natural ecosystems within and surrounding urban areas. In her role as a designer, she focuses on the use of native plants and design of urban wildlife spaces.

Laura Lopez-Hoffman, Associate Professor, School of Natural Resources and the Environment; Assistant Research Professor, Udall Center for Studies in Public Policy

Conservation biology and policy, trans-boundary conservation, ecosystem services.

Stuart E. Marsh, Emeritus Director and Professor, School of Natural Resources and the Environment

Land use and land cover change; impacts of climate and anthropogenic change on arid lands; remote sensing; application of geospatial technologies to environmental studies; development of decision support systems for natural resource management.

Mitchel P. McClaran, Professor, School of Natural Resources and the Environment; Director for Research, Santa Rita Experimental Range; Associate Director, Arizona Agricultural Experiment Station

Rangeland plant ecology and management, with particular emphasis on arid grasslands and savannas.

Alison M. Meadow, Associate Research Professor, Office of Societal Impact

Research Interests: Climate and Adaptation, Anthropology, Climate assessment, Climate change, Human Dimensions, Native Nations, Science engagement, connecting science and decision making.

Sharon B. Megdal, Director, Water Resources Research Center; Professor, Department of Agricultural and Resource Economics; Director, Water Sustainability Program

State and regional water resources management and policy, with areas of focus including storage and recovery programs, regional approaches to water management, ecosystem restoration, and the role of the private sector in water delivery.

Istvan Molnar, Professor Emeritus, School of Natural Resources and the Environment

Biosynthetic engineering, microbial genetics, combinatorial biosynthesis, genomics, biocatalysis, industrial biotechnology, drug discovery, natural products, antibiotics, anticancer agents, biofuels**.**

David Moore, Professor, School of Natural Resources and the Environment

Climate adaptation and sustainability; ecohydrology & biogeochemistry; geospatial science & modeling; global change management; plant & soil ecology; and remote sensing.

Katherine G. Morrissey, Associate Professor, Department of History

Research on the North American West focuses on the region's environmental, social, cultural, and intellectual history.

Thomas K. Park, Associate Professor, School of Anthropology; Associate Professor (NES); Associate Research Anthropologist (BARA)

Urbanization in Africa and the Middle East, complexity theory, economic theory, mathematical methodologies in anthropology and history, the history of credit, flood recession agriculture, the Sahara, the Sahel, North Africa, development, economic history, North African Arabic archives, bureaucracy in Africa and the Middle East, colonialism & imperialism, anthropology of law, Islam, land tenure, 18th to 21st C European philosophy, foragers in arid lands, pastoralism, Pyrrhonic skepticism, political ecology.

Charlotte Pearson, Associate Professor, Laboratory of Tree-Ring Research

Carbon 14 in single tree-rings analysis, dendrochronological approaches to the chronology of the Ancient Mediterranean and dendrochemical approaches to dating the onset of environmental disturbances (in particular volcanic eruptions).

David M. Quanrud, Assistant Professor of Practice, School of Natural Resources and the Environment

Arid lands; ecohydrology and biogeochemistry; sustainability; water quality and water resources management.

Dennis T. Ray, University Distinguished Professor & Faculty Fellow, School of Plant Sciences, School of Natural Resources and the Environment

Evaluate new crops and products for cultivation and processing in arid environments.

Tristan Reader, Assistant Professor of Practice, Department of American Indian Studies, McGuire Center for Entrepreneurship

Indigenous food sovereignty; Native American wellness and public health; Native American economic hybridity & social entrepreneurship; cultural revitalization theory and practice; indigenous and Participatory Action Research (PAR) methodologies; global food movements and food sovereignty; sustainable and culturally-based community development; community empowerment and quantum leadership; and indigenous ontologies, epistemologies, and axiologies.

Jeffrey C. Silvertooth, Professor / Associate Dean / Director, Economic Development and Extension, Soil, Water and Environmental Science

Development of crop production management strategies that optimize the soil-plant system agronomically and economically, with full consideration of the short- and long-term impact of inputs environmentally.

Donald C. Slack, Professor Emeritus, Department of Biosystems Engineering

On farm water management practices; irrigation systems & technologies; watershed hydrology; erosion control; biofuels from Sorghum.

Steven E. Smith, Associate Professor, School of Natural Resources and the Environment, Department of Plant Sciences

Climate adaptation and sustainability; conservation biology; geospatial science & modeling; plant genetics & improvement; evolutionary ecology.

William Kolby Smith, Associate Professor, Land - Water - Climate / Geospatial Analysis

Arid Lands, Ecohydrology and Biogeochemistry, Ecology Management and Restoration of Rangelands, Geospatial Science and Modeling, Remote Sensing.

Jose Soto, Assistant Professor, School of Natural Resources and the Environment

Climate Adaptation and Sustainability, Ecology Management and Restoration of Rangelands, Ecosystem Services, Invasive Species, Social Dimensions of Natural Resource Management.

Richard W. Stoffle, Professor, School of Anthropology

Cultural anthropology; social impact assessment; developmental anthropology; Native Americans; Caribbean industrial anthropology; fisheries; ethnobotany; satellite imagery.

Philip Stoker, Associate Professor, School of Landscape Architecture and Planning

Research interests include: urban water demand and the integration of land use planning with water management.

Susan Swanberg, Assistant Professor, Journalism

Telomere biology, autism genetics, reporting, sciences journalism, environmental journalism, media law, criminal law, public understanding of science and intersection of law, science, and journalism.

Robert Torres, Professor and Department Head, Agricultural Education, Technology and Innovation

Advances in career and technical education in agriculture.

Valerie Trouet, Associate Professor, Laboratory of Tree Ring Research

Main research interest is the tree-ring based reconstruction of climate dynamical patterns and their influence on terrestrial ecosystems and ecosystem disturbances.

Juan B. Valdes, Professor Emeritus, Department of Hydrology and Atmospheric Sciences

Stochastic and deterministic hydrology; flood forecasting; mathematical models of natural resources systems; modeling of space-time precipitation; environmental risk assessment; and stochastic modeling of environmental processes.

Willem Van Leeuwen, Professor, School of Natural Resources and the Environment, School of Geography, Development and Environment

Land surface phenology; biogeography; remote sensing science and applications of coupled natural and human systems; geospatial & temporal decision support systems and tools for land and water management; assessing impact of fire and drought on vegetation response dry lands around the world.

Robert G. Varady, Professor Emeritus, Environmental Policy, School of Natural Resources and the Environment

Environmental policy and environmental history with emphasis on trans-boundary issues, especially along the U.S.-Mexico border. *Note: Unavailable as a primary advisor*

Connie Woodhouse, Regents Professor, School of Geography, Development and Environment

Climate and paleoclimate of western North America, with emphasis on drought and water issues; reconstruction of past climate and hydrology using tree rings, analysis of past and current climate variability, and the investigation of circulation features that influence regional climate.

David A. Yetman, Research Social Scientist, Southwest Studies Center

Ecology and rural development relating to southwestern United States and northwestern Mexico, ethnobotany, border issues.

Adriana Zuniga Teran, Assistant Professor, School of Geography, Development and Environment

Explores questions related to green infrastructure and urban resilience, environmental justice, water security in cities of Latin America, groundwater governance, and other environmental issues in arid lands.

PROCEDURES AND INSTRUCTIONS

Important websites

ALRS website: The website of the ALRS GIDP has important information about our graduate program, including faculty research interests and contacts.

http://alrs.arizona.edu

GradPath information page: All graduate student forms need to be submitted electronically through GradPath. It is very important that students know how to access GradPath via UAccess Student, and familiarize themselves with the use of the system.

http://grad.arizona.edu/gsas/gradpath

Graduate College website: This website contains the most recent information on policies, deadlines and other matters relevant to graduate students.

http://grad.arizona.edu/degreecert

UAccess: A central portal with links to information about employment, teaching, financial and enrollment.

http://uaccess.arizona.edu

D2L: The university online class management system.

https://d2l.arizona.edu

Student Union: The Student Union offers a variety of facilities and services.

http://union.arizona.edu

International Student Programs and Services:

https://global.arizona.edu/international-students

Application for admission to the program

Master's Degree Requirement

Applicants to the Arid Lands Resource Sciences GIDP must have completed Master's Degree or obtained equivalent professional experience in a relevant field to Arid Lands Resource Sciences.

Deadlines

Domestic and International Applicants

Fall Semester (August) January 31st

Spring Semester (January) August 1st

Application Procedures

Application to ALRS should follow the procedures as specified by the Graduate College. Detailed information can be found at http://grad.arizona.edu/admissions/application-procedures

Required Documents

- A completed Graduate College application form for admission;
- Application fee;
- An application dossier.

As stated in the University of Arizona Graduate Catalog, the Arid Lands Resource Sciences Executive Committee as well as the Graduate College must approve all applicants for this degree program. Providing all information requested may require considerable time to prepare. The thoroughness and orderliness of the dossier is a measure of the applicant's maturity, one of the criteria by which the applicant is evaluated by the committee.

The completed dossier should consist of the following:

1. One official transcript from each university/college attended.
2. Graduate Records Examination scores no more than five years old.
3. TOEFL score for foreign applicants whose native language is not English. International students must demonstrate proficiency in English as one of the conditions for admission. Applicants must submit a must meet graduate college minima. And that those minima cannot be waived.
4. A list of publications and special papers (whether published or not). Reprints of journal articles are helpful but not necessary.
5. A minimum of three letters of reference. Letters should be from academic advisors as well as from professional supervisors.
6. A curriculum vitae, giving name, date and place of birth, resume of professional work with dates of employment and identification of all previous and present employers, membership in

professional organizations, academic awards, professional honors, and any other pertinent information that may be useful to the committee in evaluating your qualifications for the degree program.

7. A brief (no more than one page) statement, setting forth your long-range professional plans, such as the type of work you plan to pursue upon completion of the doctoral program.
8. A proposed graduate program, which should include:
    a. A description of the research you plan to undertake for your dissertation with a clearly articulated problem statement, the interdisciplinary methods that you will utilize in your research, and a statement on how this research will improve our understanding of arid lands.
    b. A list of the specific courses (by title and course number) that you plan to take to acquire the interdisciplinary skills you seek to attain.
9. Applicants should specify one or more faculty members with whom they may wish to work. Applicants may learn more about the interests and research programs of ALRS faculty by
    a. consulting the ALRS website;
    b. consulting the home pages of the faculty members' home departments, or
    c. contacting faculty members directly.

It is clearly understood that in many cases it will be difficult to delineate a research program without benefit of the advance course work that you will be pursuing. Nonetheless, your ability to identify a research project which can make a meaningful contribution to the understanding or solution of worldwide problems of arid lands is also a demonstration of your ability to complete an interdisciplinary doctoral program. The program is flexible enough so that you may, with the consent of advisor and dissertation committee, change the direction of your research, provided it is consistent with the goal of making a meaningful contribution to our knowledge of arid lands.

Dossier materials must be uploaded to the UA GradApp (Graduate Admissions application) website (https://apply.grad.arizona.edu/users/login) together with your completed Graduate College application form for admission application.

CURRICULUM

Credits Required

Credits beyond Master's Degree:	36*
Dissertation Credits:	18
Credits Required for Minor:	9 – 15*
Total, Minimum:	**63 – 69**

*Graduate College policy requires that at least ½ (one-half) of these units are from letter graded courses (e.g. A, B, C).

Core Curriculum

The common core curriculum provides a base from which all students can proceed to more detailed studies in their selected areas of research interests. The core curriculum required of all students consists of 16 (sixteen) units in the following courses.

NOTE: ***A grade of A, B, S or P must be received in all core curriculum.***

Course #	Title	Units	Term Offered
ARL 564	The Arid and Semiarid Lands	3	NA**
ARL 565	Physical Aspects of Arid Lands	3	Fall (even years)
ARL 595A	Arid Lands Current Research	1 X 4*	Fall/Spring
ARL 641	Natural & Human Impacts on Arid Lands	3	NA**
ARL 642	Use and Management of Arid Lands	3	Spring (even years)

*1 (one) unit per semester for a *minimum* of 4 (four) semesters.

Note: Only **ARL 595A** is offered every term. Other courses are offered on a rotation, i.e. only ARL 641 offered one term, then only ARL 642 offered next term, and so forth.

****ARL 564** and **ARL 641** are discontinued indefinitely. Students can substitute this requirement under the guidance of their advisor and Program Chair. This is a list of already approved courses to replace ARL 564 and ARL 641:

- GEOG 696O Adaptation and Water Resilient Systems (Fall, even years)
- ENVS 596B Water Policy in Arizona and Semi-Arid Regions
- RAM/AIS/AINTH 531A Traditional Ecological Knowledge
- RAM 556A Rangeland Inventory and Monitoring
- RNR 503 Applications of Geographic Information Systems
- RNR 526A Principles of Indigenous Economics
- RNR 536 Agro-ecology
- RNR 540 Climate Change Adaptation
- RNR 541A Natural Resource Management in Native Communities
- RNR 580 Natural Resources Policy & Law
- RNR 585 The Economics and Social Connections to Natural Resources
- WSM 552 Climate Change and Dryland Ecosystem Ecology

Research Methodology Requirement

ALRS students are required to take at least one research methodology course relevant to the student's research. An appropriate research methodology course should be identified during the student's *Qualifying Exam*.

Language requirement

Students are required to demonstrate proficiency in a foreign language. This may be demonstrated by:

1. By passing a departmental proficiency examination.

2. Student may also present a transcript showing a grade of "B" or better in a fourth semester (undergraduate) course in a foreign language taken at an accredited college or university.

A student whose native language is not English may offer English to satisfy the foreign language requirements.

Dissertation Units

Registration for the 18 (eighteen) required dissertation units (ARL 920) should be spread over the period during which the actual research is being conducted. The oral and written comprehensive examinations must be successfully completed prior to registration of ARL 920 units unless prior approval has been granted by the major advisor *and/or* the Program Chair. Failure to successfully complete the comprehensive examinations may cause a lapse in eligibility for registration of dissertation units.

Only ARL 920 is valid for dissertation units. This course may be repeated for unlimited unit(s) or unlimited completion(s). Any research NOT related to the dissertation can receive credit under ARL 900.

Doctoral Minor Program Requirements

To ensure fundamental grounding in more than one discipline, students in the ALRS program are **required** to complete a doctoral minor program in an area that is outside the discipline of their Masters' degree.

Each department has its own unique minor requirements and students are responsible for understanding and obtaining approval for their planned minor coursework from the Director of Graduate Studies of the minor department.

REQUIREMENTS FOR A MINOR DEGREE IN ALRS

Students from other disciplines can elect to complete a doctoral minor program in ALRS. The requirements for the ALRS minor degree are participation in ARL 564, 565, 641 and 642. (These requirements can be modified based upon prior experience and course work if approved by the minor advisor and ALRS Department Chair).

The written comprehensive examination is given by the two minor faculty members selected for the student's graduate committee. Both members are required to participate in the written and oral comprehensive examination. The minor committee members should review the dissertation and are expected to participate in the final defense. The members of the minor should be faculty members of ALRS, but on a case-by-case basis we can substitute other tenure-track faculty with prior approval by the Chairperson in consultation with the student's major advisor. Also, continuing eligible faculty who has

been approved by the Dean of the Graduate College upon the recommendation of the Program Chair as "tenure equivalent faculty" may serve on committees.

MILESTONES TOWARDS YOUR DEGREE

Student Annual Progress Report

The annual progress report is due March 15th of each academic year. The report is to be prepared by the student and his/her major advisor, using the Progress Report form provided by the ALRS program coordinator.

Students not providing an annual report cannot be considered for financial aid from the ALRS program, and failure to provide annual progress reports will be considered in evaluations of satisfactory academic progress.

Plan of Study Review

ALRS requires completing the Plan of Study Review, which the student schedules to be held before the scheduling of classes for the 2nd semester. The Plan of Study Review consists of a meeting between the student and a three-member committee of ALRS faculty (including one of the advisors from the selected area of concentration) formed by the student in agreement with the Chair of the ALRS Program. The purpose of the meeting is to develop an official Program Plan of Study. To achieve this, the student submits (1) a proposed program of study and (2) a description of his/her background, general research area, and career objectives. Based on this, the committee either accepts the proposal or suggests modifications. The final product is a mutually agreed upon program of study. The official Doctoral Plan of Study form must be submitted to the Graduate College through the GradPath System by the end of third semester in the program or 10 (ten) working days prior to the beginning of the written comprehensive examination (whichever comes first). The student's research interest will also be discussed at the Plan of Study Review, for the purpose of providing the student with guidance on choosing a major advisor, other appropriate major committee members, a suitable minor, and potential minor committee members.

Formation of a Graduate Committee

A Graduate Advisory Committee is generally formed by the end of the first year in the program. This is a minimum four-member committee, 1 (one) ALRS faculty as the Chair, 2 (two) from Graduate faculty, and 1 (one) from the student's minor. The ALRS program requires each student to have 1 (one) committee meeting per year.

Comprehensive Examination

With the Comprehensive Examination, students shall:

- Demonstrate their ability to conduct a comprehensive and critical analysis of the relevant research literature;
- Recognize and discuss key concepts in the natural and social processes that contribute to the sustainability of arid and semiarid environments;
- Demonstrate their ability to integrate at least two of the following disciplines: physical-, biological-, natural resources-, agricultural-, economic-, and social sciences, and policy studies;
- Demonstrate effective written and oral communication.

This examination shall be taken during the final semester of the student's official Program of Study.

The Comprehensive Examination shall consist of two parts: the Written and the Oral Examination.

Committee Composition for the Written and the Oral Examinations

Both parts of the Comprehensive Examination shall be administered by the same Committee which shall consist of at least 4 members.

3 members shall represent ALRS (the student's major) and 1 shall represent the student's minor.

The majority of the Committee Members must be Faculty members of the University of Arizona.

Member 1: The Chair of the Committee. Must be the Major Advisor of the student who is a Faculty member of the University of Arizona and is also a member of the ALRS Graduate Faculty. The Chair must have a current endorsement to serve as the Chair of an ALRS Doctoral Committee.

Members 2-3: Must be either Faculty members of the University of Arizona who are also faculty members of the Graduate Faculty; or Special members pre-approved by the Dean of the Graduate College to serve on ALRS graduate committees.

Member 4: Must be a Faculty member of the University of Arizona who is also a faculty member of the Graduate Faculty for the student's minor.

Additional members may be included on the Committee if their expertise is required for the study and/or research program of the student. Appointment of additional members shall be recommended by the Chair of the Committee via GradPath and approved by the Chair of the ALRS GIDP. The additional members must be either Faculty members of the University of Arizona who are also members of the Graduate Faculty of a graduate program; or Special members pre-approved by the Dean of the Graduate College to serve on ALRS graduate committees.

<u>The Written Examination</u>

The written part of the Comprehensive Examination shall consist of 4 comprehensive essays written by the student in response to the questions posed in writing by the Committee members. Each Committee member shall pose one question. Each question may include interrelated sub-questions that serve as pointers for the student towards the expected content and extent of the answer.

The Chair of the Committee shall gather the questions from all members of the Committee before the start of the Written Examination. The Chair of the Committee shall provide the student with one question at a time, and the student shall have a minimum of 1, and a maximum of 5 days (as determined by the Committee) to prepare and submit a written answer. The student shall submit the written answer to Chair of the Committee, and shall then receive the next question from the Chair. The Chair will send the student's answers to all members of the Committee. The student may be given time

between the questions, but the written part of the comprehensive examination shall be completed within 4 weeks total.

Each answer shall be graded as Pass / Fail by the committee member who posed the question. Other committee members may consult with the committee member who posed the question, should they perceive a problem with the student's answer or if requested by the committee member who posed the question. The student must pass all 4 written examination questions for the successful completion of the Written Examination.

Deviations from this protocol must be agreed upon by unanimous vote by all members of the Committee, and approval of the deviations must be requested by the Chair of the Committee in writing from the Chair of the ALRS GIDP. Such requests must be accompanied by listing sufficient reasons for the deviations.

Deviations may include:

- Two members of the Committee who represent the ALRS major agree to pose a common, integrated question, provided sufficient overlap exists between their scientific expertise areas;

- The three members of the Committee who represent the ALRS major agree to forgo separate questions in lieu of an integrated essay of substantial breadth and content, with a format that could match that of a grant proposal or manuscript.

    - This essay must still have sufficient interdisciplinary content that integrates relevant aspects from both physical and social sciences, as they relate to the ALRS major. The length of this essay must equate the summed length of 3 answers to the 3 separate questions that it replaces.
    - The representative of the student's minor must still pose a separate question.
    - Integrated essays should ONLY be used to satisfy the requirements of the Comprehensive Exam, and may not be re-used, without substantial and extensive changes, for the Doctoral Dissertation (no double-dipping).
    - Should any part of the Written Comprehensive Exam be developed later into a manuscript for publication by the student, it is the responsibility of the Committee and the student to ensure that this is NOT done under coercion (for example, as a requirement for passing the Comprehensive Exam). There must be proper accounting of credit for the scientific contributions of the student and all members of the Committee.

Other deviations may also be considered in extremely rare cases, and only if the student's study or research program strongly justifies the requested changes.

It is the common responsibility of the Chair and the members of the Committee, and the Chair of the ALRS GIDP, to guarantee that deviations do not reduce, or even appear to reduce, the rigor and benefits to the student of the Comprehensive Exam. Instead, Comprehensive Exams conducted under approved deviations should still uphold the standards and satisfy the educational goals of the ALRS GIDP, the Graduate College, and the University of Arizona.

The Oral Examination

The oral part of Comprehensive Examination shall be scheduled a minimum of two (2) weeks and a maximum of 4 (four) months after the successful completion of all Written Exams.

The Oral Examination Committee shall consist of the same 4 members as the Committee for the Written Examination. Replacements of Committee members must be approved unanimously by the Committee and approval requested from the Chair of the ALRS GIDP by the Chair of the Committee via GradPath, with the reason noted. Replacements shall only be approved under extenuating circumstances.

The Oral Examination shall consist of an in-depth discussion of the Written Examination questions, and any other pertinent scientific questions related to the student's study and research programs. Discussion of the development and the content of the student's Dissertation proposal is encouraged.

At the end of the Oral Examination, each Committee member votes (Pass / Fail). A majority of Pass votes constitutes a Pass for the Oral Examination, and for the successful completion of the Comprehensive Examination.

The result of the Comprehensive Examination shall be reported by the Chair of the Committee via GradPath.

Each Committee Member shall also fill out the "ALRS Questionnaire for the Written and Oral Comprehensive Examination" form. These forms shall be submitted to the ALRS Program Coordinator.

Additional Rules for the Comprehensive Examination

It is the student's responsibility to assemble their Committee and to schedule the Comprehensive Examination.

Doctoral students are required to submit the Comprehensive Examination Committee Appointment form in GradPath. This form is automatically routed to the Chair of the Committee, the representative of the Minor, the Chair of ALRS, and the appropriate Graduate College representatives for approval prior to the comprehensive exams. Once this form has been approved – and the student has an approved Plan of Study – the student can use the Announcement of Doctoral Comprehensive Examination form to schedule the oral comprehensive exam. Approval of the Announcement will generate the Results of the Comprehensive Examination form for the Chair to submit later.

The Chair of the Committee will report the results of the oral comprehensive exam (and thus the full Comprehensive Exam) on behalf of the full Committee in GradPath. Individual Committee members (i.e. those who are not Chair) do not need to certify the reported result, but they will receive a notification message to allow them to view the results reported by the Chair.

The Written and Oral Comprehensive Examinations must be completed within a six-month period. Passing the Comprehensive Examinations (written and oral) is one of the requirements (together with an approved Plan of Study on file with the Graduate Student Academic Services office; satisfactory completion of all course work; and fulfillment of the language requirements) before a student may advance to formal candidacy for the Ph.D. degree.

Doctoral Prospectus/Proposal

With the Dissertation Proposal/Prospectus, students shall prepare a comprehensive outline of their planned thesis research and Doctoral Dissertation, and demonstrate to their Committee that they will:

- Address a clear and relevant research problem of interdisciplinary nature relevant to arid land studies

- Conduct a comprehensive critical analysis of the relevant research literature
- Use appropriate research design and appropriate research methods from the physical-, biological-, natural resources-, agricultural-, economic-, and social sciences, and policy studies
- Complete an appropriate, comprehensive and unbiased analysis of the data
- Provide an interpretation of the results that contributes innovative solutions to the sustainability of arid and semiarid lands

The formal Dissertation Proposal/Prospectus shall be prepared in writing and submitted to the student's Committee. The Committee shall consist of the same members who administered the Comprehensive Examination, and consist of a minimum of 4 members. Replacements of Committee members must be approved unanimously by the rest of the Committee, and approval for the replacement must be requested from the Chair of the ALRS GIDP by the Chair of the Committee, indicating the reasons. After the acceptance of the proposal, students shall be able to adjust their Committee composition in agreement with their Major Advisor.

The submitted Dissertation Proposal/Prospectus shall be discussed in a Committee meeting. The Committee shall vote Pass, Pass with revisions, or Fail on the Dissertation Proposal/Prospectus.

A majority of Fail votes shall necessitate the restart of the process, with a new, rewritten Proposal/Prospectus prepared by the student and evaluated by the Committee.

A Fail vote on a rewritten proposal shall mean that the student is no longer in good standing with the ALRS program. At this point, a plan of remediation shall be prepared and agreed upon among the student, the Committee and the Chair of the ALRS GIDP. Failure to follow the remediation plan in a timely manner and failure to complete a Dissertation Proposal/Prospectus to the satisfaction of the Committee shall lead to the termination of the study program of the student.

The Dissertation Proposal/Prospectus shall be voted on by the Committee no later than 3 months after the completion of the Comprehensive Examination.

A rewritten Dissertation Proposal/Prospectus (following a Fail vote on the original Proposal/Prospectus) shall be voted on by the Committee no later than 5 months after the completion of the Comprehensive Examination. The Chair of the Committee shall report the successful completion of the Dissertation Proposal/Prospectus to the ALRS Program Coordinator. The student must submit a copy of the proposal to the Program Coordinator and then submit the Prospectus/Proposal Confirmation form in GradPath. The student must have this confirmation filed in GradPath before they can schedule the defense using the Announcement of Final Oral Defense form.

Advancement to Candidacy

The student, after successfully completing the comprehensive exams (as reported in GradPath by his/her advisor), will receive a confirmation email message from the degree counselor, that he/she has been advanced to candidacy.

Dissertation Draft

The penultimate draft of the Dissertation must be submitted to each member of the Graduate Committee 4 (four) weeks (20 working days, not including official UA holidays) prior to the ***Final Examination***.

Formation of the Dissertation Committee

Dissertation Chair or Director: Must be tenured or tenure track or approved as "tenure equivalent faculty" by the Graduate College of the student's major department. If the Committee includes a co-chair, that member can be a tenured or tenure track member of the student's major department or another department. A special member may serve as Co-Chair with prior approval from the Dean of the Graduate College.

Members 2-3 representing the student's major: Must be tenured or tenure track member of a university department. Someone who does not have a faculty appointment of Assistant, Associate, or full Professor in any university department may serve if pre-approved by the Dean of the Graduate College.

Members 4-5 representing the student's minor: Must be tenured or tenure track member of the student's minor department, or tenured or tenure track member of another university department. Someone who does not have a faculty appointment of Assistant, Associate, or full Professor in any university department may serve if pre-approved by the Dean of the Graduate College. NOTE: *The minor committee may waive representation at final examination. This decision is at the discretion of the minor department and may vary by department.*

When preparing your dissertation please refer to the Manual for Theses and Dissertations for complete guidelines on dissertation format. This is available on the Graduate College website located at http://grad.arizona.edu/gsas/dissertations-theses.

ALRS students have the choice of preparing their dissertations either in the traditional format (i.e., as a book or monograph) or as a collection of at least 3 (three) published and/or publishable papers. The appropriate format should be chosen after consultation with and approval by the student's dissertation committee. Students electing to use the format including published papers or manuscripts must follow the Graduate College guidelines for preparing and assembling the dissertation. If the dissertation is to contain manuscripts prepared for submission to peer-review journals (as opposed to published papers, papers in press, or papers accepted for publication), students must identify the journal for which the manuscripts were prepared and provide each committee member a copy of the journal's guidelines for manuscript preparation.

Announcement of Final Defense

The form in GradPath must be routed and approved least 7 (seven) working days (not to include official UA holidays) prior to the date of the Final Examination. Final Examinations should be scheduled during days when the university is in session and during normal business hours.

Final Defense

The final defense is administered by a Doctoral Committee. A doctoral committee may have only 1 (one) special member and that member requires prior approval.

Internal ballots are made available by the graduate program to the dissertation committee in which they will write their decisions after the final oral examinations. These paper ballots are to be turned in to the Graduate Coordinator to be included in the student's file.

The Chair of the committee will report the results of the final defense on behalf of the full committee in GradPath. Individual committee members (i.e. those who are not Chair) will no longer need to certify the reported result, but they will receive a notification message to allow them to view the results reported by the Chair.

When a doctoral student passes the final defense with revisions pending, confirmation of final approval with revisions completed will no longer be on the form used to report the defense result. Instead the **Chair** or the **graduate coordinator** must e-mail the degree auditor to report final approval. If the full committee needs to review and approve the revisions, the Chair or graduate coordinator will report final approval to the degree auditor once all members have approved.

Completed Dissertation

Following the ***Final Defense***, the candidate submits a final copy of the completed ***Dissertation*** to the dissertation director for review. The student's major advisor is responsible for reviewing the dissertation to assure it meets established dissertation guidelines. After making the required corrections, the candidate submits the dissertation electronically for forwarding to the Library of The University of Arizona and to University Microfilms, Inc. A hard and electronic copy of the Dissertation must be submitted to the Graduate Program Office of Arid Lands Resource Sciences. These tasks must be completed within 12 (twelve) months of the Final Examination.

ALRS GUIDELINES FOR SATISFACTORY ACADEMIC PROGRESS

The appropriate times for completing and filing the above-mentioned items, as well as other requirements, are summarized in the **Degree Audit Deadlines** issued by the Graduate College each year. These may be found at the Graduate College website located at http://grad.arizona.edu/gsas/degree-requirements/important-degree-dates-and-deadlines

Attainment of a graduate degree in the Arid Lands Resource Sciences GIDP requires outstanding scholarship and demonstration of distinguished research leading to a dissertation that makes a significant contribution to the general fund of knowledge in interdisciplinary science. The degrees are never granted solely as certification of faithful performance of a prescribed program of studies. All degree requirements must be fulfilled. Therefore, the requirements for satisfactory academic progress are outlined below.

Annual Requirements

- Submit ALRS Student Annual Progress Report by March 15th
- Meet with all members of the student's advisory committee. It is the responsibility of the student to schedule this meeting.
- Meet with the program Chair and Program Coordinator. It is the responsibility of the student to schedule this meeting.

Academic Requirements

- Minimum GPA of 3.0 must be maintained at all times. Students who have a cumulative grade-point average of less than 3.0 at the end of a given semester will be placed on academic probation. Students on probation are required to meet with their Major Advisor, discuss the steps to be taken to remediate the problems that led to the probationary status, and devise a written plan of action. After the first semester a student completes with a cumulative GPA less than 3.0 they will be allowed to register for one additional semester. The student will be blocked from registering after that unless their cumulative GPA reaches 3.0 at the end of the second consecutive semester of probation. Students whose GPA is below 3.0 for two consecutive semesters will be disqualified from their program.
- Minimum Grade in Core Coursework must be "B".

First semester

- Pass Plan of Study Review
- Provide Graduate Program Office with committee-approved Doctoral Plan of Study within four weeks of successfully completing the Plan of Study Review.
- If the Plan of Study Review is not completed by the end of their second semester in residence, they will be ineligible for ALRS fellowship or scholarship support. If the student fails to complete the Plan of Study Review by the end of their second semester in residence, they will be ineligible for ALRS fellowship or scholarship support. Ineligibility will be removed upon successful completion of the Plan of Study Review.

End of First Year

- Identify Research Area(s) of Interest.
- Select Major Advisor - Notify ALRS Program Coordinator.
- Select Minor Field and Minor Advisor – Notify ALRS Program Coordinator.

End of Second Year

- Finalize compilation of entire Advisory Committee.
- Complete Core coursework.

End of Third Year

- Complete remaining Major and Minor coursework.
- Provide documentation of having satisfied language requirement.
- Submit to **GradPath System** the revised doctoral plan of study if changes were made. This plan must be fully approved prior to the written comprehensive examination by the Advisory Committee.
- Pass Written and Oral Comprehensive Examinations
- Failure to complete the written and oral comprehensive exams by the end of the third year in residence will make the student ineligible for ALRS fellowship or scholarship support. Ineligibility will be removed upon successful completion of the comprehensive exam.
- In the event of a failure of either portion of the Comprehensive Examination, the advisory committee will meet to determine if the student should be dismissed from the program OR a re-examination is to be allowed. If a re-examination is allowed, the Committee has to determine specific conditions for this exam, following Graduate College rules.
- File Application for Advancement to Candidacy.
- Complete Dissertation Proposal following format for a NSF doctoral dissertation research improvement grant and acquire written approval from entire Dissertation Committee to proceed.

Fourth/Fifth Year

- Verification of Prospectus/Proposal Approval -submitted by department Graduate Coordinator
- Complete and Write Dissertation.
- Pass Dissertation Defense.
- Final copies of the dissertation and all required paperwork must be submitted to Graduate College Degree Certification within 12 (twelve) calendar months of the defense date.

Ethics and Academic Standards

ALRS students must follow all the relevant ethical and academic standards of the University (e.g. Academic Integrity: http://deanofstudents.arizona.edu/policies-and-codes/code-academic-integrity ; responsible conduct of research http://rgw.arizona.edu/research-compliance/rcr as well as the policies of the Graduate College (http://grad.arizona.edu/academics/policies/academic-policies).

Students are to conduct their research in an ethical manner; fraud related to the creation of false data, the unethical use of others' work, or unauthorized use of copyrighted material will not be tolerated by the Program. Students should keep their data in a format acceptable to the research advisor, and allowing for standard research oversight. Request for exception(s) to these policies may be submitted in writing to the ALRS Program Coordinator, Sr. for review by the Program Chair and/or Executive Committee.

FUNDING SOURCES

Graduate Tuition Scholarships and Graduate College Fellowships

The ALRS Graduate Interdisciplinary Program receives a limited amount of funding for graduate tuition scholarships and fellowships. The awards are based upon academic merit. Current students must indicate their desire to be considered for these awards on their annual report which is due on March 15th of each year. New students should submit their request for consideration for these awards in writing to the graduate coordinator by March 15th.

Graduate Research/Teaching Assistantships

Students are encouraged to contact appropriate faculty to determine if funding is available for research or teaching assistantships. The terms of these assistantships are negotiated between the faculty and student and are administered by the department that houses the funding from which the assistantship will be supported. Also, each year the Graduate Interdisciplinary Administrative Office coordinates the recruitment and placement of Tier One teaching assistantships. Again, students are encouraged to apply and participate in these teaching opportunities. Application procedures and deadline will be circulated when they are made available.

Miscellaneous Funding Opportunities

The Graduate College offers a financial resources page on their website, http://grad.arizona.edu/financial-resources. You will find a list of various funding opportunities for graduate students like: Peace Corp Fellows Program, Graduate Student Research Fund, AHSS: Arts, Humanities & Social Sciences Graduate Fellowships, Minority Graduate Student Research Fund, Summer Research Support Program, Minority Academic Assistance Program, Minority Student Travel Fund, Graduate and Professional Student Travel Grant Fund, Travel Incentive Program, the Dean's Fellowship Program in the Graduate College, Michael A. Cusanovich Research Fellowship, The Herbert E. Carter Travel Award and the Raphael & Jolene Gruener Research Travel Awards in the Graduate Interdisciplinary Programs and the William E. McGinnies Fellowship. All awards are competitive and meritorious.

It is important that students check their emails on a regular basis as scholarships are announced by email throughout the year.

Students can also use the university scholarship finder;

https://scholarshipuniverse.arizona.edu/suha

ADDITIONAL POLICIES

All ALRS students must be aware of the Graduate College's requirement for continuous enrollment, and other Graduate College policies. See the Graduate College website for all current policies: http://grad.arizona.edu/degreecert

Minimum and continuous enrollment policies

Departmental Appeal Process

Degree seeking students with a cumulative grade-point average of less than 3.0

- At the end of the semester students will be placed on academic probation
- Students are required to meet with their Major Advisor to discuss ways to remediate the problems
- Devise a written plan of action
- Department will petition for a one semester extension
- Student may apply as non-degree seeking and continue to take graduate courses in non-degree status
- Apply for Academic Renewal, if they wish to apply to a different major and the other major has agreed to accept them.

Petitions

- Students who believe, with good academic reason, that they deserve redress or exception to Graduate College rules, regulations, or policies can formally petition for an exception
- A petition must be submitted to the Graduate Student Academic Services office, signed by the major advisor and department head, note petitions concerning a course must also include the instructor's signature. Petition should include supporting documents and a letter of support from the student's major advisor, director of graduate studies or department hear. The Graduate College Petition is available online.

Doctoral continuous enrollment policy

A student admitted to a doctoral program must register each fall and spring for a minimum of 3 (three) graduate units from original matriculation until the completion of all course requirements, written and oral comprehensive exams, and 18 (eighteen) dissertation units. When these requirements are met, **doctoral students** must register for a minimum of 1 (one) unit each semester until final copies of the dissertation are submitted to the Office of Degree Certification, unless excused on a formally approved Leave of Absence. Doctoral students do not have to register for graduate units during summer sessions

unless they plan to make use of University facilities or faculty time. If they plan to utilize facilities or faculty time they must enroll for 1 (one) unit of graduate credit. If degree requirements (including the Comprehensive and the Final Oral Examinations) are completed during the summer term, the student must also be registered for a minimum of 1 (one) unit of graduate credit during that term.

Leave of Absence

All leave of absences must be approved by the ALRS advisor, Program Chair, and by the Graduate College. See the Graduate College website for "Other Graduate Student Academic Services forms" for details and Leave of Absence form.

Academic Leaves

Academic LOAs (i.e., leaves taken for course work elsewhere, for research, field work, internships, professional development, etc.) are handled on a case-by-case basis by the student's department and the Graduate College.

Readmission Due to a Lapse in Maintaining Continuous Enrollment

Students not maintaining continuous enrollment as outlined in this handbook will be subject to readmission. Readmission will require the submission of a new application packet which will include the application form, letters of support from three of the five committee members, statement of intent which is to include explanation of lapse in enrollment and an overview of the proposed continuation of academic and/or research progress (to include a tentative timeline).

These materials are to be submitted as an original, first time application and applicants will be reviewed by the Executive Committee. Prior enrollment in the ALRS Graduate Interdisciplinary Program does not guarantee readmission.

Policies for Incompletes

The grade of **I** (Incomplete) may be awarded only at the end of a term, when all but a minor portion of the course work has been satisfactorily completed. Students should make arrangements with the instructor to receive an incomplete grade before the end of the term.

ALRS follows the UA policy on Incomplete grade: http://catalog.arizona.edu/policy/grades-and-grading-system#incomplete. Students will enter into a contract with instructors as to what course work must be completed to remove the grade of "I" and replaced with a grade. Both instructor and student will sign this agreement and both should retain copies.

If the incomplete grade is not removed by the instructor within one year (the last day of finals one year later), the **I** grade will convert to a failing grade.

The student can request a one-year extension which must be approved by the instructor and the Graduate College Dean. This extension requires the instructor and dean's signature on a Petition for Extension of Course Work form. Notification of the dean's approval or denial is to be provided to the student by the Dean's office.

APPENDIX

GradPath User Guide for Graduate Students

For an up-to-date description, please refer to: http://grad.arizona.edu/gsas/gradpath

Changing Approval Routing on Forms

Sometimes the person who would normally approve a form (as DGS, advisor, or even graduate coordinator for the pre-review) may not be available to review and act on forms. The Graduate Student Academic Services office in the Graduate College can re-direct one or more specific forms awaiting a particular person's approval to someone else as needed. You simply need to contact your degree auditor (or anyone in Degree Certification) to make the request.

If the normal DGS approver for a plan or sub-plan – or the graduate coordinator, if pre-review is in effect – will be unavailable for a period of time, please let your degree auditor know. The Degree Certification office can make a temporary or permanent change to the routing table for the plan or sub-plan so that forms will be routed to the right person.

Note that an approver can still open and render decisions on forms from anywhere in the world as long as they have Web access and a VPN connection to the University's online systems.

NOTE: The e-mail address used to send notifications to a faculty member is the e-mail address in his or her HR record. The Graduate Auditor does **not** have the ability to change the e-mail address used for a faculty member in GradPath. If the e-mail address that HR and GradPath use for a given faculty member is not the preferred address, please suggest to the faculty member set up automatic forwarding from the official account to the one he or she normally uses. To check which e-mail address is on the HR record, a faculty member can open UAccess Employee Self-Service (used to report time) and navigate to Self Service -> Personal Information -> Personal Information Summary.

Please be aware that the GradPathForms@grad.arizona.edu address is a dummy address used to standardize the notification messages. It is not possible to send a reply to this address. Instead any concerns should be communicated directly to the degree auditor or other Degree Certification staff.

Important Changes to Degree Certification Procedures

Doctoral students

i. Doctoral students are now required to submit the Comprehensive Examination Committee Appointment form to allow the Graduate College to check the planned committee for the comp exams. Once this form has been approved – and the student has an approved Plan of Study – the student can use the Announcement of Doctoral Comprehensive Examination form to schedule the **oral comprehensive** exam. (As explained below, approval of the Announcement will generate the Results of the Comprehensive Examination form for the Chair to submit.)

ii. The Graduate College will no longer track language requirements for doctoral students. The doctoral milestone for the language requirement will remain in UAccess and will be available for graduate coordinators to update if needed. To update this milestone, navigate to the Student Milestones and use Correct History mode.

iii. New requirement: Before a doctoral student can schedule the final defense, the department will need to submit the Prospectus/Proposal Confirmation form. The procedure is described below in the "GradPath Forms Not Submitted by Student" section.

iv. The Chair of the committee will now report the results of the oral comprehensive exam or the final defense on behalf of the full committee. Individual committee members (i.e. those who are not Chair) will no longer need to certify the reported result, but they will receive a notification message to allow them to view the results reported by the Chair.

v. When a doctoral student passes the final defense with revisions pending, confirmation of final approval with revisions completed will no longer be on the form used to report the defense result. Instead the **Chair** or the **graduate coordinator** must e-mail the degree auditor to report final approval. If the full committee needs to review and approve the revisions, the Chair or graduate coordinator will report final approval to the degree auditor once all members have approved.

General Procedures

i. Special member approval: The committee policies have not changed, so a person who is not tenured or tenure-eligible UA faculty must still be approved by the Graduate College as a "special member" in order to serve on committees. Rather than sending a paper request form and CV, the department will use a web form available to graduate coordinators at https://grad.arizona.edu/gcforms/degree-certification/special-member-request to make the request. The CV for the requested member will need to be uploaded with the request. Please be aware that it could take up to a week to add a special member to GradPath after the special member request has been approved by the Graduate College.

ii. Expected graduation term: In the past, doctoral students were not asked to report their expected graduation term until they submitted the paper Committee Appointment form following the comprehensive exams. Now nearly every form submitted by doctoral students will prompt them to report/update/confirm their expected graduation term. The term reported by a student will be recorded or updated on the student's record in UAccess when the form receives final approval by the Graduate College.

GradPath Forms Submitted by Faculty

Nearly all forms in GradPath are submitted by the student and routed to the needed approvers. However, there are a few forms that are NOT submitted by the student:

1. When a doctoral student has had the Comprehensive Examination Committee Appointment form approved, he or she gains access to the Announcement of Doctoral Comprehensive Examination form. Once the Announcement has been approved, formally scheduling the oral comprehensive exam, the Results of the Comprehensive Examination form is automatically created in GradPath. The Chair of the comprehensive exam committee (as designated by the student on the Announcement) will receive a notification e-mail requesting him or her to submit the Results form; as usual, a link will be included in

the e-mail message to open the form. There will also be a link in the e-mail to download the comprehensive exam packet with the policies, procedures and ballots.

The Chair reports the number of Pass, Fail and Abstain votes and the exam result on this form on behalf of the committee, then clicks the "Submit" button to send the form to the Graduate College. (Note that the paper ballots, if used, do NOT need to be returned to the Graduate College since the votes are reported on the form.) When the Graduate College approves or denies the form (i.e. does or does not accept the reported result), the student and all committee members will receive an e-mail notifying them and providing the link to view the form.

2. Similarly, after a doctoral student has the Defense Committee Appointment form approved, he or she will be able to submit the Announcement of Final Oral Defense form. As for the oral comprehensive exam, the Results of Final Oral Defense form is automatically created, and the Chair receives an e-mail with a link to open, complete and submit that form following the conclusion of the defense. Again, the e-mail will include a link to the final defense packet, which includes the policies, procedures, ballots, and the 900-level grade change form. No paper ballots should be returned to the Graduate College. Students should still have paper approval pages ("page 2's") signed by the committee at the defense and return those to the Graduate College.

Graduate Coordinator's Approval

Doctoral Prospectus/Proposal Confirmation: The department will now report when a doctoral student has an approved proposal or prospectus for the dissertation or other culminating work (DNP practice inquiry; DMA document) on file with the department. Once the student has passed the oral comprehensive exam and the result has been accepted by the Graduate College (i.e. the Results form has final approval in GradPath), the graduate coordinator will receive an e-mail requesting that she or he open the Prospectus/Proposal Confirmation form and submit it. The student must have this confirmation filed in GradPath before he or she can schedule the defense using the Announcement of Final Oral Defense form. If the student does not complete the prospectus/proposal for some time after the comprehensive exams, the Graduate Coordinator will **store** the e-mail with the link to the Prospectus/Proposal form so he/she can use it when he/she is ready to confirm approval.

Students Who Began with Paper Forms

A student who has filed one or more Degree Certification forms on paper, following the old procedures, **does <u>not</u>** need to re-submit those forms in GradPath. While all students must submit the Responsible Conduct of Research form in GradPath in order to open the rest of the forms, a student who has had paper forms approved should find the subsequent form(s) available in GradPath once the RCR form is completed. If you or any of your students notice that this is not working correctly, please contact your degree auditor.

Improved Reporting using GradPath/Milestones

As with the paper Degree Certification forms used in the past, the status of GradPath forms and the

information they capture will be captured in the Student Milestones in UAccess Student. (You can navigate to the milestones using the path Main Menu -> Records and Enrollment -> Enroll Students -> Student Milestones.) The switch to GradPath will improve the data in the milestones in a few ways:

- Major advisors and committee members will be identified, using their unique Empl ID number. (With paper forms, advisors' names could sometimes not be determined, so the milestone data was not always complete.) Departments or colleges will be able to run reports from the milestones to track committee service by faculty members.
- Measures of time elapsed from admission to completion of the degree or of any step recorded in the milestones can be checked and reported. (E.g. if a department or college needed to know how long students were in a program prior to taking comprehensive exams or filing their prospectus/proposal, that could be queried and reported.)