### PROPOSAL – 1

### NEW DEGREE PROGRAM

1. **PROPOSED PROGRAM TITLE:** Master of Science in Environmental Dynamics

2. **CIP CODE REQUESTED:**

Link for CIP Codes:  <http://nces.ed.gov/ipeds/cipcode/resources.aspx?y=55>.

03.0104

3. **PROPOSED STARTING DATE:** Fall 2020

4. **CONTACT PERSON**

Name (Provost/Academic Affairs Officer): Dr. Terry Martin

Title: Senior Vice Provost for Academic Affairs

Name of Institution: University of Arkansas Fayetteville

E-mail Address: tmartin@uark.edu

Phone Number: (479) 575-2151

Name (Program Contact Person): Peter Ungar or Jo Ann Kvamme

Title: Director/Assistant Director

E-mail Address: [pungar@uark.edu](mailto:pungar@uark.edu) or [jkvamme@uark.edu](mailto:jkvamme@uark.edu)

Phone Number: 479-575-6603

5. **PROGRAM SUMMARY**

Provide a general description of the proposed program. Include overview of any curriculum additions or modifications; program costs; faculty resources, library resources, facilities and equipment; purpose of the program; and any information that will serve as introduction to the program.

The Environmental Dynamics faculty prepare program graduates to enter the workforce as leaders in the global effort to understand interactions between humans and the environment. Environmental Dynamics students can learn from nearly 100 affiliated faculty members and make use of state-of-the-art research facilities and laboratories throughout our campus. Our approach is interdisciplinary and allows students to work across departments and colleges to gain the tools needed to address today’s most pressing environmental issues. The Environmental Dynamics program’s focus is unique and two-tiered, providing students with a deep-time perspective, which gives human-environmental interactions context, and sustainability/resilience, which gives them relevance. This approach benefits all Environmental Dynamics students and prepares them to meet the challenges of employment that advanced degree-holding professionals face in today’s world.

The master’s program will include the four foundational courses and an additional 12 hours of specialized coursework. There will be an additional six thesis hours (and successful thesis completion and defense) or a total of 36 hours of course work for completion of master’s degree requirements.

The ENDY program would like to add a master’s degree to this current PhD only program. The only curriculum change would be the addition of an ENDY 600V Thesis hours. The current program will not be modified. This will add flexibility to the program to allow students to enter with a bachelor’s degree with a path through a masters to the PhD. Existing resources are sufficient to add this program. There will not be need for increases in faculty, library, facilities or equipment.

List degree programs or emphasis areas currently offered at the institution that support the proposed program.

Presently, undergraduate programs in Biological Sciences, Crop, Soils and Environmental Science, Anthropology, Geosciences, Agricultural Economics, Architecture and various Engineering programs all have graduates that are a good fit for the Environmental Dynamics Program. Presently, they must obtain a masters in a related field before applying to ENDY.

6. **NEED FOR THE PROGRAM**

(Submit Employer Needs Survey Forms)

Provide survey data. Submit numbers that show job availability, corporate demands and employment/wage projections, not student interest and anticipated enrollment. Focus mostly on state needs and less on regional and national needs, unless applicable to the program.

Survey data can be obtained by telephone, letters of interest, student inquiry, etc. Focus mostly on state needs for undergraduate programs; for graduate programs, focus on state, regional and national needs.

Provide names and types of organizations/businesses surveyed.

Letters of support should address the following when relevant: the number of current/anticipated job vacancies, whether the degree is desired or required for advancement, the increase in wages projected based on additional education, etc.

Workforce Analysis Request Form has been submitted to Dr. Nathan Smith, in place of the survey data and is attached as Appendix B, I.

Indicate if employer tuition assistance is provided or if there are other enrollment incentives.

NA

Describe what need the proposed program will address and how the institution became aware of this need.

According to Environmental Science Careers “The job outlook for environmental scientists is excellent. Employment is projected to grow 15% from 2012-2022, which is faster than the average for all occupations. Issues like climate change and fracking have spurred more public interest in the environment.” <https://www.environmentalscience.org/careers> Also, according to the Bureau of Labor Statistics Environmental Scientists and Specialists have a job outlook from 2018-2028 growing 8% (faster than average). While many have bachelor’s degree, we feel the complex issues will be soon requiring master’s level of expertise. <https://www.bls.gov/ooh/life-physical-and-social-science/mobile/environmental-scientists-and-specialists.htm> Our graduates are well prepared to accept these jobs and improve the quality of life in Arkansas.

Indicate which employers contacted the institution about offering the proposed program.

We were not contacted by employers but are being proactive.

Indicate the composition of the program advisory committee, including the number of members, professional background of members, topics to be considered by the members, meeting schedule (annually, bi-annually, quarterly), institutional representative, etc.

The Administrative Board of ENDY is comprised of the Chairs of each department where a primary mentor of an ENDY student resides. The number of departments represented changed through time except for the Director, Peter Ungar (Anthropology), Associate Directors George Sabo (Arkansas Archeological Survey) and Song Feng (Geosciences) and the Assistant Director Jo Ann Kvamme (Environmental Dynamics). The group meet physically at least twice per year, and more if needed.

Indicate the projected number of program enrollments for Years 1 - 3.

9

Indicate the projected number of program graduates in 3-5 years.

9

7. **CURRICULUM**

# Provide curriculum outline by semester (include course number and title).

# (For bachelor’s degree program, submit the 8-semester degree plan.)

Students who seek only the Master of Science Degree must complete 24 hours of coursework which include the following four required courses:

ENDY 5053 Quaternary Environments

ENDY 6013 Environmental Dynamics

ENDY 5113 Global Change

ENDY 6033 Society and the Environment

ENDY 600V ENDY Thesis Research

In addition, student must complete 6 hours of ENDY 600 V (Thesis Research) and submit a research thesis or take a total of 36 hours for a non-thesis MS.

Identify new courses *(in italics)* and provide course descriptions.

*ENDY 600V ENDY Thesis Research* (Typically offered: Fall, Spring, and Summer). May be repeated for degree credit.

Identify required general education courses, core courses and major courses.

ENDY 5053 Quaternary Environments

ENDY 6013 Environmental Dynamics

ENDY 5113 Global Change

ENDY 6033 Society and the Environment

For each program major/specialty area course, list the faculty member assigned to teach the course.

Please see item #8.

The courses are taken based on the student/faculty mentor research interest and vary with each student except for the four core courses.

Identify courses currently offered by distance technology (with an asterisk\*) and endnote at the end of the document.

NA

Indicate the number of contact hours for internship/clinical courses.

NA

State the program admission requirements.

Students are required to hold a BA/BS and meet all Graduate School Admission requirements.

Describe specified learning outcomes and course examination procedures.

Students will leave the program with an in-depth knowledge of earth processes and how humans are effected by and/or cause changes in their environment.

Include a copy of the course evaluation to be completed by the student.

The course evaluation is included as Appendix B, II.

Include information received from potential employers about course content.

We have not heard from specific employers. However, our students are hired as soon as they graduate so we feel the coursework they are provided prepare them well for professional jobs. Students also comment that they are well prepared when they enter the workforce.

Provide institutional curriculum committee review/approval date for proposed program.

December 11, 2019

8. **FACULTY**

List the names and credentials of all faculty teaching courses for the proposed program. Include college/university awarding degree; degree level; degree field; subject area of courses faculty currently teaching and/or will teach. (For associate degrees and above: A minimum of one full-time faculty member with appropriate academic credentials is required.)

Core classes are taught by

ENDY 5053 [Song Feng](https://fulbright.uark.edu/departments/geosciences/directory/feng.php), (PhD, Chinese Academy of Sciences), Atmospheric Physics, Climate Modeling and Amelia Villasenor (PhD, George Washington University), Human Evolution, Macro/Micro Ecological Processes that shape Terrestrial Mammal Community Structure

ENDY 6013 [Stephen K. Boss](https://fulbright.uark.edu/departments/geosciences/directory/boss.php),  (PhD, U North Carolina), Geophysics, Marine Geology, Limnology, Earth Systems

ENDY 5113 Global Change [David W. Stahle](https://fulbright.uark.edu/departments/geosciences/directory/stahle.php),  (PhD, Arizona State U), Dendrochronology, Paleoclimatology, Ancient Forests, Global Change

ENDY 6033 Society and the Environment [Benjamin Vining](https://sites.uark.edu/vining/), (PhD, Boston University), Environmental Archaeology, Anthropogenic Ecology Networks

Indicate lead faculty member or program coordinator for the proposed program.

Peter Ungar lead faculty member and Jo Ann Kvamme program coordinator

Total number of faculty required for program implementation, including the number of existing faculty and number of new faculty. **For new faculty, provide the expected credentials/experience and expected hire date.**

No new faculty will be needed.

For proposed graduate programs: Provide the curriculum vita for faculty teaching in the program, and the expected credentials for new faculty and expected hire date.

The faculty that will teach in the master’s program are already teaching in the ENDY PhD program and their CV are attached as Appendix A with this proposal.

Also, provide the projected startup costs for faculty research laboratories, and the projected number of and costs for graduate teaching and research assistants.

No additional cost the same faculty will work with MS students as work with the PhD students currently.

9. **DESCRIPTION OF RESOURCES**

Current library resources in the field

Current instructional facilities including classrooms, instructional equipment and technology, laboratories (if applicable)

New instructional resources required, including costs and acquisition plan

No new resources needed.

10. **NEW PROGRAM COSTS – Expenditures for the first 3 years**

New administrative costs (number and position titles of new administrators)

Number of new faculty (full-time and part-time) and costs

New library resources and costs

New/renovated facilities and costs

New instructional equipment and costs

Distance delivery costs (if applicable)

Other new costs (graduate assistants, secretarial support, supplies, faculty development, faculty/students research, program accreditation, etc.)

No new costs.

**If no new costs required for program implementation, provide explanation.**

The program will function within the ENDY PhD program.

11. **SOURCE OF PROGRAM FUNDING – Income for the first 3 years of program operation**

If there will be a reallocation of funds, indicate from which department, program, etc.

Provide the projected annual student enrollment, the amount of student tuition per credit  
 hour, and the total cost of the program that includes tuition and fees.

We expect to add 3 students per year at the beginning. The tuition per credit hour for graduate hours is $430.69. If price hold as they are now the student would pay $14,736.60 for the entire MS program.

Indicate the projected annual state general revenues for the proposed program (Provide   
 the amount of state general revenue per student).

Other (grants [list grant source & amount of grant], employers, special tuition rates,   
 mandatory technology fees, program specific fees, etc.).

12. **ORGANIZATIONAL CHART REFLECTING NEW PROGRAM**

Proposed program will be housed in (department/college)

13. **SPECIALIZED REQUIREMENTS**

If specialized accreditation is required for program, list the name of accrediting agency.

NA

Indicate the licensure/certification requirements for student entry into the field.

# NA

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# Provide documentation of Agency/Board review/approvals (education, nursing—initial approval required, health-professions, counseling, etc.)

NA

14. **BOARD OF TRUSTEES APPROVAL**

Provide the date that the Board approved (or will consider) the proposed program.

March 19, 2020

Provide a copy of the Board meeting agenda that lists the proposed program, and written documentation of program/unit approval by the Board of Trustees prior to the Coordinating Board meeting that the proposal will be considered.

15. **SIMILAR PROGRAMS**

# List institutions offering program:

## Proposed undergraduate program – list institutions in Arkansas

Proposed master’s program – list institutions in Arkansas and region

Environmental Sciences MS Arkansas State

There are many undergraduate programs in Environmental sciences however interdisciplinary MS programs are relatively rare and could fill a need of our undergraduates as they pursue environmental careers.

Proposed doctoral program – list institutions in Arkansas, region, and nation

State why proposed program needed if offered at other institutions in Arkansas or region.

List institution(s) offering a similar program that the institution used as a model to   
 develop the proposed program.

Provide a copy of the e-mail notification to other institutions in the state notifying them of the proposed program. Please inform institutions not to send the response to **“Reply All”**. If you receive an objection/concern(s) from an institution, reply to the institution and copy ADHE on the email. That institution should respond and copy ADHE. If the objection/concern(s) cannot be resolved, ADHE may intervene.

**Note: A written institutional objection/concern(s) to the proposed program/unit may delay Arkansas Higher Education Coordinating Board (AHECB) consideration of the proposal until the next quarterly AHECB meeting.**

16. **DESEGREGATION**

State the total number of students, number of black students, and number of other minority students enrolled in related degree programs, if applicable.

NA

1. **INSTITUTIONAL AGREEMENTS/MEMORANDUM OF UNDERSTANDING (MOU)**

If the courses or academic support services will be provided by other institutions or organizations, include a copy of the signed MOU that outlines the responsibilities of each party and the effective dates of the agreement.

NA

1. **ACADEMIC PROGRAM REVIEW**

Provide scheduled program review date (within 10 years of program implementation date).

This program will be reviewed with the ENDY PhD program in 2023

1. **PROVIDE ADDITIONAL INFORMATION IF REQUESTED BY ADHE** **STAFF**
2. **INSTRUCTION BY DISTANCE TECHNOLOGY**

If the proposed program will be offered by distance technology, provide the following information:

Summarize institutional policies on the establishment, organization, funding and management of distance courses/degrees.

Describe the internal organizational structure that coordinates (development, technical support, oversight) distances courses/degrees.

Summarize the policies and procedures to keep the technology infrastructure current.

Summarize the procedures that assure the security of personal information.

Provide a list of services that will be outsourced to other organizations (course materials, course management and delivery, technical services, online payment, student privacy, etc.).

NA – program delivery is on campus only.