



## Department Overview

Geography, Geology, and the Environment (GEO) is a vibrant and collegial Department. As a discipline, Geography has been part of the Illinois State fabric since establishment of the University in 1857; Geology joined Geography in 1969 which was joined by a program in Environmental Science in 2019. The Department is among the most diverse in the University in terms of faculty interests and expertise. We are motivated by academic and professional excellence and dedicated to our roles as educators and researchers through a steady commitment to professional service and development, research, creative endeavors, and knowledge building. Our practices are guided by our latest 2019-2024 Strategic Plan (GEOSP) comprised of 6 major goals focused on building our academic excellence. Our faculty and students are highly regarded by their peers in their respective disciplines.

In CY2021-22 the Department comprised 15 tenured or tenure-track faculty members (including the Chair), 3 full-time APs, 1 full-time and 1 part-time NTT, and 1.5 FTE full-time Civil Service (CS) staff plus a part-time CS Extra Help support staff member. The cornerstones of the Department are our traditional B.S./B.A. programs in Geography, Geology, and Environmental Systems Science and Sustainability. The former two each have a sequence in teacher education—Social Science Teacher Education in Geography and Earth and Space Science Education in Geology. We are home to the Environmental Studies and Urban Studies Minors, and our faculty members continue to contribute to other interdisciplinary programs around the University. The Department offers an M.S. graduate degree in Hydrogeology which is highly specialized and involves assessing and solving societally relevant, scientifically important problems through applied and theoretical research in the broad field of groundwater science. The Department has a long history as a vital contributor to the General Education program through our commitment to regular instruction by faculty and staff.

Our scholarly interests span a multitude of disciplines from the humanities, social sciences, to Earth and environmental sciences. Several members of our faculty also bring knowledge of and training in cutting-edge geographic methodologies and technologies including Geographic Information Systems (GIS), satellite and drone image interpretation, web mapping, and Global Positioning Systems (GPS). We train our students to use these technologies to explore, illuminate, and navigate the complexities that exist between natural systems and human societies. The Geology Program incorporates significant field training, with a capstone field program that specializes in geological mapping. It prides itself in supplementing its traditional curriculum with faculty-led student research opportunities.

Our curricula are grounded in the liberal arts tradition as we educate the next generation of geographers, geologists, hydrologists, and environmental scientists. Our common goal is to graduate broadly trained students prepared to pursue advanced degrees or obtain suitable employment as professionals within or outside of our disciplines. Our students are talented and accomplished in their academic and professional endeavors.

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## Accomplishments and Productivity for FY22

### A. Most Notable Accomplishments

1. **NEW FACULTY HIRE:** The department will welcome Dr. Daniel Kpienbaareh as a new Assistant Professor of Geography and ESSS in August 2022. His expertise lies in food systems, remote sensing and drone technologies.
2. **SUCCESSFUL FACULTY PROMOTIONS:** Drs. RJ Rowley and Jonathan Thayn were promoted to Professor. Dr. Tenley Banik was tenured and promoted to Associate Professor.
3. **HIGH STUDENT SUCCESS METRICS:** The Department scored high on several student success metrics which netted \$26,000 in RERIP funds for the year. Total student enrollment in the department rose to 208, the highest level in many years, a 5% increase from the previous year and a 26% increase over the past 5 years.
4. **SUSTAINED COMMITMENT TO FACILITATING AFFORDABILITY:** The department received the Steve and Lori Nalefski Endowed Scholarship Fund valued at \$100,000 for needs-based scholarships to be awarded to Geology majors. The ESSS, ESSE, and Geography programs began offering new needs-based scholarships for majors through various gifts. Students experiencing financial hardship or those with a need for professional development funds (up to \$500 per year) may apply by submitting an essay to the department Chair explaining their need. The Geography award is made possible through the Michael D. and Patricia A. Sublett Geography Professional Development Fund valued at \$5,000. The Department awarded \$34,300 through 19 student scholarships.
5. **CONTINUED STRONG COMMITMENT TO SCHOLARSHIP:** Faculty published 1.7 peer-reviewed and edited works per tenure-line faculty member and secured 11 new externally funded grants and contracts in CY2021, exceeding ~\$608,000.
6. **EXCEPTIONAL COMMITMENT TO ISU'S TEACHING MISSION:** In CY2021 the department produced 16,875 credit hours; our tenure-line faculty generated 8,864 credit hours with an average of 633 credit hours per person. This continues to rank the department among the highest units in our College and the University.

### B. Goals in support of Educate.Connect.Elevate

The primary goals for the Department in FY2022 were as follows:

1. *Academic programs development and support - Personnel:* Search for and hire new TT faculty line in environmental geography and GIS to address rising student demand; obtain approval to and rehire GIS Technician and Outreach Coordinator position; obtain approval to and rehire LEA Coordinator.
2. *Academic programs development – Curriculum:* Continue to explore new opportunities for engagement in new academic programs on campus including Data Science/Analytics, 4+1 or 3+2 MS programs in either Environmental Sustainability or GIS, Geological Engineering, and micro-credentialing.
3. *Student success – Enrollment management:* Continue to focus on student success including recruitment, retention, and ensuring timely progress through programs. Activities will include an update to our website and promotional materials, scheduling recruitment events in our

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general education course, hosting University advisors for a meet-and-greet and update, participating in university-organized student recruitment and engagement events.

4. *Student success – Capstone experiences*: Return to offering traditional capstone experiences as COVID-19 restrictions relax or are removed. Begin offering field experiences to students as COVID-19 restrictions relax, including our summer field camp in 2021. Strongly encourage all geography and ESSS majors to seek, secure, and successfully complete an appropriate internship experience.
5. *Student success – Professional development*: Continue to explore new opportunities for students to interact with alumni for the purposes of professional development. Activities to include inviting alumni to our geology colloquium, and our various career preparation classes (e.g., GEO 204A001, GEO 204A002); inviting alumni to campus for a day-long visit, publishing volume 46 of our annual yearbook, *Glacial Deposits*; hosting alumni on Alumni Day.
6. *Student success - General education support*: Continue to provide exceptional support to our general education programs by offering adequate number of course sections taught by dedicated faculty members.
7. *Faculty and student success - Teaching*: Continue to provide adequate instructional, technology, and community support to faculty as they adapt their curricula, pedagogies, and lives to COVID-19 restrictions, particularly during spring and summer 2021.
8. *Faculty and student success - Research*: Continue to encourage, value, and provide needed financial resources to faculty and their students in support of research efforts and professional development.

C. Major accomplishments for each goal in B.

1. *Academic programs development and support - Personnel*:
 

*New TT faculty – HIRED*: In fall 2021 we hired a new tenure-track faculty member with principal responsibilities in the Geography and ESSS programs. Daniel Kpienbaareh will join us in fall 2022 as Assistant Professor in physical/environmental geography. His academic interests lie in many various areas of the environment and sustainability, state-of-the-art remote sensing technologies, and a geographic focus on Africa. This expertise will add significant intellectual diversity to our current academic offerings. Daniel's research in Africa and interests in agroecology, ecosystems services, agricultural health, and productivity, along with advanced knowledge of geospatial technologies, including the use of drones, position him well to integrate with other scholars and students on campus and further build on the research and teaching initiatives at ISU. His identity as an African expands the ethnic and cultural diversity of our faculty in critical ways. Dr. Kpienbaareh will contribute to the general education program by teaching some of our most popular courses—GEO 211, and GEO 135. He will also teach GEO 100 and GEO 303 each year as well as upper-level undergraduate/graduate elective courses in his area of expertise.

*New GIS Technician & Outreach Coordinator – HIRED*: The department hired Ryan Lange as its new GIS Technician & Outreach Coordinator. With an M.S. degree Ryan will be able to teach courses in addition to providing critical classroom and laboratory support in our existing courses GEO 300, 303, 304, 363, and 305. He is planning to introduce and teach a new course in Python programming and drones.

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*New Manager of LEA – HIRED:* In the summer, the department hired its new LEA Coordinator, Russell Piontek. This position is supported through external grant funding initiatives headed by Dr. Catherine O'Reilly. The majority of Russell's duties includes the coordination of collection, processing, and analysis of environmental samples collected by the various ISU partners as well as external clients. Other duties include the supervision of undergraduate and graduate student workers and maintenance of relevant grant budgets.

2. *Academic programs development – Curriculum:* As planned, the department offered support for the Data Science/Analytics programs. The most recent version of the curriculum (as of Feb. 2022) does not include any of our classes/expertise in its plan. The Geology program faculty spent the year navigating a major curriculum reform. Part of this effort included hosting a 2-day [NAGT travelling workshop](#) held in February. The Geography and ESSS programs are undergoing self-studies in support of their program reviews that will be submitted to the University in fall 2022. Geography, Geology, and Hydrogeology programs submitted their annual assessment reports in fall 2021. The department introduced 5 new courses and revised several others in the past year (Section D).
3. *Student success – Enrollment management:* Student enrollment in our major programs exceeded a new high of 208 on fall census day. Our recruitment and retention activities included (but were not limited to) an update to our website (focusing on careers) and our promotional materials. The department held recruitment events in its general education courses populated by freshmen and sophomores. In the fall we hosted University advisors over a luncheon for a meet-and-greet and update. Faculty and staff participated in all university-organized student recruitment and engagement events. Considerable attention continued to be placed on building and nurturing welcoming student communities (e.g., geology colloquium).
4. *Student success – Capstone experiences:* We were able to offer a very successful GEO 395 in summer 2021 although enrollment was limited to our majors. All geography majors enrolled in GEO 398A001 (internship experience) secured and successfully completed their internships.
5. *Student success – Professional development:* The Department published volume 46 of *Glacial Deposits*. In the fall, we hosted two alumni for Alumni Day, Joe Kezon (Geography) and Shane Strobe (Geology). Joseph Fluder and Trent Ford visited for a day with Geography and ESSS majors. Several geology alumni engaged with students through their colloquium series.
6. *Student success – General education support:* Continued in our commitment to the general education program, producing 13,365 credit hours across 27 course sections. Most of the sections were taught by tenure-track faculty who generated over half of these credit hours.
7. *Faculty and student success – Teaching:* Continued to provide adequate instructional, technology and community support to faculty as they adapted their curricula and pedagogies to COVID-19 restrictions, particularly during spring and summer 2021. We maintained exceptional tenure-line faculty credit hour generation: In CY2021 the department produced 16,875 credit hours; our tenure-line faculty generated 8,864 credit hours with an average of 633 credit hours per person. This continues to rank the department among the highest units in our College and the University.
8. *Faculty and student success – Research:* Allocated \$26,000 for faculty professional development from RERIP funds. Sustained high scholarly productivity. Faculty published 1.7 peer-reviewed and edited scholarly publications per faculty member. Sustained commitment to scholarly grantsmanship. The department was awarded \$608,000 in new external funding in CY21.

#### D. Other Accomplishments related to Academic Program Development

- Growth in undergraduate enrollments. Total student enrollment in the department rose to 208, a 5% increase from the previous year and a 26% increase over the past 5 years.
- The Earth Space Science Education program ranked as exemplary teacher education program for the second year in a row by the ISBE Teacher Education Program Profile rankings.
- Diversifying Our Curriculum, Courses, and Student Experiences, including COVID-19 Adaptations. We continued to adapt our curriculum to further expand on the breadth and depth of content that we deliver to students, and to ensure that our students remain current with ongoing changes in our disciplines. To expand on the breadth of content offered in our programs, the following new courses were proposed in 2021:
  - GEO 204A002 Career Preparation in ESSS
  - GEO 323 Karst Hydrogeology
  - GEO 375 Qualitative Research Design
  - GEO 441 Climatology and Climate Change
  - GOE 436 Urban Geography
  - GEO 470 Urban and Regional Planning

The following courses and programs, and certificates were revised:

- GEO 436 Urban Geography - Pending
- GEO 341 Climate and Global Environmental Change
- GEO 336 Urban Geography – Editorial Request – Pending
- GEO 307 Teaching Geography/Earth Science in Middle and Sec School
- GEO 261 Teaching Social Science in Geographical Context
- GEO 204 Career Preparation in Geography I
- GEO 360 Hydrogeology
- GEO 370 Urban and Regional Planning
- Minor Environmental Studies
- Hydrogeology GIS Certificate

The most significant updates to the curriculum in 2021, however, continued to occur due to the COVID-19 pandemic which created necessary modifications to instructional methods for every course. Student experiences outside of the classroom were adapted, highlighted by the “Between a Rock and a Hard Place” virtual colloquia series. Although COVID-19 was the catalyst for most of these adaptations described above, it is clear that these efforts will strengthen our curriculum for years to come beyond the pandemic once we return fully to traditional face-to-face instruction and will create new learning experiences and opportunities for our students into the future.

#### E. Other Accomplishments related to Equity, Diversity, and Inclusion.

- Under the leadership of Dr. Lisa Tranel, the department is engaging with the [Unlearning Racism in the Geosciences](#) (URGE) program this spring. All faculty, staff, and students have been encouraged to attend. The curriculum consists of 8 modules that each include peer-reviewed readings on racism and an interview with an expert to offer perspectives and insights on various topics from diverse groups. “The curriculum also provides tips and advice

for becoming more inclusive and or navigating challenges related to racism in the Geosciences.”<sup>1</sup> The purpose of this program is for us to acquire important knowledge that will help us build and nurture learning and working communities welcoming to all faculty, students, and staff.

Members of our department have participated in various EDI workshops and discussions held on our campus over the past year. These include:

- EDI Leaders Circle Retreat – September 2021 (Budikova, Foster, O’Reilly)
- EDI Leaders Circle Spring Symposium – February 2022 (Heil)
- CAS EDI workshop – December 2021 (Budikova, Foster, O’Reilly)
- STEM EDI Taskforce – ongoing (Budikova, Foster, Tranel, O’Reilly)

Under the leadership of the department DEI committee (Heil, Seyoum) and the Chair, the department will administer its annual Climate Survey to all faculty, students, and staff. The outcomes of this survey help chart future directions of the committee.

#### F. Other Accomplishments related to Faculty Success

- *Sustained high scholarly productivity.* Faculty published 1.7 peer-reviewed and edited scholarly publications per faculty member.
- *Sustained commitment to scholarly grantsmanship.* The department was awarded \$608,000 in new external funding in CY21.
- *Exceptional tenure-line faculty credit hour generation:* In CY2021 the department produced 16,875 credit hours; our tenure-line faculty generated 8,864 credit hours with an average of 633 credit hours per person. This continues to rank the department among the highest units in our College and the University.
- *Outstanding faculty commitment to general education:* The Department continued its commitment to General Education, producing 13,365 credit hours across 27 course sections. The majority were taught by tenure-track faculty who generated over half of these credit hours.

#### G. Other Accomplishments related to Student Success

- *Exceptional overall student success outcomes:* The Department scored high on several student success metrics which netted \$26,000 in RERIP funds for the year.
- *Exceptional student excellence:* Geology student Aiden Krieger and ESSS student Sara Schelinski were selected as a Bone Scholars
- *Sustained commitment to individualized student engagement in research:* Faculty offered 21 sections of independent studies and directed research classes that enrolled 38 students. Many other students engaged in faculty-led research efforts voluntarily.
- *Facilitating affordability:* The department received the Steve and Lori Nalefski Endowed Scholarship Fund valued at \$100,000 for needs-based scholarships to be awarded to Geology majors. The ESSS, ESSE, and geography programs began offering new needs-based scholarships for majors through various gifts. Students experiencing financial hardship or

<sup>1</sup> URGE – [Unlearning Racism in Geoscience](#). Accessed on March 3, 2022.

those with a need for professional development funds (up to \$500 per year) may apply by submitting an essay to the department Chair explaining their need. The geography award is made possible through the Michael D. and Patricia A. Sublett Geography Professional Development Fund valued at \$5,000. The department awarded \$34,300 through 19 student scholarships.

- *New resources in support of student field experiences:* The department had unprecedented success during 2022 Birds Give Back event this February. Owing to the efforts of Dr. Dave Malone, we raised over \$30,000 through 151 gifts, ranking 4<sup>th</sup> in the University.

## Internal Reallocations and Reorganizations in FY22

### A. Reallocations or reorganizations.

Included are movement of positions, upgrade of positions, creation of new positions, or reallocation of personnel or operating funds.

- N/A

### B. Use of additional funds from the Provost Office.

- Instructional Capacity Funds (IC-GenED): \$40,230
- Summer Session Funding: \$57,000
- Winter Session Funding: \$14,000
- Academic Enhancement Funds: Renovation of FSA 434: \$181,000 (Provost), \$13,000 (CAS), \$65,000 (Department)
- RERIP: \$26,000
- FCR (Field Camp): \$0
- Strategic Budgeted Carryover (SBC): \$95,400
  - IDC: \$11,862.49
  - Instructional Travel: \$15,000
  - Watts Copy Bill: \$3,179.52
  - Faculty Startup: \$28,000
  - RERIP: \$37,357.99
    - UTA wages: \$8,000
    - COVID-19 Faculty Professional Development: \$26,000
    - Student Recruitment Scholarships: \$4,000

### C. Additional funds from Central Administration.

The following agency funds were moved into general revenue and became available as variance. Unspent funds in FY22 will be requested to be carried over to FY23 (see SBC requests).

- Field Camp (Agency): \$12,984
- Limnology (Agency): \$88,046.21
- Study Abroad (Agency): \$28,565.02
- POG (Agency): \$62,926.47

### D. Additional funds from College and Department.

#### *College: Dean's Allocation:*

- Software for instruction (ENVI, modeling): \$3,400

- Drones for remote sensing: \$8,000
- Instructional & Internship travel: \$3,500

*College: Other Temporary Fund obtained from college:*

- Student Teacher Supervision salaries: \$9,378
- Faculty professional travel: \$7,500

*Department: External Funding:*

- IDC funds: \$3,656.37
- Number of new grants: 6
- Total new funds: \$608,000

*Department: Foundation:*

- Total unrestricted funds: \$359,269
- Total expendable funds: \$3,096,634
- Total new funds received through Annual Giving: \$55,945
- Total new endowed funds: \$100,000
- Total expenditures through student scholarships and awards: \$34,300
- Total number of scholarships awarded: 19

Expenditures include initiatives such as course field excursions, student professional travel, student research support, faculty research support, Department newsletter, and Department promotional materials.

## Major Objectives for FY23

### A. Department's most important forward-looking objectives.

#### *Academic Program Development*

There are several specific initiatives that the department will be engaging in over the next year or so:

- *Geography Program*: Complete self-study, submit program review document to the College and the Office of the Provost in September 2022, complete program review process in spring 2023
- *ESSS IBHE Review*: Complete self-study, submit review document to the College and the Office of the Provost in September 2022, complete review process in spring 2023
- *Geology Program*: Program faculty will continue to work reviewing and revising their curriculum. The goal is to submit the revised curriculum to the college and university curriculum committees for review and approval either in the summer or in August. Outstanding efforts lie in the following areas:
  - Assessment review and update (fall 2022)
  - Updating website (in collaboration with Ryan Lange) (spring 2023)
  - Updating recruitment materials and messaging (in collaboration with Ryan Lange) (spring 2023)
- *Hydrogeology Program*: This spring 2022, program faculty are working with the Office of the Provost to submit application to the IBHE to change the program CIP code. The new classification as *Geological and Earth Sciences, Hydrology and Water Resources Science*, will provide better alignment with faculty expertise and academic interests. Once this process is complete, program faculty plan to begin exploring ways to increase their recruitment efforts and enrollment.

*Equity, Diversity, and Inclusion*

- In spring 2022 the department will conclude the URGE curriculum. In fall 2022, the DEI committee will finalize deliverables suitable for implementation in our department and, in collaboration with the rest of the department, begin drafting a department-wide DEI strategic plan
- Department ASPT Document Revision: In spring 2022, the department begins a holistic review of its ASPT document. The goal is to:
  - improve transparency of the principles that the DFSC uses to evaluate each of the areas of responsibility, teaching, research, and service.
  - provide an updated and more inclusive list of valued contributions in research, teaching, and service that a highly diverse faculty like ours may engage in
  - develop a new set of transparent procedures utilized by the DFSC for allocating raises.

We will initiate this process by administering an anonymous survey to be completed by all department faculty this spring. I anticipate the entire process to be completed sometime in late 2022, or early 2023.

*Student Success*

- Continue to implement aggressive student recruitment and retention initiatives in all our programs
- Resume offering more field excursions and related classes
- Design and submit for curriculum review a new course in Python programming
- Continue to work on strategies to improve our student diversity metrics
- Increase number of and funds for student scholarships through fundraising
- Work in collaboration with Office of Development to launch a mini campaign to raise funds for study abroad courses to Japan and Mexico in 2023. The goal is to minimize the out-of-pocket costs for participating students, making the classes more accessible to a greater number of majors

## Tentative SBC Requests

At the time of writing of this document, the department anticipates carrying over the following funds to FY23:

- **FY22 to FY23: Limnology (Agency to GR transfer):** the Department will request to carry over \$49,900 to FY23 to pay LEA coordinator salary in FY23.
- **FY22 to FY23 to FY24: Study Abroad Fund (Agency to GR transfer):** the Department will request to carry over into FY23 and then FY24, \$28,566 to FY23 to pay for study abroad travel we anticipate during the upcoming two years.
- **FY22 to FY23: IDC:** the Department will request to carry over into FY23, ~\$10,000 in support of research activities.
- **FY22 to FY23: POG Fund (Agency to GR transfer):** the Department may request to carry over into FY23 some funds, ~\$5,000 to pay for minor facilities renovations and upgrades.

## FY23 GEO Budget Requests

These requests were submitted through the CAS online budget system in March.

Request Type	Title	Amount	Request #
Temp/Perm	2023 GEO ESSS Internship Coordinator Summer Stipend	\$7,000	2301
Temp/Perm	2023 GEO GTA	\$13,849	2302
AEF - Equipment	2023 GEO Scientific Instrumentation (Thermo Niton XL2 950 Plus Mining & Soils Analyzer)	\$29,382	2303
Temp/Perm	2023 GEO Permanent Summer Stipend Request for Graduate Coordinator of Hydrogeology Program	\$7,000	2304
Temp/Perm	2023 GEO Dean's allocation Hardware – FSA429	\$30,000	2305
Temp/Perm	2023 GEO Dean's allocation Software - RS	\$3,400	2306
Temp/Perm	2023 GEO Internship	\$2,000	2307
Temp/Perm	2023 GEO Instructional Travel	\$16,000	2308
Temp/Perm	2023 GEO Permanent salary adjustment Academic Advisor	\$8,914	2309
AEF – Equipment	2023 GEO Scientific Instrumentation (Microscopes)	\$5,600	2310