**M.S. Natural Sciences
Strategic Plan
March 7, 2019**

**M.S. Natural Sciences Mission Statement:**

The Master of Science in Natural Sciences program seeks (1) to increase both the depth and breadth of knowledge in the natural sciences for understanding and appreciation of the multidisciplinary nature of science and (2) to provide advanced training and education for expanding current scientific knowledge and skills.

**M.S. Natural Sciences Vision Statement:**

The Master of Science in Natural Sciences program will pursue excellence in graduate-level education and become a top choice for students wishing to pursue graduate studies at the M.S. level in Oklahoma.

1. **Program curriculum development.** The M.S. in Natural Sciences program currently has

thesis and non-thesis options for degree completion. Accelerated B.S./M.S. pathways are also available for chemistry. The program committee will continue to review the feasibility of an embedded graduate certificate option for our degree. The discussion will also include ways to streamline the current thesis and non-thesis options (as appropriate).

a. The NSU mission statement includes promoting “lifelong learning through a broad array of undergraduate, graduate, and professional doctoral degree programs.” This program goal will work towards improving the options our students have in fulfilling their career goals in post-baccalaureate science education.

b. This goal aligns best with the sixth strategic goal, “Ensure institutional effectiveness through continuous improvement.” By exploring an embedded graduate certificate, we hope to give students greater flexibility in meeting their career needs. The graduate certificate is anticipated to support graduate students whose career goals require post-baccalaureate education but do not require a M.S. degree.

c. The embedded graduate certificate is in line with State Regents’ Task Force on the Future of Oklahoma Higher Education recommendation to “focus on the design and implementation of micro-degrees/micro-credentials and competency-based education”.

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| Outcome # 1 Exploration of Embedded Graduate Certificate Option |
| Action Steps:a. Explore whether or not an embedded graduate certificate is appropriate for the M.S. Natural Sciences program.b. If appropriate, structure the graduate certificate program and (if necessary) revise the M.S. Natural Sciences degree to accommodate the certificate program.c. If appropriate, submit the appropriate paperwork for approval by the Department of Natural Sciences and other relevant groups at NSU for approval. |
| Performance Measure(s)a. Performance will be assessed by successfully meeting deadlines for submitting the program changes for review by the relevant committees at NSU. |
| Time Frame: 2019-20 school year | Point Person(s) Program Chair |
| Assessment methods: This goal will be satisfactorily met when the M.S. Natural Sciences program committee has completed reviewing the feasibility of adopting an embedded graduate certificate. |
| Budget Needs: The embedded graduate certificate will utilize existing faculty and institutional resources. |

2. **Program-level recruitment.** The M.S. in Natural Sciences program seeks to develop innovative methods for recruiting students to our program.

a. The NSU vision is to “[shape] the future of its region as the educational partner of choice, setting a standard of excellence by serving the intellectual, cultural, social and economic needs of the University’s diverse communities.” Recruitment is a major component of meeting this endeavor.

b. The second strategic goal is to “Secure and sustain the resources necessary to maximize the University’s capacity for excellence.” Student recruitment works towards this goal by increasing the overall resources available to the institution.

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| Outcome # 1 Targeted recruitment efforts at regional meetings |
| Action Steps:a. Send representatives to Oklahoma Research Day and Oklahoma Academy of Sciences Technical Meeting for recruitment efforts. |
| Performance Measure(s)a. Performance will be determined by successfully attending the undergraduate meetings, disseminating literature, and obtaining contact information for interested students. |
| Time Frame: Ongoing | Point Person(s) Program Chair coordinates effort |
| Assessment methods: Add a question to our program application that asks how the student found out about our program. |
| Budget Needs: Funds are requested to develop the advertising information and travel to and from the regional meeting. |

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| Outcome # 2 Increase recruitment efforts at NSU |
| Action Steps:a. Targeted advertising for ADP chemistry pathway to General Chemistry II (CHEM 1223) and Quantitative Analysis (CHEM 3315) coursesb. Targeted advertising to NSU’s senior chemistry, biology, and physics majors through the academic advisers. |
| Performance Measure(s)a. Creation of advertising documents for the two action steps.b. Implementation of the advertising elements. |
| Time Frame: Ongoing | Point Person(s) Dr. Chris Burba coordinates efforts |
| Assessment methods: Add a question to our program application that asks how the student found out about our program. |
| Budget Needs: Funds are requested to develop the advertising information. |

3. **Identification of At-Risk Graduate Students.** A post-audit review of the program in summer 2019 shows the program is not meeting the targeted graduation rate. The primary roadblock appears to be completing the thesis/capstone requirement. We propose a model that identifies at-risk students so that appropriate faculty can intervene before the student withdraws from the program. All graduate students are required to form a graduate advisory committee. Our current policy is that students are expected to meet with this committee at least annually to go over progress on their degree. We plan to augment the annual meetings with documentation from faculty advisers on student progress on a semester-by-semester basis. Each semester, faculty mentors will be asked whether or not their student is making adequate progress towards his or her degree. Faculty mentors are in the best position to know the student’s progress. In the event a student is not making satisfactory progress, the faculty member will be asked to convene a meeting with the student and his or her advisory committee to chart a plan for student success. Our goal is to shift graduate mentoring into a more proactive model wherein challenges (and their solutions) are identified early.

A second element of our proposed model has the program chair contact each student after they have earned 75% of their required credit hours; this typically falls in the student’s penultimate semester. The goal of the correspondence is to allow students an opportunity to self-identify roadblocks to graduation. In this way, the program chair will also take a more proactive role in student success. The NSU Graduate College has automated systems for program-student correspondence, which we will leverage for this purpose.

a. NSU exists to help students “prepare to achieve professional and personal success in a multicultural and global society.” It is important to gauge how successful our program is in achieving this goal. Maintaining contact with students after graduating is a key part in accomplishing this need.

b. This goal best aligns with NSU’s third strategic goal, “Support economic development and community stewardship at the local, tribal and regional levels.”

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| Outcome # 1 Survey development and implementation |
| Action Steps:a. Develop survey for faculty mentors to complete.b. Implement the survey.c. Create form letters for students who complete 75% of their required credit hours. |
| Performance Measure(s)a. Performance on this goal is measured by successfully developing the surveys and implementing it by the end of the spring 2020 semester. |
| Time Frame: 2019-20 | Point Person(s) Program Chair |
| Assessment methods: Successful development and implementation of forms. |
| Budget Needs: The surveys will be created with Google Forms. There is no need to allocate funds for the surveys. |