## Application Related Information

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| Application: | Application Not Verified | Iteration Name: | 202410_GR_G |
| Grad Program Applying To: | MES | Program Name: | MES |

## Recommendation Information

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| Recommended By: | Abir Biswas | Recommenders Title: | Dr |
| Recommenders Institution: | The Evergreen State College | Contact Name: | Mackenzie Kleiva |
| Waive Access to Recommendation Ltrs: | I choose to waive my right to review this recommendation. | Recommendation Waiver Choice: | |
| Recommendation Form Submitted: | ✓ | Recommendation Status: | Received |
| Received Date: | 06/24/2023 08:34 AM | Recommender Assessment: | I recommend this applicant without reservation. |
| Recommendation Type: | General | Recommender Form: | Letter of Recommendation |
| Recommendation Entity ID: | 1024000110045085 | Recommendation Owner: | Josephine Bernier |

## Recommender Form Questions

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| How long have you known applicant: | | Applicant ability as self-directed learner: | |
| Time since last contact with applicant: | | Applicant as productive member of group: | |
| Relationship with Applicant: | | Applicant most significant strengths: | |
| Ability to complete rigourous grad program: | | Responsibility/reliability: | |
| Communication Skills - Oral: | | Communication skills - written: | |
| Service Orientation-sensitivity/empathy: | | Ability to work independently: | |
| Ability to handle stress: | | Ability to think critically: | |
| Ability to analyze/problem solve: | | Ability to think creatively: | |
| Openness to feedback: | | Potential for leadership: | |
| Ability to work in a team: | | Personal/professional reflection: | |

## Description Information

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| Description: | | Form URL: | https://evergreenstatecollege.radiu |

## Other Information

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| Created Time: | 06/08/2023 03:27 PM | Created By: | Josephine Bernier |
| Modified Time: | 06/24/2023 08:34 AM | Modified By: | Josephine Bernier |

June 24, 2023

The Evergreen State College
Masters in Environmental Studies Program
Olympia WA, 98505

Dear Evergreen MES Program,

I am writing to very strongly recommend Mackenzie Kleiva's application to the MES program at The Evergreen State College. I know Mackenzie very well as she was an outstanding student of mine during programs in 2016-17, 2017-18, and 2018-19 at The Evergreen State College —and she consistently demonstrated an excellent work ethic in addition to an outstanding understanding of the course material. Since graduating from Evergreen, Mackenzie has been applying her expertise in environmental sampling and analyses, currently as the co-executive director of Metamimicry (www.metamimicry.com/). Their notable achievements have included a grant from the USDA, and recently a partnership with the Squaxin Island Tribe to develop SPoRE (Salish Place of Remediation Education), which includes a 2-yr plan to start a tribe-run mushroom program. Mackenzie sees her future combining science and policy, consistent with her work with Metamimicry, and the MES degree will be an excellent next step for her to further develop her skills and contribute to supporting the environment in Washington State.

Mackenzie is a terrific student who is ready for graduate school-- and I firmly believe that she is very motivated and well-prepared to excel in Evergreen's MES program. She was first an excellent student in *Mathematics in Geology* (taught with a mathematician) during Fall-Winter 2017-18 and she was then a terrific student in *Integrated Natural Science* (taught with a chemist and 2 biologists) during Fall and Winter of 2017-18. Mackenzie particularly excelled in my upper division *Environmental Analysis* program (taught with an analytical chemist, Fall-Winter-Spring 2018-19), which was a very intensive and rigorous year-long program that included a capstone research component. Mackenzie was an exceptionally well-engaged and well-prepared student throughout all aspects of all of my programs and she was able to do this in spite of a very time-consuming off-campus job (20-30 hrs/week I believe during her time at Evergreen).

In *Environmental Analysis*, Mackenzie was a dedicated and enthusiastic student, displaying an excellent understanding of the upper division material that we covered in aqueous geochemistry and biogeochemistry, and consistently displaying terrific teamwork and leadership skills. Mackenzie took important leadership roles in all of the group research projects that she participated in during our program, and her teammates commented on the high quality of her

work as well as her attention to detail. Mackenzie is also a very strong writer and each quarter she played an integral role in helping her group produce their major research paper and presentation. Her groups consistently produced excellent work, and evaluations by her fellow students indicated that she was doing more than her share and that she was a strong contributor to all facets of group projects.

Mackenzie took excellent advantage of opportunities to conduct research during her time at Evergreen, and based on her consistently excellent to outstanding work, she is very well prepared to contribute to research at the graduate level. Mackenzie first demonstrated her excellent research skills when she was an excellent SURF (summer undergraduate research fellow) student in my lab during summer 2017 (at the end of her 1st year), during which she worked with a more advanced student – and she demonstrated an excellent ability to develop research skills and contribute quickly to advanced work. Notably, while Mackenzie was a student at Evergreen, she took the initiative to get trained on 3 of Evergreen's analytical instruments including the ion chromatograph (IC, Dionex IC25A), the inductively coupled plasma-mass spectrometer (ICP-MS, *PerkinElmer Elan DRC-e*), and the mercury analyzer (Nippon MA-3000). Training for each instrument included ~10-15 hrs of theory/practice and a final "operator's test"—demonstrating Mackenzie's commitment to developing research skills and her toolbox to study environmental processes. Mackenzie was successful in using all 3 of these instruments to independently collect data during research projects in the *Environmental Analysis* program and was always very diligent following standard quality assurance/quality control procedures to produce good quality data. I strongly believe that Mackenzie has the research background to produce an excellent MES research project-- and I am confident that she is prepared to excel in Evergreen's MES program.

In the winter and spring quarters of *Environmental Analysis*, Mackenzie further developed her research skills through an outstanding capstone research project. Mackenzie started with an excellent NSF-style proposal entitled "Mercury in salmon: Effects of chum carcass enrichment on a stream ecosystem", with the goal of better quantifying the effect of chum salmon in adding mercury to stream ecosystem biota. Mackenzie acquired salmon samples for her project in coordination with local fishermen, and analyzed salmon from a variety of sites for mercury during the winter (as seed-data for her proposal) and spring (when completing her project). Mackenzie read and wrote detailed annotations for >10 peer-reviewed articles, providing a strong foundation for her proposed work. Mackenzie final (winter quarter) proposal, was excellent and included terrific information and justification for the proposed work. While I missed Mackenzie's spring quarter research and final presentation (as I was abroad on sabbatical), I know from my analytical chemistry teaching colleague (in *Environmental Analysis*) that Mackenzie's final project was terrific! Mackenzie project was very well-designed and showed an a very strong aptitude for scientific laboratory work and data analysis—and I believe that the quality of this independently designed and implemented research demonstrates Mackenzie's understanding of the effort and commitment needed to produce high quality research.

I believe that Mackenzie is a terrific candidate for the MES program, not just because of the knowledge and skills she developed in the sciences, but also because of her skill in communicating science concepts with her colleagues and her genuine interest in connecting

science to policy. Her current work with Metamimicry speaks to this, building on her the exceptional collaboration skills she demonstrated while at Evergreen. Her understanding of the material and her interest in supporting colleagues skills led me to ask her to be my tutor/grader for historical geology (fall quarter INS) and soils (winter quarter INS program). Unsurprisingly, Mackenzie did a terrific job, given her preparation and the seriousness with which she approaches her academic pursuits-- and numerous students pulled me aside to let me know that they appreciated her efforts. Importantly, Mackenzie has consistently demonstrated academic interests broader than the science-focus of my programs. Looking back on seminars and related conversations, I can see how she consistently demonstrated an interest in how environmental science impacts humans via policy—and as she now applies to the MES program, it is clear that her career interests are in environmental studies and connections to environmental policy.

I believe that Mackenzie is very excited about the opportunity to join the MES program, and down the road to be involved in addressing environmental issues in Washington state. I honestly believe that Mackenzie is exceptionally well-prepared to succeed in the MES program at Evergreen and I very enthusiastically support her application. Please feel free to contact me for any additional details that you would require to better evaluate her application.

Sincerely,
Abir Biswas

Abir Biswas, Ph.D.
Academic Dean
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