Staff Handbook

Name	*Dr. Elly Arliani, M.Si.*		
Post	*Mathematics Education*		
Academic career	*Undergradute Degree*	*Universitas Negeri Medan*	*1991*
	Master Degree	*Universitas Gadjah Mada*	*2002*
	Doctoral Degree	*Universitas Negeri Yogyakarta*	*2019*
Employment	*Position: Lecturer*	*Employer: UNY* *UNP*	*Period: 2004-Present* *Period: 1992-2004*
Research and development projects over the last 5 years	1. *Eksplorasi Pelaksanaan Asesmen Dalam Pembelajaran Matematika SMP dan SMA dengan Kurikulum Merdeka di Yogyakarta (year: 2025, amount of financing: Rp.24.000.000,00)* 2. *Pengembangan Instrumen kemampuan Penalaran Kritis dan berpikir kreatif dengan penskalaan Stimulus dalam Pembelajaran Matematika Berbasis Pendekataan Deep Learning (year: 2025, amount of financing: Rp.50.000.000,00)* 3. *Modifikasi metode Surveys of Enacted Curriculum (SEC) untuk mengevaluasi keselarasan antara asesmen dan kurikulum pada asesmen standarisasi pendidikan daerah tingkat SMA di Daerah Istimewa Yogyakarta (year: 2025, amount of financing: Rp.50.000.000,00)* 4. *Pengembangan Asesmen Autentik Matematika SD Model Testlet berbasis Komputer Terintegrasi Deep Learning dan Adiwiyata (year: 2025, amount of financing: Rp.120.000.000,0)* 5. *Desain Didaktis Digital: Mengintegrasikan Emergent Model dengan Dynamic Ethno Situation untuk Menjembatani Proses Abstraksi Siswa (year: 2025, amount of financing: Rp.51.380.000,00)* 6. *Pemanfaatan Teknologi Informasi Pada Asesmen Pendidikan di Asia Tenggara (year: 2024, amount of financing: Rp.24.000.000,00)* 7. *Model Pembelajaran PBL Berbantuan UNO Math Berbasis QR Code untuk Meningkatkan Kemampuan Berpikir Tingkat Tinggi dan Minat Belajar Siswa SMP (year: 2024, amount of financing: Rp.20.000.000,00)* 8. *Konstruksi Mathematical Proficiency Siswa Visual Impairment di Kelas Inklusif SMA (year: 2024, amount of financing: Rp.49.580.000,00)*		

	9. *Design Differentiation Instructional: Prespektif Learning Profile untuk Meningkatkan Computational Thinking Skill Siswa SMP pada Materi Geometri* *(year: 2024, amount of financing: Rp.53.100.000,00)* 10. *Pengembangan Instrumen Tes Diagnostik Model Testlet berbasis TIK untuk Pembelajaran Matematika SMP: Solusi atas permasalahan guru menyiapkan formatif asessmen dalam kurikulum merdeka* *(year: 2024, amount of financing: Rp.50.000.000,00)* 11. *Model asesmen sebelum pembelajaran matematika untuk mendukung perencanaan pembelajaran terdiferensiasi pada implementasi Kurikulum Merdeka* *(year: 2023, amount of financing: Rp.24.000.000,00)* 12. *Konstruksi Mathematical Proficiency Siswa Visual Impairment diKelas Inklusif SMA* *(year: 2023, amount of financing: Rp. 27.400.000)* 13. *Model Pengukuran Capaian Pembelajaran Lulusan sebagai Upaya Peningkatan Mutu Pendidikan: Implementasi pada Prodi S2 Pendidikan Matematika* *(year: 2023, amount of financing: Rp.40.000.000,00)* 14. *Pengembangan Manajemen Model Perkuliahan Semiriset pada Program Studi Doktor Pendidikan Matematika* *(year: 2023, amount of financing: Rp.20.000.000,00)* 15. *Analisis Cognitive Dissonance Siswa SMP Kelas VIII ditinjau dari Kemampuan Pemecahan Masalah dan Berpikir Kritis Matematis* *(year: 2023, amount of financing: Rp.20.000.000,00)* 16. *Pengaruh Analisis Kecocokan Model pada Teori Respons Butir Terhadap Reliabilitas Bersyarat, Nilai Fungsi Informasi, dan Kesalahan Pengukuran Instrumen Pengukuran* *(year: 2023, amount of financing: Rp.50.000.000,00)* 17. *Pengembangan Bahan Ajar Metodologi Penelitian Pengembangan dalam Pendidikan Matematika* *(year: 2023, amount of financing: Rp.40.000.000,00)* 18. *Studi tentang literasi matematika siswa SMP* *(year: 2022, amount of financing: Rp.24.000.000,00)* 19. *Analisis Kemampuan Siswa dalam Menyelesaikan Soal Literasi Matematika Ditinjau dari Self-efficacy Matematis Siswa Kelas VIII SMP di D.I.Yogyakarta* *(year: 2022, amount of financing: Rp.25.800.000,00)* 20. *Penerapan Remidiasi Kesulitan Belajar Matematika dan Efektivitasnya ditinjau dari Prestasi Belajar Matematika Siswa* *(year: 2021, amount of financing: Rp.24.000.000,00)*

Industry collaborations over the last 5 years	1. *Pelatihan Analisis Data Kuantitatif dengan JASP/Jamovi bagi Guru Matematika SMA di Kabupaten Bantul* *Year: 2025* *Amount of financing: Rp.10.000.000,00* *Partners: Jailani, Heri Retnawati, Kana Hidayati, Dwi Lestari* *Industry collaboration : MGMP SMA Kabupaten Bantul* 2. *Workshop Desain Pembelajaran Matematika Berbasis Deep Learning dan Asesmennya Bagi Guru Matematika SMP di Kabupaten Bantul Yogyakarta* *Year: 2025* *Amount of financing: Rp.35.000.000,00* *Partners: Kana Hidayati, Djamilah Bondan Widjajanti, Husna 'Arifah* *Industry collaboration : MGMP SMP Kabupaten Bantul* 3. *Best Practice Pelaksanaan Pembelajaran Matematika SMP pada Implementasi Kurikulum Merdeka di Yogyakarta* *Year: 2024* *Amount of financing: Rp.8.000.000,00* *Partners: Jailani, Heri Retnawati, Kana Hidayati* *Industry collaboration : MGMP SMP Kabupaten Sleman dan Bantul* 4. *Pelatihan Penyusunan Instrumen dalam Penilaian Sebelum Pembelajaran Matematika yang Menggunakan Model Pembelajaran Berdiferensiasi Bagi Guru Matematika SMP di Kabupaten Bantul yang Menerapkan Kurikulum Merdeka* *Year: 2023* *Amount of financing: Rp.8.000.000,00* *Partners: Jailani, Heri Retnawati, Kana Hidayati* *Industry collaboration : MGMP SMP Kabupaten Bantul* 5. *Identifikasi Permasalahan Penerapan Kurikulum Merdeka di SMP Negeri 1 Banguntapan* *Year: 2022* *Amount of financing: Rp.8.000.000,00* *Partners: Jailani, Heri Retnawati, Kana Hidayati* *Industry collaboration : SMP Negeri 1 Banguntapan* 6. *Webinar Implementasi Pembelajaran dengan Frame Work Stem (Science, Technology, Engineering, and Mathematics) dan Penilaiannya di SMP* *Year: 2021* *Amount of financing: Rp.9.000.000,00* *Partners: Jailani, Heri Retnawati, Kana Hidayati, Fitriana Yuli Saptaningtyas, Kus Prihantoso Krisnawan* *Industry collaboration : guru matematika dan IPA SMP seluruh Indonesia*
Patents and proprietary rights	1. *Aplikasi Tes Diagnostik Model Testlet Berbasis TIK untuk Pembelajaran Matematika SMP (2024)*

	2. *AnaliSis Diacnostic Belajar (2024)* 3. *Model Pembelajaran CAKAP (2024)* 4. *Instrumen Pengukuran Kecakapan Matematis (2024)* 5. *Instrumen Kemampuan Berpikir Kritis Materi (2024)* 6. *Instrumen Tes Penalaran Matematis Bangun Ruang Sisi Datar untuk Siswa SMP Kelas VII (2024)* 7. *Instrumen Tes Kemampuan Siswa SMA Dalam Menyelesaikan Masalah Kombinatorik (2023)* 8. *LKPD Materi SPLDV Pada Pembelajaran Matematika dengan Pendekatan Problem Solving dan Strategi DAPIC untuk Siswa Kelas VIII (2023)* 9. *Modul Ajar Materi SPLDV Pada Pembelajaran Matematika dengan Pendekatan Problem Solving dsan Strategi DAPIC untuk Siswa Kelas VIII (2023)* 10. *Instrumen Tes Kemampuan Literasi Matematika Materi SPLDV untuk Siswa Kelas VIII (2023)* 11. *Tes Kognitif Fisika Terintegrasi Dengan Keterampilan Berpikir Kritis Dan Keterampilan Berpikir Kreatif (2022)* 12. *Instrumen Tes Literasi Matematika Materi Bangun Ruang Sisi Datar dan Statistika (Pemusatan Dan Penyebaran Data) untuk Siswa SMP Kelas VIII (2022)* 13. *Modul Pembelajaran Remedial Matematika Persamaan dan Pertidaksamaan Nilai Mutlak Linear Satu Variabel untuk SMA/MA Kelas X (2021)* 14. *Video Pembelajaran Remidial Dengan Pendekatan Contextual Teaching and Learning (CTL) pada Materi Bangun Ruang Sisi Datar Kelas VIII (2021)*
Important publications over the last 5 years	1. *Senjayawati, E., Isnawan, M.G., Sugiman, Arliani, E. (2025). Didactical Design Based on Lesson Studies for Enhancing Problemsolving Abilities when Learning Numerical Patterns. Mathematics Teaching Research Journal Spring, 17(2), 129-153. https://s3.amazonaws.com/files.commons.gc.cuny.edu/wp-content/blogs.dir/34462/files/2025/05/6.Didactical-Design-.pdf* 2. *Anggraini, A., Arliani, E. (2025). CTL-Deep Learning: Its Influence on Critical Thinking Skills and Self-Confidence in Linear Equation System Material. Jurnal Math Educator Nusantara, 11(1), 42-57. https://ojs.unpkediri.ac.id/index.php/matematika/article/view/25185* 3. *Firdayana Makmur, Heri Retnawati, Elly Arliani. Development and Evaluation of Cognitive Test Instruments of Sequence and Series Topic Grade XI: The Rasch Model. AIP Conf. Proc. 3285, 030001; 27 Maret 2025. https://doi.org/10.1063/5.0262927*

	4. *Amini, N., Arliani, E. (2025). Assessment Quality in Mathematics Learning: An Analysus Critical Thinking Instruments for Derivative Topics. Jurnal Ilmiah Profesi Pendidikan, 10(1), 897-905. DOI: https://doi.org/10.29303/jipp.v10i1.3087* 5. *Retnawati, H., Kardanova, E., Sumaryanto, Prasojo, L.D., Jailani, Arliani, E., Hidayati, K., Susanti, M., Lestari, H.P., Apino, E., Rafi, I., Rosyada, M.N., Tuanaya, R., Dewanti, S.R., Sotlikova, R., Kassymova, G.K. (2024). A Systematic Review of the Use of Technology in Educational Assessment Practices: Lesson Learned and Direction for Future Studies. International Journal of Robotics and Control Systems, 4(4), 1656-1693: ISSN 2775-2658. http://pubs2.ascee.org/index.php/ijrcs* 6. *Sumbaji, P., Marsigit, Arliani, E., (2024). The Voice of Visually Impaired Students: Differentiated Mathematics in Instruction in an Inclusive Class. Specijalna Edukacija I Rehabilitacija, 23(4), 361-377. https://doi.org./10.5937/specedreh23-50095* 7. *Sumbaji, P., Marsigit, Arliani, E., (2024). Active Learning Barriers in Developing Matjematical Proficiency: Comparing Visual Impairment Students' and Teachers' Perspective. Journal of Curriculum and Teaching, 13(1), 48-60. https://doi.org./10.5430/jct.v13n1p48* 8. *Sumbaji, P., Marsigit, Arliani, E., Ratnasari, G.I., (2024). Differentiated Mathematics Instruction: Perception, Readiness, and Practice Of Indonesian Teachers. Jurnal Aula de Encuentro, 26(1), 24-52. http://dx.doi.org/10.17561/ae.v26n1.8790* 9. *Sinaga, Y.D.K., Arliani, E. (2024). Do Habits of Mind and Cognitive Style Affect Critical Thinking Ability of High School Students? Jurnal Kependidikan, 10(3), 1243-1254. E-ISSN: 2442-7667. DOI:10.33394/jk.v10i3.12730* 10. *Sinaga, Y.D.K., Arliani, E., Ngala, J.C., Agustina, N.L. I.T. (2024) Accuracy of Self-Assessment and Peer Assessment in Learning : A Systematic Literature Review. Jurnal Paedagogy, 11(2), 312-322. DOI: https://doi.org/10.33394/jp.v11i2.9417* 11. *Azizah, N.L., Arliani, E., Purbaningrum, M., Ramadhan, S. (2024). Literasi Matematika Materi Sistem Persamaan dan Pertidaksamaan Linier: Pengembangan Butir Soal. Aksioma, 13(2), 708-719. **https://doi.org/10.24127/ajpm.v13i2.8547*** 12. *Dewi, E., Arliani, E., Setyaningrum, W.(2024). STEM approach in middle school mathematics learning: What is teacher's perception of it? AIP Conf. Proc. 2622, 140006; 29 April 2024. https://doi.org/10.1063/5.0133954* 13. *Julianingsih, E., Retnawati, H., Arliani, E. (2024). Analysis of Statistics Test Based on Yogyakarta Culture for Grade VIII with Anbuso 8.0. AIP Conf. Proc. 2622, 080009; 29 April 2024. https://doi.org/10.1063/5.0133856*

14. *Hayuningrat, S., Retnawati, H., Arliani, E. (2024). Assessment of Mathematics: A review of Literature Largescale Assessment and Classroom Assessment on its Outcomes and Implementation Issues. AIP Conf. Proc. 2622, 080016; 29 April 2024.* https://doi.org/10.1063/5.0133842

15. *Virdaus, M., Retnawati, H. Arliani, E. (2024). Analysis of Indicators which Items are Difficult to Solve in Solving Social Arithmetic Problems in Junior High School? AIP Conf. Proc. 2622, 080015; 29 April 2024.* https://doi.org/10.1063/5.0133673

16. *Nisa, F.K., Arliani, E. (2023). Junior High School Students' Mathematical Literacy in Terms of Mathematical Self-Efficacy. Jurnal Elemen; 9(1), 283–297.* https://doi.org/10.29408/jel.v9i1.7140

17. *Jailani, Retnawati, H., Rafi, I., Mahmudi, A., Arliani, E., Zulnaidi, H., Hamid, H.S.A., Prayitno, H.J. (2023). A Phenomenological Study of Challenges that Prospective Mathematics Teachers Face in Developing Mathematical Problems that Require Higher-Order Thinking Skills. EURASIA Journal of Mathematics, Science and Technology Education, 19(10), em2339.* https://doi.org/10.29333/ejmste/13631

18. *Susanti, D., Retnawati, H., Arliani, E., Irfan, L. (2023). Peluang dan Tantangan Pengembangan Asesmen High Order Thinking Skills dalam Pembelajaran Matematika di Indonesia. Jurnal Inovasi Pembelajaran Matematika: PowerMathEdu (PME), 2(2), 229-242.* DOI: 10.31980/powermathedu.v2i2.3096

19. *Ramadhan, S., Arliani, E., Purbaningrum, M., Azizah, N.L. (2023). The Development of Hots-Based Financial Mathematics Question to Support Studets' Mathematical Communication Skill. AKSIOMA: Jurnal Program Studi Pendidikan Matematika, 12(4); 3657-3669.* DOI: 10.24127/ajpm.v12i4.8118

20. *Azriah, A., Retnawati, H., Arliani, E. (2023). Potential EffectsoOf Pisa-Type Mathematical Assessment.): Jurnal Pedagogi Matematika, 9(1); 29-37.* DOI: 10.21831/jpm.v9i1.19027

21. *Sari, A.F.K., & Arliani, E. (2023). Effectiveness Of Situation Based Learning Model on Problem Solving Abilities and Mathematical Disposition. Jurnal Riset Pendidikan Matematika, 10(1); 78-88.* DOI: 10.21831/jrpm.v10i1.56320

22. *Bazuri, A., & Arliani, E. (2022). Development of Trigonometry Module Based on PBL that Oriented to High School Students' Concept of Understanding. Jurnal Riset Pendidikan Matematika, 9(1), 57–69.* https://doi.org/10.21831/jrpm.v9i1.50119

23. *Septiani, S., Retnawati, H., Arliani, E. (2022). Designing Closed-Ended Questions into Open-Ended Questions to Support Student's Creative Thinking Skills and Mathematical Communication Skills. JTAM (Jurnal Teori dan Aplikasi Matematika), 6(3), 616-628.* https://journal.ummat.ac.id/index.php/jtam/article/view/8517

	24. *Hilmi, I., Fadlila, N.,Ramadanti, E., Retnawati, H., Arliani, E. (2022). Development of Higher Order Thinking Skills Test based on Revised Bloom Taxonomy JTAM (Jurnal Teori dan Aplikasi Matematika), 6(2), 341-353. https://journal.ummat.ac.id/index.php/jtam/article/view/7292/pdf*
Activities in specialist bodies over the last 5 years	*Tim Unit Penjaminan MUTU FMIPA UNY (Gugus Penjaminan Mutu Prodi Doktor Pendidikan Matematika, 2023-2025)*