

Transforming Teachers into Teacher Leaders of Mathematics

https://digitalcommons.imsa.edu/pfs_pr/47/

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****After the presentation, I would greatly appreciate your feedback by completing a 2-minute survey. 😊**

www.tinyurl.com/IMSAsurvey22

Objective: Attendees will 1) discuss what it means to be a teacher leader of mathematics, within and beyond the classroom, 2) discover steps that teachers can take to begin being recognized as teacher leaders of mathematics, and 3) determine actions that education leaders can take to promote the development of teacher leaders of mathematics. The presenter will share examples from her own journey in becoming a teacher leader of mathematics and will provide teachers and education leaders with recommendations and resources for transforming teachers into teacher leaders of mathematics across all levels.

What is a teacher leader?

- Lead within and beyond the classroom
- Influence others toward improved educational practice
- Identify with and contribute to a community of teacher leaders
 - Katzenmeyer and Moller (1996) from <https://files.eric.ed.gov/fulltext/EJ1103358.pdf>

What can teachers do to begin being recognized as Teacher Leaders of Mathematics? (TLM)

How can Education Leaders Transform Teachers into teacher leaders of mathematics? (ELT²)

1. TLM: Join at least 1 Professional Organization for Math Teachers

ELT²: Encourage Membership to Professional Math Teacher Organizations

- *Illinois Council of Teachers of Mathematics (ICTM) - <https://www.ictm.org/>
 - *Examples of how to get involved - <https://www.ictm.org/volunteer-with-ictm>
- National Council of Teachers of Mathematics (NCTM) - <https://www.nctm.org/>
- Benjamin Banneker Association (Black student focus) - <http://bbamath.org/>
- TODOS: Mathematics for All (Latinx student focus) - <https://www.todos-math.org/>

2. TLM: Continue to learn and grow by attending conferences/webinars/workshops and/or participating in cohorts or credentialing programs, then reflect/try/apply

ELT²: Support teacher attendance at conferences/webinars/workshops/online PD or cohorts/micro-credentialing programs (info, time, & budget for fees and stipend)

- Check the websites of the listed organizations for dates of upcoming conferences (fee based)
- Check organizations and/or read emails for info regarding FREE webinars for members
 - Example - <https://www.ictm.org/ictm-webinars>
- Consider online PD – <https://www.imsa.edu/centers/educator-development/available-courses/>
- Take advantages of opportunities for cohorts, micro-credentialing, or National Certification
 - Nepantla Cohort for Social Justice - <https://www.nepantlateachers.org/nepantla-cohorts>
 - Illinois Math & Science Academy for STEM - <https://www.imsa.edu/centers/educator-development/educator-microcredential/>
 - National Board of Professional Teaching Standards - www.nbpts.org

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3. **TLM: Lead/present/share within the department/school and/or at a conference, webinar, podcast, website, You-Tube, etc.**

ELT²: Provide teachers with opportunities to lead meetings, committees, or initiatives within the school/district and/or encourage teachers to present or co-present at conferences/webinars

- Investigate calls for proposals from organizations/conferences and submit a proposal (Title, Description, Level, Strand Focus?) to present at a conference
- Lead a podcast - https://blog.feedspot.com/math_podcasts/
- Create a PUBLIC class website or blog
 - <https://sites.google.com/msd19.org/reggieduncan/duncans-home> (Reggie Duncan)

4. **TLM: Connect, Collaborate, and Learn from Professionals Outside of “Mathematics”**

ELT²: Permit PD time, stipend, or graduate credit for teachers to explore/connect/plan

- Engage in “non-math” events or workshops
 - *Materials Camp 4 Teachers - <https://www.asmfoundation.org/teachers/materials-camps/year-one/>
 - Math & Machining Workshop - https://twitter.com/IMSA_/status/1143866754181062656
 - Ranken STEM Camp for Educators - <https://ranken.edu/programs/summer-stem-academies-for-educators/>
 - Manufacturing Day – <https://creatorswanted.org/mfgday/>
 - Career Expo – Talk to your CTE Director (https://www.isbe.net/Documents/efe_directory.pdf)
- Shadow Professionals in STEM or take a “non-math” class at a community college
 - Crash Reconstructionist
 - Go to <https://actar.org/directory> & search w/in your state to find a local reconstructionist
 - Contact Kelly for an ILLINOIS STATE POLICE RECONSTRUCTIONIST
 - Contractor/Construction Worker/Carpenter/Developer
 - R3 Development - <https://twitter.com/teachers4steam/status/1387748725532004354>
 - Habitat for Humanity - <https://www.habitat.org/volunteer/near-you/find-your-local-habitat>
 - Surveyor – community college class or PD experience
 - Ex – ENGR 251 @ Southwestern Illinois College - <https://www.swic.edu/academics/transfer-degrees/engineering/curriculum/>
 - Ex – Parkland College – <https://www.parkland.edu/Main/Academics/Departments/Agriculture-Engineering-Science-Technologies/Areas-of-Study/Land-Surveying>
- Join non-math organizations
 - AIAA - www.aiaa.org/membership/types-of-membership/educator-membership
 - Civil Air Patrol - www.gocivilairpatrol.com/programs/aerospace-education/for-educators
- Observe, discuss curricular connections, and interact with teachers from other subjects
- Integrate/promote career connections & opportunities - https://digitalcommons.imsa.edu/pfs_pr/39/
- Develop collaborative projects/activities that connect other disciplines & community resources
 - Remijan, K. W. (2017). *Project-Based Learning ... to Motivate Secondary Mathematics Students*. **Interdisciplinary Journal of Problem-Based Learning**, 11(1). <http://docs.lib.purdue.edu/ijpbl/vol11/iss1/1/>
 - Remijan, K.W. (November 22, 2017). *Building Mathematical Skills and Community Relationships Through Crash Reconstruction*. **ASCD Express**. <http://www.ascd.org/ascd-express/vol13/1306-remijan.aspx>
 - Remijan, K.W. (September 2018). *Cultivating the Machining Field by Planting Seeds in the Math Classroom*. **The Record**. 24-27. Retrieved from <https://nimsa.org/wp-content/uploads/2019/02/Sept18-Record-web-compressed.pdf>

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5. **TLM: Observe classrooms across all levels, mentor new teachers, teach a methods course at a local university, and/or partner with teachers regarding instructional strategies or curriculum/project development.**

ELT²: Develop a mentoring program or initiate an instructional partnering program or curriculum team that is assisted by a supportive schedule
6. **TLM: Seek out and apply for grants or participate in a funded grant or fellowship opportunity**

ELT²: Share opportunities for teachers to apply for a grant or participate in a funded grant or fellowship

Examples of National or International Grants or Fellowships for Teachers

- <https://www.nctm.org/grants/> (*Received the Toyota TIME Grant for Project MELTT)
- <https://www.iie.org/Programs> (*Received the Fulbright Memorial Fund Fellowship to Japan)
- <https://www.toshiba.com/taf/about.jsp>
- <http://stemgrants.com/stem-grants-for-k-12-nonprofits/>
- <http://www.agintheclassroom.org/TeacherResources/Grants.html>

Examples of State or Local Grants

- Illinois Innovation Talent Pilot Grant (*Received grant for Project DESTINE.)
 - Grant previously offered by ISBE & <https://www2.illinois.gov/dceo/Pages/default.aspx>
- School Endowment (*Fire RESCUE & St. Louis Architecture: Downtown to Midtown)
 - Example/Resource for Creating a School Endowment <https://www.othsendowmentfund.us/>
- Scott AFB (*Received grants for STEM Career to Classroom Initiatives)
 - Special thanks to the Scott AFB & Dr. Cindy Doil, School Liaison Officer

Opportunities for Teachers Funded by Grants

- IMSA – www.IMSA.edu/Educator
 - Little STEAMers (Prek Teachers) – Originally funded by Boeing
 - Math at Work: Career Challenge (Middle School Teachers) – Originally funded by ISBE
 - FUSION (Middle School Teachers) – Originally funded by the Illinois Bi-Centennial Grant
 - Illinois Future Highway (7th Grade Teachers) – Originally funded by the Illinois Tollway
- ROE - <https://www.isbe.net/Pages/Illinois-Mathematics-and-Science-Partnerships-Program.aspx>
 - Math & Science Partnership Grant for 150 k-12 teachers from 13 counties
 - Check your local ROE - https://iarss.org/wp-content/uploads/2020/10/IARSS-Directory_2020_2021_web-1.pdf
- Illinois Humanities Council- <https://www.ilhumanities.org/division/grants/>
 - I participated in “How Designers Have Shaped Our Environment” at Pere Marquette IL
- National Humanities - <https://www.neh.gov/grants/professional-development>
 - I participated in “The Art & Architecture of the U.S. Capitol” in Washington DC
- Others
 - Einstein Fellowship - <https://science.osti.gov/wdts/einstein>
 - Knowles - <https://knowlesteachers.org/teaching-fellowship/teaching-fellows-program>
 - Math for America - <https://www.mathforamerica.org/fellowships>

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7. **TLM: Recognize the efforts of students, invite administrators, colleagues, and community members to your classroom, & provide opportunities for students to showcase their learning to the greater community.**

ELT²: Publicly recognize (via social media, etc.) the work being done by teacher leaders

- Recognize & showcase images of student learning through the school's social media platform
- Provide opportunities for students to showcase their learning outside of the classroom
- Highlight teacher leaders by nominating teacher leaders for various awards
 - Ex - Nominate a teacher for 1 of 8 ICTM awards: www.ictm.org/ictm-awards

8. **TLM: Read journals/newsletters & contribute as an author/co-author or review/referee.**

ELT²: Encourage teachers to share their ideas with the greater mathematics community by writing (or reviewing) an article

- Association of Supervision & Curriculum Development - ASCD (ASCD Express)
 - Write - <http://www1.ascd.org/ascd-express/themes/Write-for-ASCD-Express.aspx>
 - ✓ My example - <http://www1.ascd.org/ascd-express/vol13/1306-remijan.aspx>
 - Write for the ILASCD Quarterly Journal - <https://illinoisascd.org/resources/publications>
- Illinois Council of Teachers of Mathematics – ICTM (Illinois Mathematics Teacher Journal)
 - Write – <http://journal.ictm.org/index.php/imt/information/authors>
 - ✓ My example - <http://journal.ictm.org/index.php/imt/article/view/112>
- TODOS: Mathematics for All (Teaching for Excellence and Equity in Mathematics – TEEM)
 - Review/Write - <https://www.todos-math.org/newteemwb>
 - ✓ Examples - <https://www.todos-math.org/newteemissues>
- Benjamin Banneker Math Association – BBA (Lighthouse Almanac)
 - Write/Examples - <http://bbamath.org/index.php/lighthouse/>
- NCTM (Mathematics Teacher: Learning and Teaching PK-12)
 - Review/Referee - <https://www.nctm.org/Publications/write-review-referee/Referee-a-Manuscript/>
 - Write - <https://www.nctm.org/Write-for-MTLT/>

9. **TLM: Lead within and beyond the classroom**

ELT²: Consider formal roles for teacher leaders supported by release time or part-time schedules.

- Examples: Instructional Coach, Tech Coach, Department Chair, Grant Writer/Coordinator, ...

Thank you for attending! 😊

- ✓ Please feel free to contact me at kremijan@imsa.edu if you have questions, your school/district would like professional development, or your organization is looking for a presenter for a conference/event.
- ✓ Check out www.IMSA.edu/Educator for more information regarding outreach, services, and other Professional Development opportunities provided by IMSA – Center for Teaching & Learning.
- ✓ I would greatly appreciate your feedback via 2-minute survey: www.tinyurl.com/IMSAsurvey22