JONATHAN K. HODGE, PH.D.

Dean, School of Natural Sciences | Professor of Mathematics
St. Edward's University

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> Collaborative, human-centered academic leader, fostering excellence through empowerment

LEADERSHIP EXPERIENCE

Dean, School of Natural Sciences
St. Edward's University

📅 July 2021 – Present

👤 650+ students • 50 full-time faculty/staff • 6 academic departments + Wild Basin Creative Research Center + Institute for Interdisciplinary Science

Primary areas of focus include:

- inclusive excellence and broadening participation in STEM fields
- student success and high-impact learning initiatives
- program development
- fundraising, external partnerships, and community engagement
- professional and leadership development
- communication, climate, and conflict resolution

Chair, Department of Allied Health Sciences
College of Health Professions, Grand Valley State University

📅 August 2019 – June 2021

👤 900+ students • 15 full-time faculty • 5 programs (4 undergrad + 1 grad)

- Primary areas of focus include program development, leadership development, faculty mentoring, and department climate issues
- Coordinated departmental response to COVID-19 pandemic
- Participated in accreditation reviews and new program development

Director, School of Communications
College of Liberal Arts and Sciences, Grand Valley State University

📅 May 2017 – June 2019

👤 1000+ students • 24 full-time faculty • 5 programs (4 undergrad + 1 grad)

- Facilitated reorganization, including extensive policy development and reallocation of budget, staff, and other resources
- Successfully advocated for faculty lines, equipment, and facilities
- Hired 20 new adjunct faculty members; developed and implemented new evaluation processes for adjunct faculty

Chair, Department of Mathematics
College of Liberal Arts and Sciences, Grand Valley State University

📅 May 2013 – June 2016

👤 300+ students • 52 full-time faculty • General & K-12 certification emphases

- Initiated lecture series celebrating diversity in mathematics
- Successfully advocated for faculty lines and facilities improvements
- Updated and revised department policies; developed website to curate and organize policy documents

Responsibilities of all administrative positions listed above include: • *oversight of curriculum and student success initiatives* • *budget management and resource allocation* • *scheduling, staffing, and enrollment management* • *faculty/staff mentoring, development, and evaluation* • *student and faculty/staff concerns* • *faculty recruitment and retention* • *strategic planning and assessment* • *shared governance with department chairs, assistant chairs, program directors, committees, and task forces* • *advocacy for resources to meet strategic objectives*

FACULTY POSITIONS

Professor of Mathematics
St. Edward's University

📅 July 2021 – Present

Professor of Mathematics
Grand Valley State University

📅 August 2015 – June 2021

Associate Professor of Mathematics
Grand Valley State University

📅 August 2008 – August 2015

Visiting Associate Professor of Mathematics
Hope College

📅 August 2008 – May 2009

Assistant Professor of Mathematics
Grand Valley State University

📅 August 2002 – August 2008

EDUCATION

Ph.D., Mathematics
Western Michigan University (2002)

M.A., Negotiation, Conflict Resolution, & Peacebuilding
California State University–Dominguez Hills (2012)

M.A., Mathematics
Western Michigan University (2000)

B.S., Mathematics
Calvin College (1998)

CORE VALUES

Authenticity Collaboration Curiosity Dedication Empathy Growth Inclusion Integrity Intentionality Professionalism

ADDITIONAL LEADERSHIP POSITIONS

Co-Director, GVSU Summer Mathematics REU
Grand Valley State University

📅 March 2010 – August 2019

- NSF/NSA-funded Research Experience for Undergraduates in mathematics, ($897,104 total grant funding)
- Responsibilities included writing grant proposals, advertising and marketing, recruiting students, maintaining program website, mentoring students, and providing organizational and administrative leadership
- Developed partnerships to recruit students from underrepresented groups; implemented gender-neutral housing option
- 90 student participants (2010–2019)

Assistant Chair, Department of Mathematics
Grand Valley State University

📅 July 2009 – May 2013

- Chaired personnel committee and led task force to significantly revise departmental personnel processes
- Assisted chair with scheduling, staffing, annual merit evaluations, and other administrative duties

COMMITTEES & OTHER SERVICE ACTIVITIES

Member, University Academic Senate (UAS) / Executive Committee of the Senate (ECS)
GVSU Faculty Governance

📅 August 2015 – May 2019

- Main faculty governance body at GVSU (50 elected faculty representatives on UAS, 15 of whom are also on ECS)
- Served on ECS January 2016 – May 2017 & May 2018 – May 2019
- Served as ECS representative to College of Liberal Arts and Sciences Faculty Council from August 2018 – April 2019

Chair, University Leadership Development (U LEAD) Task Force
GVSU Faculty Governance

📅 October 2018 – April 2019

- Task force charged with studying and proposing professional development initiatives for future leaders at GVSU
- Work included reviewing relevant literature, consulting with peer institutions, and writing detailed (22 page) final report
- Recommendations led to development of Provost's Faculty Fellows program

Department Chairs Seminar Facilitator
Council of Colleges of Arts and Sciences

📅 July 2016 – December 2020

- Invited facilitator for seven national CCAS Seminars for Department Chairs
- Assisted with seminar planning; revised conflict resolution section of seminar workbook
- Led breakout sessions on problem solving, conflict resolution, faculty recruitment and retention, self-care, and the chair/dean relationship
- Led discussions of case studies pertaining to various aspects of the department chair role

Ombuds Office Research & Task Force
GVSU Division of Inclusion & Equity • **GVSU Faculty Governance**

📅 April 2011 – January 2012 • September 2013 – April 2014

- In collaboration with Division of Inclusion & Equity, investigated potential creation of GVSU ombuds office; summarized research and recommendations in 28-page white paper (2011 – 2012)
- Appointed by Executive Committee of the Senate (ECS) to Ombuds Task Force (2013)
- Task Force studied and recommended creation of both student and faculty ombuds offices
- Student ombuds office created in 2015; first employee ombuds hired in 2021

GVSU committees and task forces:

- College of Liberal Arts and Sciences Faculty Council (ex-officio; ECS liaison)   2018 – 2019
- Modern Languages and Literatures Department Chair Election Task Force (chair)   2016
- Mathematics Department Diversity Advisory Committee (chair)   2013 – 2016
- Mathematics Department Assessment Committee (chair, 2013 – 2016)   2012 – 2016
- Mathematics Department Advisory Committee (chair, 2013 – 2016)   2007 – 2008 • 2009 – 2016
- Mathematics Department Personnel Committee (chair)   2009 – 2013
- Mathematics Department Workload / Fairness / Merit Evaluation Task Force   2012 – 2013
- Mathematics Department Framework for Scholarship Task Force   2012
- Mathematics Department Personnel Policy Task Force (chair)   2012
- Faculty Grievance Committee (chair)   2012
- Mathematics Department Textbook Selection Policy Task Force (chair)   2007
- Mathematics Department Search Committee   2003 – 2004 • 2005 – 2006
- College of Liberal Arts and Sciences Science and Mathematics Curriculum Committee   2004 – 2005
- Mathematics Department Curriculum Committee (chair, 2004 – 2005)   2003 – 2006

Other committees and task forces:

- Mathematical Association of America (MAA) Euler Book Prize Committee (chair, 2020 – 2021)   2016 – Present
- Mathematics Magazine Editor Search Committee   2013
- Hope College Mathematics Department Colloquium Coordinator   2008 – 2009

PUBLICATIONS & GRANTS

📄 Peer-Reviewed Journal Articles

* indicates undergraduate student co-author

1. B. Bjorkman*, S. Gravelle*, and J.K. Hodge (2019). Cubic preferences and the character admissibility problem. *Mathematical Social Sciences* 99(1):5–17. doi: `10.1016/j.mathsocsci.2019.02.002`

2. J.K. Hodge, F. Sprague-Williams*, and J. Woelk* (2017). Rank disequilibrium in multiple-criteria evaluation schemes. *Involve: A Journal of Mathematics* 10(1):165–180. doi: `10.2140/involve.2017.10.165`

3. C. Bowman*, J.K. Hodge, and A. Yu* (2014). The potential of iterative voting to solve the separability problem in referendum elections. *Theory and Decision* 77(1):111–124. doi: `10.1007/s11238-013-9383-2`

4. L. Brown*, H. Ha*, and J.K. Hodge (2014). Single-peaked preferences over multidimensional binary alternatives. *Discrete Applied Mathematics* 166:14–25. doi: `10.1016/j.dam.2013.11.006`

5. K. Golenbiewski*, J.K. Hodge, and L. Moats* (2011). Cost-conscious voters in referendum elections. *Involve: A Journal of Mathematics* 4(2):139–105. doi: `10.2140/involve.2011.4.139`

6. J.K. Hodge (2011). The mathematics of referendum elections and separable preferences. *Mathematics Magazine* 84(4):268–277. doi: `10.4169/math.mag.84.4.268`

7. J.K. Hodge, E. Marshall*, and G. Patterson* (2010). Gerrymandering and convexity. *The College Mathematics Journal* 41(4):312–324. doi: `10.4169/074683410x510317`

8. J.K. Hodge, M. Krines*, and J. Lahr* (2009). Preseparable extensions of multidimensional preferences. *Order* 26(2):125–147. doi: `10.1007/s11083-009-9112-1`

9. J.K. Hodge and M. TerHaar* (2008). Classifying interdependence in multidimensional binary preferences. *Mathematical Social Sciences* 55(2):190–204. doi: `10.1016/j.mathsocsci.2007.07.005`

10. J.K. Hodge (2006). Permutations of separable preference orders. *Discrete Applied Mathematics* 154(10):1478–1499. doi: `10.1016/j.dam.2005.10.015`

11. J.K. Hodge (2006). The top ten things I have learned about discovery-based teaching. *PRIMUS* 16(2):154–161. doi: `10.1080/10511970608984143`

12. J.K. Hodge and P. Schwallier* (2006). How does separability affect the desirability of referendum election outcomes? *Theory and Decision* 61(3):251–276. doi: `10.1007/s11238-006-9001-7`

13. W.J. Bradley, J.K. Hodge, and D. Marc Kilgour (2005). Separable discrete preferences. *Mathematical Social Sciences* 49(3):335–353. doi: `10.1016/j.mathsocsci.2004.08.006`

📖 Books

14. J.K. Hodge and R.E. Klima (2018). *The Mathematics of Voting and Elections: A Hands-On Approach*. Second edition. American Mathematical Society, Providence.

15. J.K. Hodge, S. Schlicker, and T. Sundstrom (2013). *Abstract Algebra: An Inquiry-Based Approach*. CRC Press, Boca Raton.

16. J.K. Hodge and R.E. Klima (2005). *The Mathematics of Voting and Elections: A Hands-On Approach*. American Mathematical Society, Providence.
    - Russian edition (translated by N.A. Shikova) published in 2007 by the Moscow Center for Continuous Mathematical Education.

💬 Invited Book Reviews

17. J.K. Hodge (2011). Review of "Numbers Rule: The Vexing Mathematics of Democracy, from Plato to Present" by George Szpiro. *Notices of the American Mathematical Society* 58(1): 59–61.

18. J.K. Hodge (2009). Review of "Mathematics and Democracy: Designing Better Voting and Fair-Division Procedures" by Steven J. Brams. *The Mathematical Intelligencer* 31(3): 62–63.

💲 External Grants   Total: $904,604

19. Principal Investigator (2019). *National Security Agency* Grant No. H98230-19-1-0015 to support a Research Experience for Undergraduates (REU) program at GVSU, $70,513. Co-PI: W. Dickinson.

20. Principal Investigator (2018). *National Security Agency* Grant No. H98230-18-1-0011 to support a Research Experience for Undergraduates (REU) program at GVSU, $50,198. Co-PI: W. Dickinson.

21. Co-Principal Investigator (2017–2019). *National Science Foundation* Grant No. DMS-1659113 to support a Research Experience for Undergraduates (REU) program at GVSU, $236,942. PI: W. Dickinson.

22. Principal Investigator (2016). *National Security Agency* Grant No. H98230-16-1-0030 to support a Research Experience for Undergraduates (REU) program at GVSU, $80,968. Co-PI: W. Dickinson.

23. Co-Principal Investigator (2013–2015). *National Science Foundation* Grant No. DMS-1262342 to support a Research Experience for Undergraduates (REU) program at GVSU, $230,169. PI: W. Dickinson.

24. Co-Principal Investigator (2010–2012). *National Science Foundation* Grant No. DMS-1003993 to support a Research Experience for Undergraduates (REU) program at GVSU, $228,314. PI: W. Dickinson.

25. Principal Investigator (2004). *Educational Advancement Foundation* grant to support the development of a discovery-based textbook on the mathematics of voting and elections, $7,500.

AWARDS, HONORS, & PROFESSIONAL AFFILIATIONS

Distinguished Undergraduate Mentoring Award
Grand Valley State University, 2020

- One award per year; "recipients…have direct involvement and significant impact on undergraduate students. They show outstanding commitment, effectiveness and innovation, providing consistent mentoring of undergraduate students during the course of their careers at GVSU."

Alumni Achievement Award
Western Michigan University, 2016

- Highest alumni award bestowed by WMU departments and programs; one recipient per department per year
- Selected for "outstanding accomplishments and positive impact on community and students."

George Pólya Award
Mathematical Association of America, 2011

- National prize for expository excellence; 1–2 awards annually for articles published in the *College Mathematics Journal*
- Selected with co-authors E. Marshall and G. Patterson for article "Gerrymandering and Convexity" (vol. 41, no. 4, 2010)

Other awards & honors:

- R.L. Moore Project NExT Fellow
  Mathematical Association of America, 2003 – 2004
- All-University Graduate Research and Creative Scholars Award
  Western Michigan University, 2002
- Yousef Alavi Outstanding Doctoral Student Award
  Western Michigan University, 2002
- Charles H. Butler Teaching Excellence Award
  Western Michigan University, 2001

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Additional training / credentials:

- Ombudsman 101
  International Ombudsman Association, 2011
- General Civil Mediation Training
  40 hours, approved by Michigan State Court Administrative Office, 2010

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Professional affiliations/memberships:

- Council of Colleges of Arts & Sciences
- Mathematical Association of America
- Institute for Mathematics and Democracy
- National Alliance for Doctoral Studies in the Mathematical Sciences
- Pi Mu Epsilon

SELECTED INVITED PRESENTATIONS

1. *Democratizing Research by Researching Democracy.* Math and Politics: Numeracy at the Ballot Box (virtual conference), Institute for Mathematics and Democracy, May 2021.
2. *Before the Results are In: Using Math to Understand Voting.* Invited panelist (virtual panel), Just Peace, Manhattan College, Bronx, NY, November 2020.
3. *Dudum v. Arntz: A Case Study in the Intersection of Mathematics, Politics, and Law.* Math and Democracy Seminar, New York University Center for Data Science, New York, NY, September 2019.
4. *Graph Theoretic Models of Interdependence in Referendum Elections.* American Mathematical Society Central Sectional Meeting, Ann Arbor, MI, October 2018.
5. *The Mathematics of Redistricting: Thoughts Relevant to Michigan's Proposal 2.* Invited panelist for DEM 101 event, Grand Valley State University, Allendale, MI, October 2018.
6. *The Separability Problem in Referendum Elections: Some Recent Developments.* Alma College, Alma, MI, November 2017.
7. *Making a Living and a Life: The Irrevocable Gift of Opportunity.* Western Michigan University, Kalamazoo, MI, October 2016.
8. *Rank Disequilibrium in Multiple-Criteria Evaluation Schemes.* Calvin College, Grand Rapids, MI, September 2016.
9. *Mid-Career Faculty: Charting the Next Half of Your Career.* Invited panelist, Joint Mathematics Meetings, Seattle, WA, January 2016.
10. *Teaching Mathematics in an American University.* Polytechnic University, Arusha, Tanzania, May 2015.
11. *Inquiry, Authority, and Democracy.* Invited keynote (banquet) talk at the 15th annual Legacy of R.L. Moore Conference, Austin, TX, June 2012.
    - Video: gvsu.edu/s/02T | *MAA Focus* article: gvsu.edu/s/02V

TEACHING & RESEARCH MENTORING

Courses Taught

- Excursions in Mathematics
- College Algebra
- Trigonometry
- Probability & Statistics
- Survey of Calculus
- Calculus 1, 2, & 3
- Differential Equations
- Communicating in Mathematics / Mathematical Proofs
- Linear Algebra
- Abstract Algebra
- Euclidean Geometry
- Discrete Mathematics
- Advanced Calculus (Real Analysis)
- The Mathematics of Voting and Elections
- Theory and Practice of Conflict Resolution
- Dialogue, Integration, & Action

Undergraduate Research

- Mentored 35 students in 19 different projects (14 projects through GVSU Summer Mathematics REU)
- Eight awards won by students (16 students total) for presentations at MathFest, including six MAA Outstanding Presentation Awards and two SIAM Excellence in Undergraduate Research Awards

Doctoral Committees

- Mark Krines, University of Iowa (co-chair), 2013 – 2014
- Allan Bickle, Western Michigan University (outside reader), 2010