

# Wern Juin Gabriel Ong

wgabrielong@uni-bonn.de

## EDUCATION

- |  |  |
|--|--|
| • <b>Rheinische Friedrich-Wilhelms-Universität Bonn</b>                  | Bonn, Germany                          |
| • <i>M.S. Mathematics</i>  | <i>October 2024 - Exp. August 2026</i> |
| • <b>Bowdoin College</b>   | Brunswick, ME                          |
| • <i>B.A. Mathematics &amp; Minor in Classical Greek (Leave 2020-21)</i> | <i>August 2019 - May 2024</i>          |
| • <b>Harvard University</b>  | Cambridge, MA                          |
| • <i>Visiting Student</i>  | <i>September 2023 – December 2023</i>  |
| • <b>Columbia University in the City of New York</b>                     | New York City, NY                      |
| • <i>Visiting Student</i>  | <i>August 2020 - June 2021</i>         |
| • <b>Mont' Kiara International School</b>                                | Kuala Lumpur, Malaysia                 |
| • <i>High School Diploma &amp; IB Diploma</i>                            | <i>August 2017 - May 2019</i>          |

## EXPERIENCE

- |   |                                |
|---|--------------------------------|
| • <b>Nonlinear Algebra – Max Planck Institute for Mathematics in the Sciences</b> | Leipzig, Germany               |
| • <i>Visiting Researcher (Mentor: P. Breiding)</i>                                | <i>May 2022 - August 2022</i>  |
| • <b>The Xena Project – Imperial College London</b>                               | London, United Kingdom         |
| • <i>Independent Contributor</i>  | <i>June 2021 - August 2021</i> |
| • <b>Karanikolas Lab – Fox Chase Cancer Center &amp; Temple Medical School</b>    | Philadelphia, PA               |
| • <i>Researcher (Mentor: J. Karanikolas)</i>                                      | <i>May 2020 - June 2021</i>    |

## RESEARCH IN MATHEMATICS

As is convention in mathematics, authors are ordered alphabetically by last name.

- S. Atherton, S. Dutta, J. Lopez Garcia, J. Louwsma, Y. Luo, **W. Ong**, R. Sagarayaj “Transfers and Unstable Degrees in the  $\mathbb{A}^1$ -Brouwer Degrees Package for Macaulay2.” [arXiv]
- S. McKean, G. Muratore, **W. Ong**. “Quadratic Counts of Lines Highly Tangent to Hypersurfaces.” *Math. Nachrichten*, Vol. 298, No. 11. [arXiv][Journal]
- N. Borisov, T. Brazelton, F. Espino, T. Hagedorn, Z. Han, J. Lopez Garcia, J. Louwsma, **W. Ong**, A. Tawfeek. “ $\mathbb{A}^1$ -Brouwer Degrees in Macaulay2.” *J. Software for Algebra and Geometry*, Vol. 14, No. 1. [arXiv][Journal]
- P. Breiding, J. Lindberg, **W. Ong**, L. Sommer. “Real Circles Tangent to 3 Conics.” *Le Matematiche*, Vol. 78, No. 1. [arXiv][Journal]

## RESEARCH IN COMPUTATIONAL BIOLOGY

Authors are ordered by contribution. <sup>†</sup> Indicates equal contribution.

- G. Andrianov, **W. Ong**, I. Serebriiskii, and J. Karanikolas. “Efficient Hit-to-Lead Searching of Kinase Inhibitor Chemical Space via Computational Fragment Merging.” *J. Chemical Information and Modeling*, Vol. 61, No. 12. [Journal] [bioRxiv]
- **W. Ong**<sup>†</sup>, P. Kirubakaran<sup>†</sup>, J. Karanikolas. “How Current Neural Network Models for Kinase-Inhibitor Affinity Predictions Generalize Poorly.” [bioRxiv]

## EXPOSITORY WRITING

I am also author of the following lecture notes which have become somewhat popular.

- V5A4 - Habiro Cohomology - Summer 2025 Course by Prof. Dr. P. Scholze at the University of Bonn

## SELECTED PRESENTATIONS

---

A full list of presentations is available at [wgabrielong.github.io/talks](https://wgabrielong.github.io/talks).

- “Arithmetic Counts of Highly Tangent Lines” Macaulay2 Workshop, Madison, Wisconsin, July 2025
- “The Arc Topology” ARGOS Seminar on ‘Berkovich Motives’ and ‘Geometrization of Local Langlands, Motivically’, Bonn, Germany, Winter 24/25
- “ $\mathbb{A}^1$ -Brouwer Degrees in Macaulay2” Effective Methods in Algebraic Geometry (MEGA), Leipzig, Germany, July 2024

## SELECTED AWARDS AND HONORS

---

- **E. S. Hammond Mathematics Prize (2024):** Completion of the mathematics major with distinction.
- **Sarah and James Bowdoin Scholar (2022):** (Dean’s List) For exceptional overall academic performance.
- **Smyth Mathematics Prize (2022):** For most exceptional performance in mathematics coursework in the first two years of study.
- **100 $\pi - \varepsilon$  Prize (2020):** For extraordinary inspiration and joy for the pursuit of mathematics.

## SERVICE TO THE PROFESSION

---

- **Twoples (2025-Present)** Mentor to students from underrepresented groups, non-traditional backgrounds, and/or non-research oriented institutions in semester-long mathematical reading projects.
- **Kleine AT: Even Filtration via Spectral Sequences (2025)** Co-founder of conference series and co-organizer of inaugural edition at MPIM Bonn with T. Barthel and D. Bowman.
- **Macaulay2 Workshop at U. Wisconsin - Madison (2025)** Project co-leader with S. Pauli on unstable  $\mathbb{A}^1$ -Brouwer degrees.
- **Bowdoin Science Experience (Fall 2021 & 2022):** Organized an orientation trip introducing students historically underrepresented in the sciences to the Bowdoin science departments and other academic support services.
- **Mathematics Department Tenure-Track Faculty Search (Spring 2020 & 2024):** Assisted in small-group student interviews for the tenure-track faculty searches.
- **Mathematics Department Visiting Faculty Search (Summer 2020 & 2023):** Assisted in small-group student interviews for the visiting assistant professor searches.
- **Bowdoin College Alumni Interviewer (2024, 2025)** Conduct evaluative interviews of prospective applicants to Bowdoin College.

## SKILLS

---

- **Programming:** Python (TensorFlow, SKLearn, Pandas, NumPy); Julia; Wolfram Mathematica; Lean
- **Computational Skills:** Google Suite, Microsoft Office, L<sup>A</sup>T<sub>E</sub>X
- **Languages:** English (Native), Classical Greek (Scholarly), Spanish (Working), Mandarin (Spoken), Malay (Spoken)
- **Certificates and Training:** WMA Wilderness First Responder, PADI Master SCUBA Diver