

This record is presented in recognition of contributions to Eterna, the internet-scale molecular design platform.  
Verify authenticity of this record at: <https://eternagame.org/certificate/35741>

**ISSUED****December 20, 2025****PLAYER DETAILS**

|                            |               |
|----------------------------|---------------|
| PERSONAL NAME              | Max Goff      |
| PLAYER NAME                | Max Goff      |
| REGISTRATION DATE          | January 2012  |
| GLOBAL RANK                | 55 of 424,365 |
| PUZZLES CLEARED            | 5,452         |
| PUZZLES CREATED            | 188           |
| TUTORIALS CLEARED          | 3/5           |
| ADVANCED TUTORIALS CLEARED | 10/10         |

Eterna puzzles are created by the Eterna team or players. They invite players to devise effective procedures for pairing nucleotides in hypothetical or biologically-inspired RNA strands.

Learn more on Max Goff's player profile: <https://eternagame.org/players/35741>

## PUBLICATION CONTRIBUTIONS

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*Contributions towards pre-print or peer-reviewed scientific publications.*

### 1. EVIDENCE OF AN UNUSUAL POLY(A) RNA SIGNATURE DETECTED BY HIGH-THROUGHPUT CHEMICAL MAPPING

May 2020 [Biochemistry](#) *Gameplay Contributor*

### 2. PRINCIPLES FOR PREDICTING RNA SECONDARY STRUCTURE DESIGN DIFFICULTY

February 2016 [Journal of Molecular Biology](#) *Gameplay Contributor*

### 3. RNA DESIGN RULES FROM A MASSIVE OPEN LABORATORY

February 2014 [Proceedings of the National Academy of Sciences](#) *Gameplay Contributor*

### 4. ETERNABRAIN: AUTOMATED RNA DESIGN THROUGH MOVE SETS FROM AN INTERNET-SCALE RNA VIDEOGAME

June 2019 [PLOS Computational Biology](#) *Gameplay Contributor*

### 5. RNA SECONDARY STRUCTURE PACKAGES EVALUATED AND IMPROVED BY HIGH-THROUGHPUT EXPERIMENTS

October 2022 [Nature Methods](#) *Gameplay Contributor*

### 6. SENTRNA: IMPROVING COMPUTATIONAL RNA DESIGN BY INCORPORATING A PRIOR OF HUMAN DESIGN STRATEGIES

March 2018 [Preprint](#) *Gameplay Contributor*

### 7. THEORETICAL BASIS FOR STABILIZING MESSENGER RNA THROUGH SECONDARY STRUCTURE DESIGN

September 2021 *Research Gameplay Contributor*

## 8. CROWDSOURCED RNA DESIGN DISCOVERS DIVERSE, REVERSIBLE, EFFICIENT, SELF-CONTAINED MOLECULAR SENSORS

April 2022 *Proceedings of the National Academy of Sciences Gameplay Contributor*

## 9. COMBINATORIAL OPTIMIZATION OF MRNA STRUCTURE, STABILITY, AND TRANSLATION FOR RNA-BASED THERAPEUTICS

March 2022 *Nature Communications Gameplay Contributor*

## 10. DEEP LEARNING MODELS FOR PREDICTING RNA DEGRADATION VIA DUAL CROWDSOURCING

December 2022 *Nature Machine Intelligence Gameplay Contributor*

## 11. COMMUNITY SCIENCE DESIGNED RIBOSOMES WITH BENEFICIAL PHENOTYPES

February 2023 *Nature Communications Gameplay Contributor*

## 12. OPENASO: RNA RESCUE — DESIGNING SPLICE-MODULATING ANTISENSE OLIGONUCLEOTIDES THROUGH COMMUNITY SCIENCE

July 2025 *RNA Gameplay Contributor*

## DESIGN SUBMISSIONS

*Contributions towards Eterna biomedical challenges experimentally tested through in-vitro synthesis and structure mapping measurements.*

|              | TOTAL (#) | TESTED | BEST (%) |
|--------------|-----------|--------|----------|
| FMN aptamers | 4         | 0      | 91       |

|                                                                                    |       |    |    |
|------------------------------------------------------------------------------------|-------|----|----|
| First Player Project                                                               | 17    | 16 | 90 |
| Repeatability - Multibranch Loop Protection                                        | 3     | 1  | 51 |
| The Revolutionary                                                                  | 5     | 4  | 74 |
| Kissing Loop Lab - Round 2                                                         | 3     | 3  | 84 |
| FMN Riboswitch Targets: FMNsanity                                                  | 17    | 5  | 97 |
| MS2 Riboswitches On Chip - Round 2                                                 | 1     | 1  | 60 |
| Next Generation Riboswitches On Chip                                               | 3     | 3  | 46 |
| FMN/MS2 Riboswitch Structure: the Paper                                            | 1     | 1  | 60 |
| Small Loop Next Generation Riboswitches                                            | 1     | 1  | 60 |
| Logic Gates                                                                        | 5     | 5  | 56 |
| OpenTB - Getting started                                                           | 2     | 2  | 72 |
| OpenTB - Getting started Round 3                                                   | 2     | 2  | 72 |
| OpenTB - Getting started Round 4                                                   | 60    | 0  | -  |
| OpenTB Round 4                                                                     | 690   | 0  | -  |
| Single-input Switches (Round 2)                                                    | 500   | 0  | -  |
| 'Light-up' Switches (Round 1)                                                      | 1,200 | 0  | -  |
| Directed Evolution vs. Rational Design (ATP Light-Up Switches)                     | 55    | 0  | -  |
| OpenRibosome Pilot Challenge                                                       | 5     | 0  | 50 |
| Testing Lab mgotrik                                                                | 3     | 0  | -  |
| OpenRibosome Pilot Challenge Warm-up                                               | 23    | 0  | -  |
| OpenVaccine: "Roll Your Own Structure", RNA backbone stability in aqueous solution | 60    | 60 | 93 |
| OpenVaccine: [Round 3-extended] Lightning Round Design + Vote of Nanoluciferase    | 20    | 0  | 55 |
| OpenRibosome Challenge Round 2                                                     | 8     | 0  | 40 |
| OpenRibosome Challenge Round 3                                                     | 15    | 0  | -  |
| OpenVaccine: "Roll Your Own Structure" Round 2                                     | 7     | 7  | 84 |
| OpenVaccine: [Round 5] mRNA designs (Sandbox for RYOS Round 2)                     | 16    | 0  | -  |

|                                                 |    |    |     |
|-------------------------------------------------|----|----|-----|
| OpenRibosome Challenge Round 4                  | 4  | 0  | -   |
| OpenVaccine - Covid-19 Delta Variant Spike mRNA | 1  | 0  | -   |
| OpenVaccine: Nanoluciferase revisited           | 4  | 0  | -   |
| OpenVaccine Omicron                             | 7  | 0  | -   |
| T-box Switch Pilot                              | 20 | 0  | 31  |
| T-box Switch Round 1                            | 20 | 0  | -   |
| OpenASO: RNA Rescue Round 1                     | 18 | 0  | 100 |
| OpenKnot Round 1                                | 22 | 22 | 54  |
| OpenKnot Round 3                                | 20 | 0  | -   |
| Train the neural net: T-loop pilot              | 20 | 0  | -   |

TOTAL (#): The total number of design submissions made to an Eterna challenge.

TESTED: The total number of design submissions made to an Eterna challenge that were experimentally tested.

BEST (%): Player's best score (as a percentage) for experimentally tested design submissions made to an Eterna challenge

