Welcome

PRESS START

WPI Interactive Media and Game Development
Welcome

Dr. Jennifer deWinter
Director, IMGD Program
jdewinter@wpi.edu

WPI Interactive Media and Game Development

Agenda

Demos of student work
Faculty, Philosophy & Curriculum
Employment outlook
Alumni profiles

WPI Interactive Media and Game Development
Student Projects

Interactive Media and Game Development

PENUMBRA
Games
Welcome!
Meet the team

Kaamil Lokhandwala
Brittany Henriques
Charlie Baldwin
Tori Buyck
Matt Johannesen
Ben Dorr
Janelle Knight
Charlie Kittler

Team projects

- Central to the WPI Plan
  - IQP and MQP
- Many course assignments are team-based too!
  - Helped us prepare for bigger projects later
- Teamwork is critical in the game industry
  - Especially among people from different disciplines
Extracurricular support

- **4+ game jams per year**
  - Learned to prototype and get organized quickly
  - Great time to experiment!

- **Easy access to resources**
  - Computers, VR equipment, 3D printers and more

- **Professors with strong industry experience**
  - Helping with pitches, portfolios, internships, etc.

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Cutthroat Game Jam: *Campfire Kitchen*
Hi!
We’re Sunburst Studio!

Thank you!
Who are we?

Professional unprofessionals.

Sliptime Sleuth
About IMGD

One of the world’s oldest degree programs in interactive media and game development

1,300+ graduates since 2006

Faculty

21 Faculty

80+ Courses

WPI Interactive Media and Game Development
Faculty Expertise

**Technical Development:** Engine architecture, networking, procedurally-generated content, game AI, virtual/augmented reality, data analytics/visualization

**2D Art/Animation:** Digital painting, graphic design, concept illustration and storyboarding, traditional and digital animation, studio techniques/practices

**3D Art/Animation:** Digital sculpting, polymodeling, texturing/mapping, lighting, rendering

**Technical Art:** Rigging, mesh optimization, motion capture, pipeline management

**Design:** Tabletop and digital prototyping, game engine scripting, iterative playtesting, instrumentation and metrics, documentation

**Writing:** Nonlinear and interactive narrative, character development, scriptwriting, alternate reality games (ARGs), escape rooms

**Music/Audio:** Traditional and digital music recording, synthesis, sound effects and Foley, editing, mixing, robotic and live-coding performance

**Game Studies:** Philosophy, ethics, history and future trends

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**Philosophy: Hybrid Thinkers!**

*All* IMGD students gain **hands-on, team-oriented, project-based** experience in **every aspect** of the interactive media and game development process.

*Everyone* takes courses in programming, design, content creation (art, animation, writing, audio), testing and management.
MassDIGI College

Interactive Media and Game Development

Curriculum

There are two IMGD majors!

IMGD Technology
(Bachelor of Science)

IMGD
(Bachelor of Arts)

Interactive Media and Game Development
IMGD Technology
(Bachelor of Science)

Technical Game Development

IMGD 3000: Students build a text-based game engine from scratch in C++, and then use it to create a game.
Game Engine Architecture Blocks

Technical Game Development: AI
Technical Game Development: AI Navigation

Path Smoothing

Navmesh

Forced-based Steering

Pathfinding

There is no obstacle obstructing the path from A to C so the two edges can be replaced with one.

With an obstacle in the way both edges are necessary.

Technical Game Development: Networking

Client-Server Networking

User Input

Render Input

Message: User Input

Message: Ok User Input

Process and Validate Input

Latency Compensation

Unit Owner

Actual Path

Opponent

Predicted Path

send initial position

send update

send update

send update

send update
Technical Game Development: Physics & Cameras

Collision Detection

Physics Engines

Projectile Launch Position
Target Position
Closed-Form
Explicit Euler

Horizontal Position (m)
Vertical Position (m)

Technical Game Development: Summary

“Physics, Networking, AI…. Tip of the Iceberg!”

Networking

Artificial Intelligence

Physics
Computational Craft Development

Interactive Media and Game Development

IMGD (BA) Writing Concentration

Interactive Media and Game Development
Dual Majors with Computer Science

Computer Science at WPI, like IMGD, is a top ranked school in the nation (#2 this year)

IMGD
(Bachelor of Arts)

Interactive Media and Game Development
Technical Art - Rigging and Optimization

http://imgd.wpi.edu/

Animation
The creative process and steps

- Idea
- Script
- Storyboard/Thumbnails
- Animatic
- Animation
- Post

http://imgd.wpi.edu/
2D Animation
Learning how to apply the 12 animation principles

http://imgd.wpi.edu/

3D Animation
Applying the animation principles and knowledge of basic cinematography to create compelling, character-driven animations

Differentiating between 3D animation for film vs. 3D animation for games

http://imgd.wpi.edu/
Student work samples

Janelle Knight
Charlie Baldwin
Davina Dawson
Karen Hou
Patrick Luck

Concept + Model = Life : Make your creations breathe!
First-year students after one art course ...

Creating functional art for games, films, medical and more.
Modeling, rigging, animation … and imagination.

WPI was a good choice for this because of its seamless integration of both the arts and technology into their classes.

- Patrick Luck

3D Modeling in IMGD

From a current student and SA
From concept to completion

The choice is yours!
Nothing is out of reach!

We create **technically sound** artists.
IMGD
(Bachelor of Arts)

WPI Interactive Media and Game Development

IMGD (BA) Writing Concentration

WPI Interactive Media and Game Development
IMGD (BA) Writing Concentration

WPI Interactive Media and Game Development

IMGD (BA) Music Concentration

WPI Interactive Media and Game Development
Curriculum at a Glance

WPI Interactive Media and Game Development
Advanced courses
IMGD Design/Writing (BA)

Curriculum

Other IMGD opportunities
- Worcester Center for Crafts
- IMGD Lecture/Celebrity Series
- Master classes with industry professionals
- IMGD Minor available (+6 courses)
- IMGD MS program with 5-year BS/MS option
- Worcester developer community
- PAX East, Boston Metro game dev community
IMGD Student Clubs

- IGDA: Make games!
- GDC: Play games
- eSports: Play Games, but different
- Diversity in Games: Where inclusivity reigns supreme

IMGD Labs

- VR
- AR
- Green Screen
- 3D Scanning
- 3D Printing
- Audio Recording Room
- Wacom Screen
- Giant Screen in Foise
- MORE!
Games are International

WPI Interactive Media and Game Development

International Opportunities

- Japan
- Sweden (co-convened)
- Australia
- New Zealand
University of Skövde, Sweden

Employment outlook

2017-18 Entertainment Game Industry Entry-level salaries (0-3 years experience)

• Engineer/Programmer: $72,000
• Artist/Animator: $55,000
• Designer: $55,000

Varies by skillset and location

Source: http://www.gameindustrycareerguide.com

Interactive Media and Game Development
Professional Support

- Career Development Center: only school to be top ranked for:
  - Best career services
  - Best career placement
  - Best school internships
- One of the best retention rates in the country (95%)
- MassDigi, Showcasing, Alumni network, etc.

Alumni employment

Tracking ~60% of IMGD alumni (2016)

- 45% entertainment game industry
  - Riot, Hasbro, Activision/Blizzard, Harmonix, Boss Key, Starbreeze
- 25% technology/engineering
  - Raytheon, AMD, MIT Lincoln Lab, Mitre, Nuance
- 5% interactive media/web development
  - Push Group, Bose, Applied Interactive, Creat Studios
- 5% graduate school
  - WPI, SMU Guildhall, USC Gamepipe
- 20% other
Alumni employment

WPI Interactive Media and Game Development

Kedong Ma ’16
Sean Halloran ’16
Mary Yovina ’11

WPI Interactive Media and Game Development
Alumni employment

Robert McKenna ’15

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Dan “Driggsy” Driggs ’16
https://beam.pro/driggsy

WPI Interactive Media and Game Development
Alumni employment

Max Perlman ‘16
MIT Lincoln Laboratory

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Alumni employment

Evan Polekoff ‘16
Blizzard Entertainment

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Alumni employment

Michel Sabbagh ‘17

Bethesda Softworks
a ZeniMax Media company

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Alumni employment

Adam Pastorello ’11
Riley Brown ’11

RISEN GAMES

WPI Interactive Media and Game Development

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Alumni employment

Interactive Media and Game Development

Alumni Game Credits (Sample)

123 Kick It!
Aaaaaculus!
AC/DC: Rock Band
Aliens: Colonial Marines
Bad Apple: Battle Harvest
Ball Buster Blast
Beatpop
BioShock: Infinite
Call of Duty: World at War
CastleVille Legends
Catastrophic Damage
Chroma
Cosmic Adventures
Dance Central
DDO: Menace of the Underdark
Dream Zoo
Drunken Robot Pornography
Dungeons & Dragons Online
D&D: Shadowfall Conspiracy
Dyscourse
Elegy for a Dead World
Elemites
Fantasia: Music Evolved
FarmVille 2: Country Escape
Fieldrunners 1 & 2
Go Home Donosaurs!
Grail to the Thief
Green Day: Rock Band
Heroes of Dragon Age
Infinite Crisis
Jack Lumber
Lego Rock Band
Lord of the Rings Online
LoTR: Helm’s Deep
LoTR: Riders of Rohan
Marvel Puzzle Quest: Dark Reign
Mathbreakers 3D World
NBA Math Hoops
Nigeria Small-Scale Exports
Nightshade Academy
Pandora: Purge of Pride
Pinballistik
Power Gig
Power Gig: Rise of the Six String
Quake Area Arcade
Ricochet HD
Rock Band 2 & 3
Rock Band: Country Pack 1 & 2
Rock Band: Metal Track
Rock Band: Music Store
Second Life
Shoot Many Robots
Smuggle/Smuggle Truck
Stem Stumper
The Beatles: Rock Band
Tinkerbox
Updraft Jack
US Healthcare Simulation
Wolfenstein
Yoshi’s Epic Yarn
Thank you for coming!

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