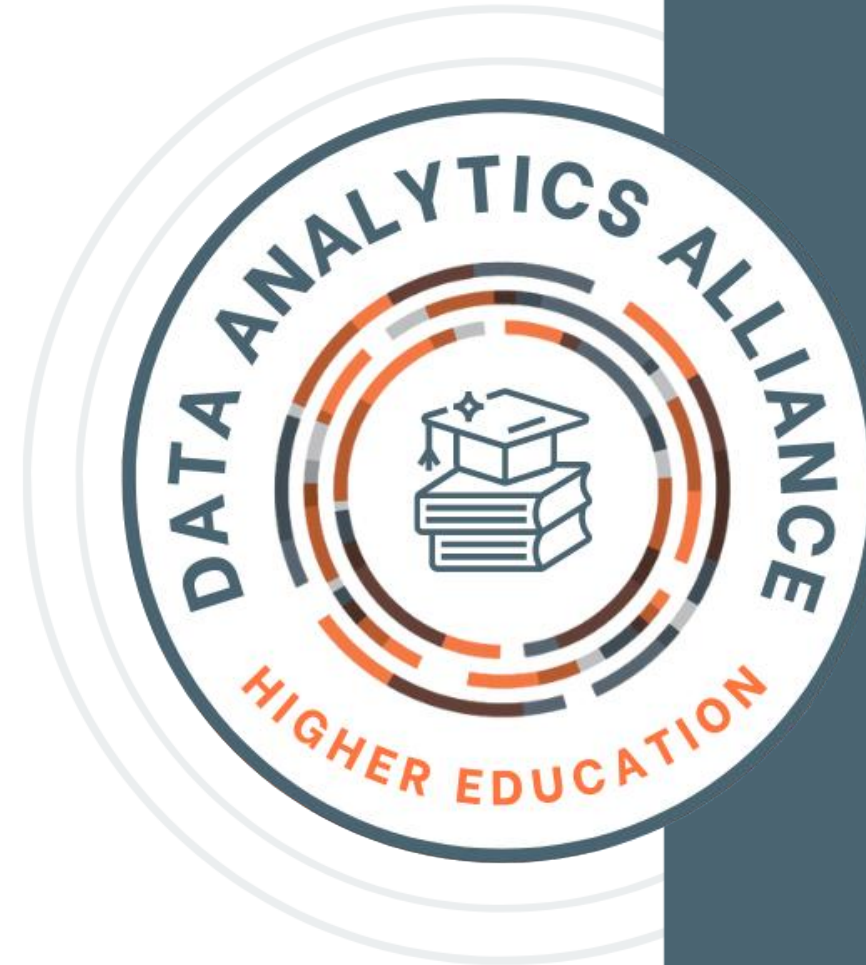


Data Analytics Alliance for Higher Education

Q2 Meeting – April 22, 2026





Meeting Agenda

- ▶ DAAHE Welcome & Overview
- ▶ Guest Speaker – **Brent Drake, PhD**, *Senior Vice President for Operations & Research* at the Gardner Institute, and *Chair* of the Board of Directors for the Association of Institutional Research
- ▶ Announcements



DAAHE Purpose



The DAAHE is a national community of higher education professional developed for the purpose of being a catalyst and resource for Higher Education organizations that are interested in using and understanding Data Analytics to solve higher education issues.

The Basics



Peer-to-peer networking and sharing of Data Analytics best practices



Collegial discussion of Data Analytics business and technology challenges



Joint initiatives to address significant Data Analytics business and technology issues

Meeting Format



Meeting frequency:
Quarterly



Survey/discussions
between meetings

► Topic Selection

- Group suggestion
- Presented by members
- Online collaboration

► Focus on one topic per meeting

- Topic
- Networking





Important Disclaimers



As a special interest group, the Data Analytics Alliance for Higher Education (DAAHE), as well as its members and participants in DAAHE meetings, must be constantly vigilant of federal and state antitrust laws, which prohibit monopolization, combinations and conspiracies in restraint of trade, collusive action, and unfair methods of competition.

To avoid the most sensitive areas, the following matters should never be discussed:

- Price, student or any elements of price or tuition policies, including costs, discounts, and similar matters
- Sensitive information – Employee or student
- Commercial liabilities, warranties, guarantees, or the terms and conditions of sales, including
- Anything dealing with “arm twisting,” trade abuses, or excluding or controlling competition.

As a DAAHE representative, my job is to prevent such conversations from occurring at this meeting. Please understand that if I suggest that a subject should not be discussed at this meeting, I will do so to ensure that our association meeting remains both risk-free and extremely productive.

Additionally, we seek active member participation, not participation by AI assistants.



Let's start the program

The Use of Generative AI
in Institutional Research
and Effectiveness

with

Brent Drake, PhD
from the Gardner Institute





The Use of Generative AI in Institutional Research and Effectiveness

Brent Drake, Senior Vice President for
Operations & Research
Chair Association of Institutional
Research 2024-2026



**GARDNER
INSTITUTE**

Agenda

History and Current State of AI Use

Practical Considerations

Current Examples of Generative AI Use

Questions

History and Current State of AI Use in IR/IE

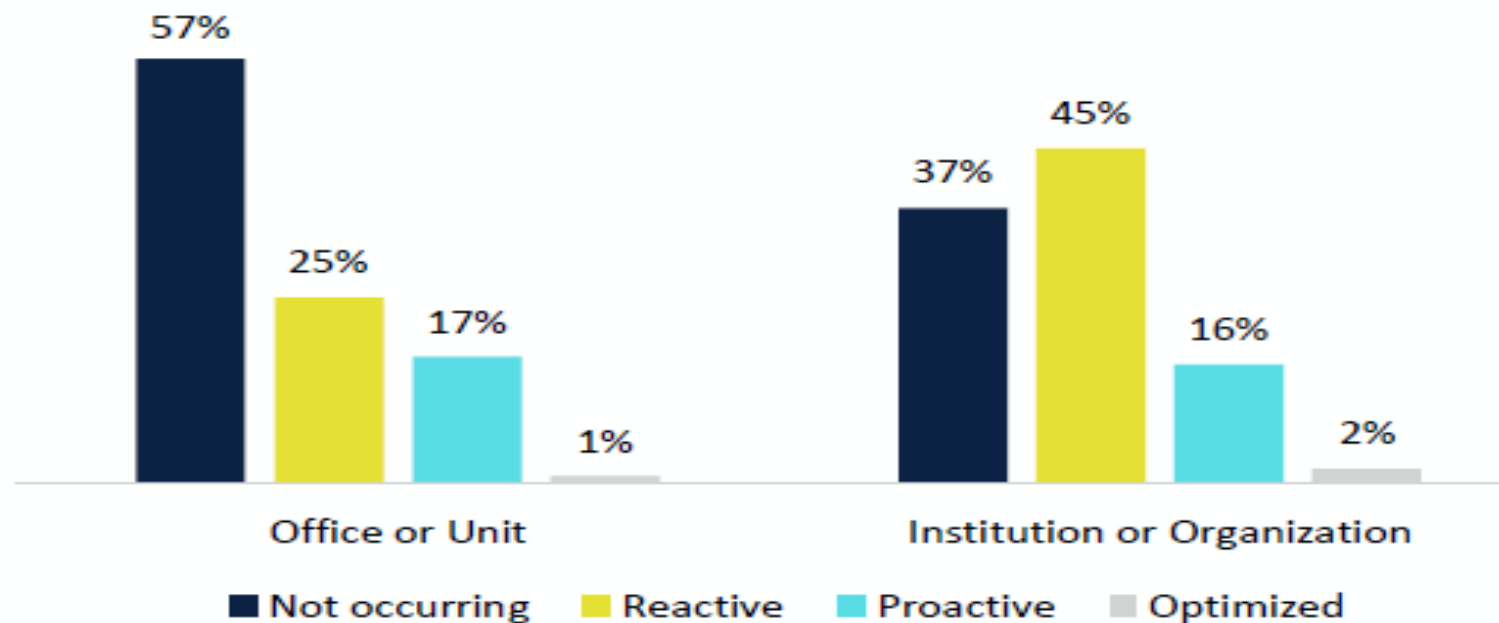
Early AI and ML

- Early iterations of AI in particular Machine Learning (ML) was a well know tool within Institutional Research
- Launch of public OpenAI Chat Generative Pre-trained Transformer (ChatGPT) 2022
- Public environment now has multiple generative tools
 - Plugin enhancements to ChatGPT
 - Generative Art Tools
 - Multimodal Large Language Models (MLLM)
 - Autonomous AI-agents

Urmeneta, 2023 Reflections on AI Transformation

AIR Survey on Generative AI

Chart 1. Degree of Generative AI Maturity



AIR, 2023 Use of Generative AI Survey

AIR Survey on Generative AI

Chart 2. Using Generative AI Can Improve the Efficiency of an Office

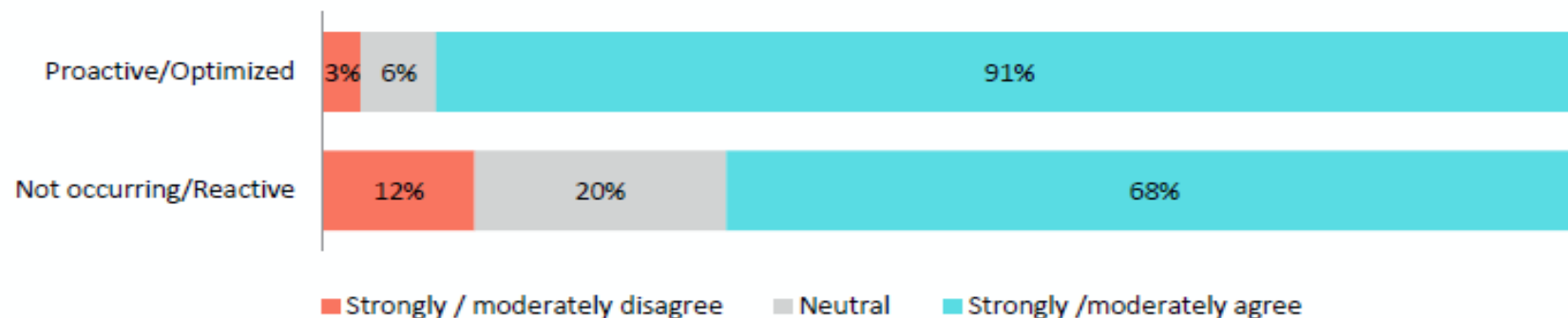
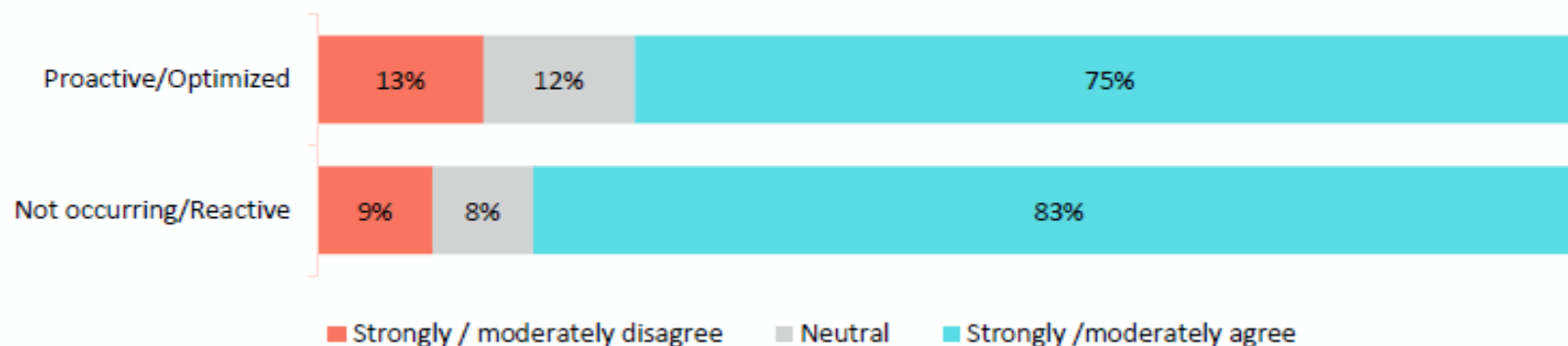


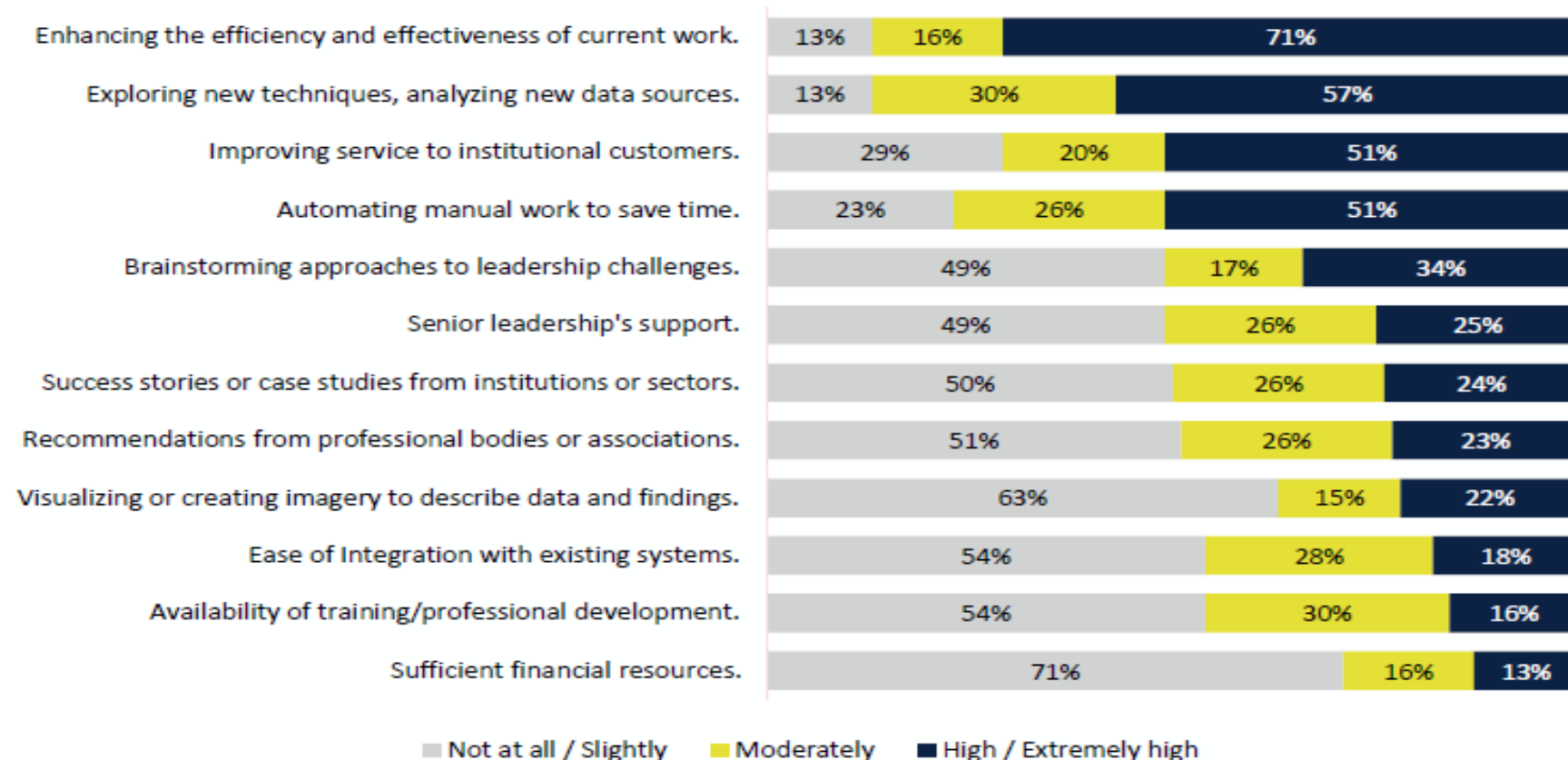
Chart 3. Using Generative AI Will Require Significant Professional Development



AIR, 2023 Use of Generative AI Survey

AIR Survey on Generative AI

Chart 5. Degree that Items are Reasons Why IR/IE Offices Use Generative AI



AIR, 2023 Use of Generative AI Survey

AIR Survey on Generative AI

Table 1. Generative AI Solutions

Solution	% of Total
Chat GPT	73%
Bing Chat	5%
Claude	5%
Bard	5%
Canvs AI	2%
Dall-E	2%
Tableau GPT	2%
AdAstra	2%
Miscellaneous	4%

Table 2. Generative AI Tasks

Task	% of Total
Development of content (e.g., code, emails, reports, summaries, templates)	59%
Summarizing information (e.g., open-text questions, quantitative data, articles)	20%
Researching information	6%
Brainstorming/ideation	6%
Image generation/graphic design	4%
Miscellaneous	5%

AIR, 2023 Use of Generative AI Survey

Practical Considerations

Ethics

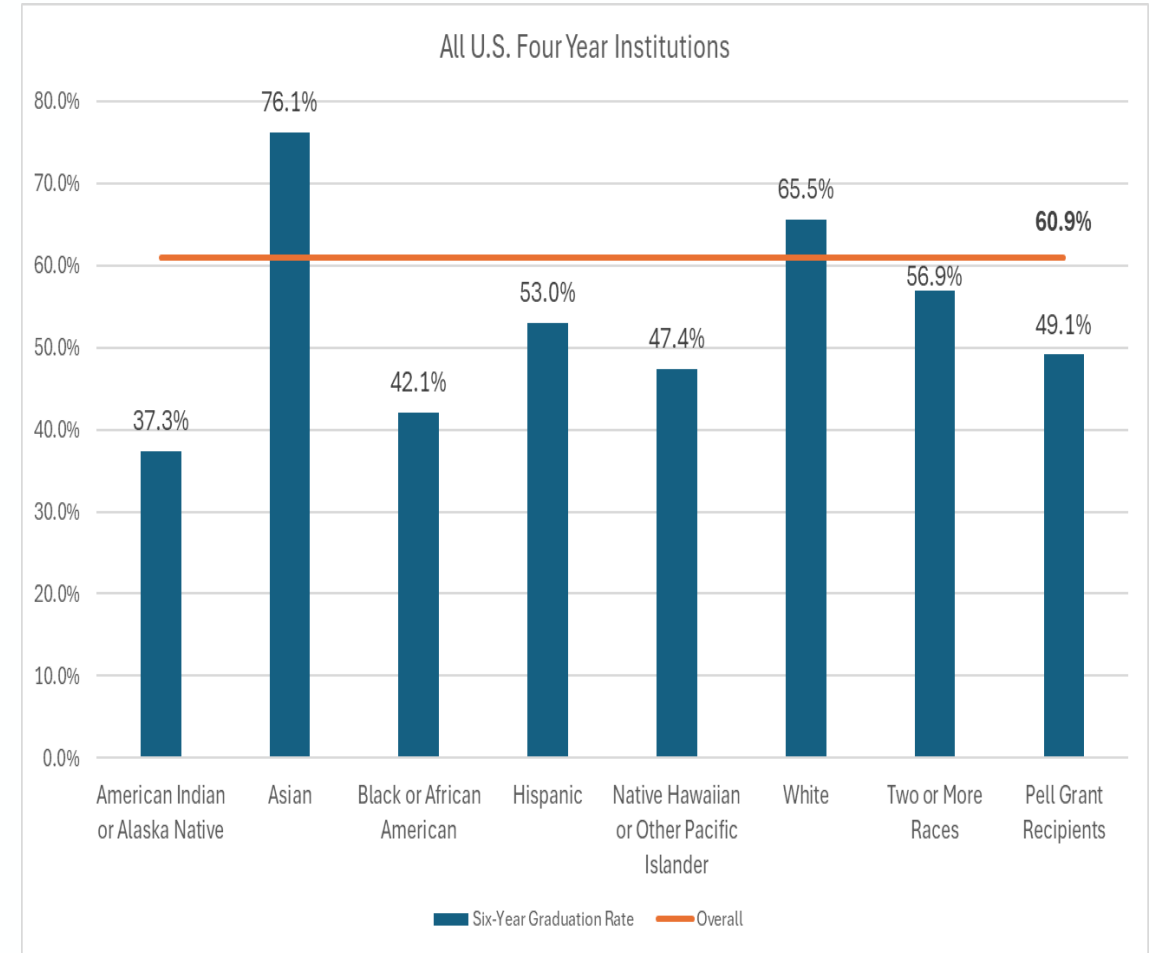
Governance

Privacy and IP

Human in the Loop

Ethics

- **Inherent Bias** – biases in underlying data are magnified
- **Hallucinations** – tools still make guesses



Governance

- What tools is your organization comfortable with using
- Who can access the tools
- Create an accountability chain

Privacy and I.P.

- Most tools presently being used are public sourced
 - Utilize data minimization
 - Must protect user data and PII
- Protect your institutional Intellectual Property
 - Necessitate private network RAG models

Human in the Loop

“another critical aspect that limits the use of AI in IR is the lack of inherent understanding of the cultural and socio-political contexts from which the data originates...resulting in outputs that overlook or misinterpret critical subtleties, particularly on how algorithms tend to embed values and social practices from where such algorithms are conceived” (Avila et. al. 2025, Sailing through the Challenges of AI in IR)

Some Current Examples

Coalition of OH, GA, KY Institutions



Our Solution: AI-Powered Analytics Dashboard

01

Natural Language Queries

Simply ask questions in plain English—no technical expertise required to extract powerful insights from complex datasets.

02

Instant Visualizations

AI generates charts, graphs, and dashboards on-demand, customized to your specific question and institutional context.

03

Predictive Models

Built-in forecasting analyzes historical patterns to predict retention rates, readiness gaps, and intervention opportunities.

04

Export & Share

Download insights with metric explanations to share with stakeholders and decision-makers.

Student Success Dashboard

Export Report SQL Query Interface

Overall Retention Rate ⓘ

51.5%

32,800 total students

Avg Predicted Retention ⓘ

51.5%

ML model prediction

Students at High/Critical Risk ⓘ

8,831

Require immediate intervention

Avg Course Completion ⓘ

82.3%

Credits earned / attempted

Risk Alert Distribution ⓘ

32,800 total students

Risk Level	Count	Percentage
URGENT	487	1.5%
HIGH	8,344	25.4%
MODERATE	19,823	60.4%
LOW	4,146	12.6%

Retention Risk Funnel ⓘ

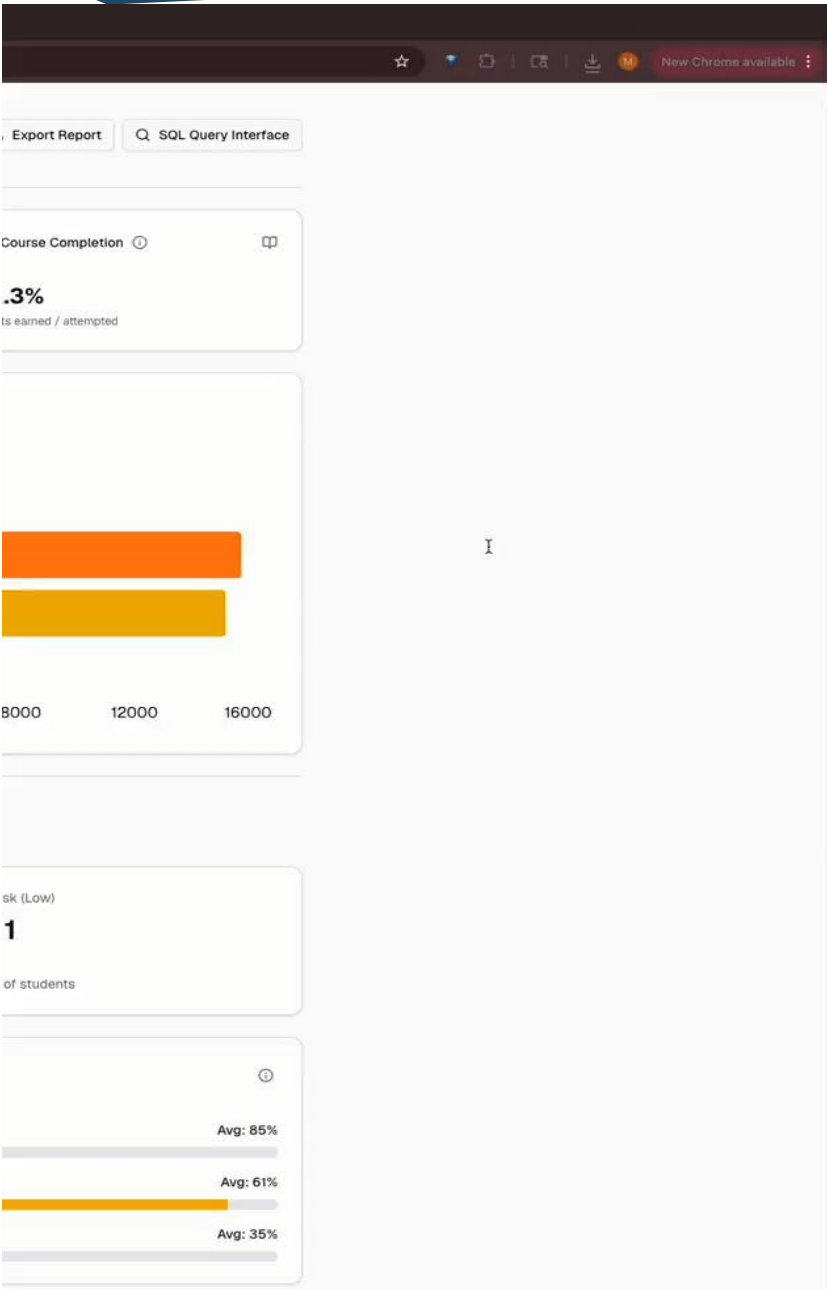
32,800 total students

Risk Level	Count (approx)
Critical Risk	100
High Risk	15,000
Moderate Risk	14,500
Low Risk	1,500

Student Readiness Assessment

AI-powered analysis identifying student preparation levels and intervention needs

Total Assessed	Average Score	High Readiness	At Risk (Low)
----------------	---------------	----------------	---------------



AgentsEditor

CODEBENDERS-DATATHON

__pycache__

ai_model

codebenders-dashboard

data

database_dumps

dump-Kentucky_Comm...

operations

supabase

venv

.docker.env.example

.env

.gitignore

AI_Powered_Student_Success...

create_issues.py

create_issues.sh

DASHBOARD_VISUALIZATION...

DATA_DICTIONARY.md

DOCKER_SETUP.md

docker-compose.yml

DOCUMENTATION_ISSUE...

env.example

ETL_SUMMARY.md

FIX_TABLES_GUIDE.md

hackathon_github_issues.md

ktcs_student_level_with_pred...

ML_MODELS_GUIDE.md

ML_PIPELINE_REPORT.txt

QUICKSTART.md

READINESS_ASSESSMENT_IN...

README.md

requirements.txt

AI_Powered_Student_Success_PRO.md

segment the data by students who are 25

Untitled-1

student-success-dashboard (2).json

student-success-report (2).md

.env

dump-Kentucky...

Users > william-meroxa > Downloads > student-success-report (2).md > Student Success Dashboard Report

1 Student Success Dashboard Report

2

3 **Generated:** 11/7/2025, 10:26:43 AM

4 **Institution:** KCTCS

5 **Data Source:** student_predictions table (32,800 students)

6

7

8

9 ## Executive Summary

10

11

12 ### Key Performance Indicators

13 | Metric | Value |

14 |-----|-----|

15 | Overall Retention Rate | 51.5% |

16 | Avg Predicted Retention | 51.5% |

17 | Students at High/Critical Risk | 8,831 |

18 | Avg Course Completion | 82.3% |

19 | Total Students Analyzed | 32,800 |

20

21 ## Risk Alert Distribution

22

23 Students flagged for intervention based on composite risk scoring:

24

25 | Alert Level | Count | Percentage |

26 |-----|-----|-----|

27 | **URGENT** | 487 | 1.5% |

28 | **HIGH** | 8,344 | 25.4% |

29 | **MODERATE** | 19,823 | 60.4% |

30 | **LOW** | 4,146 | 12.6% |

31

32 ### At-Risk Calculation

33

34 Students are flagged as at-risk if they meet ANY of these conditions:

35 - Retention = 0 (not retained)

36 - Persistence = 0 (did not persist term-to-term)

37 - GPA < 2.0

38 - Course Completion Rate < 60%

39

40 ## Retention Risk Categories

41

42 Distribution based on ML-predicted retention probability:

43

44 | Risk Category | Count | Percentage |

45 |-----|-----|-----|

46 | **Critical Risk** | 242 | 0.7% |

47 | **High Risk** | 15,755 | 48.0% |

48 | **Moderate Risk** | 15,202 | 46.3% |

49 | **Low Risk** | 1,601 | 4.9% |

50

51 ## Predictive Models

52

53

54

55

56

57

58

59

60

61

62

63

64

65

66

67

68

69

70

71

72

73

74

75

76

77

78

79

80

81

82

83

84

85

86

87

88

89

90

91

92

93

94

95

96

97

98

99

100

101

102

103

104

105

106

107

108

109

110

111

112

113

114

115

116

117

118

119

120

121

122

123

124

125

126

127

128

129

130

131

132

133

134

135

136

137

138

139

140

141

142

143

144

145

146

147

148

149

150

151

152

153

154

155

156

157

158

159

160

161

162

163

164

165

166

167

168

169

170

171

172

173

174

175

176

177

178

179

180

181

182

183

184

185

186

187

188

189

190

191

192

193

194

195

196

197

198

199

200

201

202

203

204

205

206

207

208

209

210

211

212

213

214

215

216

217

218

219

220

221

222

223

224

225

226

227

228

229

230

231

232

233

234

235

236

237

238

239

240

241

242

243

244

245

246

247

248

249

250

251

252

253

254

255

256

257

258

259

260

261

262

263

264

265

266

267

268

269

270

271

272

273

274

275

276

277

278

279

280

281

282

283

284

285

286

287

288

289

290

291

292

293

294

295

296

297

298

299

300

301

302

303

304

305

306

307

308

309

310

311

312

313

314

315

316

317

318

319

320

321

322

323

324

325

326

327

328

329

330

331

332

333

334

335

336

337

338

339

340

341

342

343

344

345

346

347

348

349

350

351

352

353

354

355

356

357

358

359

360

361

362

363

364

365

366

367

368

369

370

371

372

373

374

375

376

377

378

379

380

381

382

383

384

385

386

387

388

389

390

391

392

393

394

395

396

397

398

399

400

401

402

403

404

405

406

407

408

409

410

411

412

413

414

415

416

417

418

419

420

421

422

423

424

425

426

427

428

429

430

431

432

433

434

435

436

437

438

439

440

441

442

443

444

445

446

447

448

449

450

451

452

453

454

455

456

457

458

459

460

461

462

463

464

465

466

467

468

469

470

471

472

473

474

475

476

477

478

479

480

481

482

483

484

485

486

487

488

489

490

491

492

493

494

495

496

497

498

499

500

501

502

503

504

505

506

507

508

509

510

511

512

513

514

515

516

517

518

519

520

521

522

523

524

525

526

527

528

529

530

531

532

533

534

535

536

537

538

539

540

541

542

543

544

545

546

547

548

549

550

551

552

553

554

555

556

557

558

559

560

561

562

563

564

565

566

567

568

569

570

571

572

573

574

575

576

577

578

579

580

581

582

583

584

585

586

587

588

589

590

591

592

593

594

595

596

597

598

599

600

601

602

603

604

605

606

607

608

609

610

611

612

613

614

615

616

617

618

619

620

621

622

623

624

625

626

627

628

629

630

631

632

633

634

635

636

637

638

639

640

641

642

643

644

645

646

647

648

649

650

651

652

653

654

655

656

657

658

659

660

661

662

663

664

665

666

667

668

669

670

671

672

673

674

675

676

677

678

679

680

681

682

683

684

685

686

687

688

689

690

691

692

693

694

695

696

697

698

699

700

701

702

703

704

705

706

707

708

709

710

711

712

713

714

715

716

717

718

719

720

721

722

723

724

725

726

727

728

729

730

731

732

733

734

735

736

737

738

739

740

741

742

743

744

745

746

747

748

749

750

751

752

753

754

755

756

757

758

759

760

761

762

763

764

765

766

767

768

769

770

771

772

773

774

775

776

777

778

779

780

781

782

783

784

785

786

787

788

789

790

791

792

793

794

795

796

797

798

799

800

801

802

803

804

805

806

807

808

809

810

811

812

813

814

815

816

817

818

819

820

821

822

823

824

825

826

827

828

829

830

831

832

833

834

835

836

837

838

839

840

841

842

843

844

845

846

847

848

849

850

851

852

853

854

855

856

857

858

859

860

861

862

863

864

865

866

867

868

869

870

871

872

873

874

875

876

877

878

879

880

881

882

883

884

885

886

887

888

889

890

891

892

893

894

895

896

897

898

899

900

901

902

903

904

905

906

907

908

909

910

911

912

913

914

915

916

917

918

919

920

921

922

923

924

925

926

927

928

929

930

931

932

933

934

935

936

937

938

939

940

941

942

943

944

945

946

947

948

949

950

951

952

953

954

955

956

957

958

959

960

961

962

963

964

965

966

967

968

969

970

971

972

973

974

975

976

977

978

979

980

981

982

983

984

985

986

987

988

989

990

991

992

993

994

995

996

997

998

999

1000

Problems

Output

Debug Console

Terminal

Ports

GitLens

timeHint: 'Students who are 25 or younger in the 2024 cohort',

vizType: 'table',

sql: 'SELECT * FROM "Kentucky_Community_and_Technical_College_System".cohort WHERE Cohort = 2024 AND CAST(Student_Age AS UNSIGNED) <= 25',

queryString: ''

}

POST /api/analyze 200 in 4.3s (compile: 6ms, render: 4.3s)

[v0] Executing SQL: SELECT * FROM "Kentucky_Community_and_Technical_College_System".cohort WHERE Cohort = 2024 AND CAST(Student_Age AS UNSIGNED) <= 25

[v0] Testing database connection...

[v0] Database connection successful!

[v0] Executing query...

[v0] Query returned: 1762 records

POST /api/execute-sql 200 in 395ms (compile: 3ms, render: 392ms)

GET / 200 in 26ms (compile: 5ms, render: 21ms)

GET /api/dashboard/kpis 200 in 151ms (compile: 5ms, render: 146ms)

GET /api/dashboard/kpis 200 in 151ms (compile: 193ms, render: 149ms)

GET /api/dashboard/risk-alerts 200 in 417ms (compile: 8ms, render: 409ms)

GET /api/dashboard/retention-risk 200 in 426ms (compile: 3ms, render: 423ms)

GET /api/dashboard/risk-alerts 200 in 355ms (compile: 2ms, render: 352ms)

GET /api/dashboard/retention-risk 200 in 361ms (compile: 177ms, render: 35ms)

GET /api/dashboard/readiness 200 in 1346ms (compile: 576ms, render: 1345ms)

GET /api/dashboard/readiness 200 in 1214ms (compile: 2ms, render: 1212ms)

New update available

Later

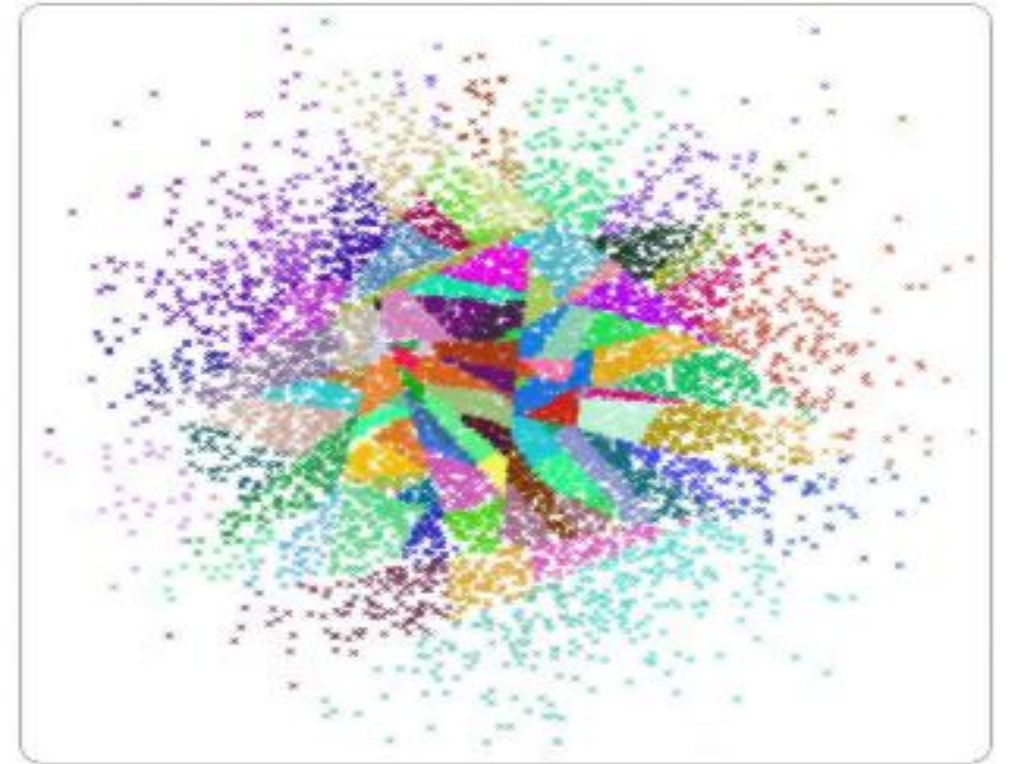
Install Now

cursor agent to run Agent - JK to generate command

California Institution

- Large institution (30,000+ students)
- Huge technology stack across the entire institution
- Built a chat bot from LLM to be able to ask questions about vendors, data elements, tool purposes, campus owners, etc.

California Institution



Data Model: Relational + Vector Store



which one of these holds PII inside of it?



All of them. Each LMS in our inventory ingests PII:

- Blackboard Learn — Email (Inbound), Student ID (Inbound)
- Canvas — Email (Inbound), Student ID (Inbound)
- D2L Brightspace — Email (Inbound), Student ID (Inbound)
- Moodle — Email (Inbound), Student ID (Inbound)
- Sakai — Email (Inbound), Student ID (Inbound)

Ask something...



Private KY Institution

Context

Who: End users e.g college advisers student success staff

The Challenge: Have some data access but varied technical skills and context to analyze independently

Current Friction:

- Must submit requests to data analysts (creates bottlenecks)
- Clarification takes time
- Outputs might not match expectations
- Data team cycles on repetitive, one-off analyses

Impact: Lost capacity for strategic work; delayed answers for time-sensitive student needs

Private KY Institution

ar_cohorts

ar_courses

data_dictionar...

What is the average GPA of students who took a Math gateway course in their first academic year?

Cohort Data Alchemist

Thanks for your question, Andrew! Based on the metadata in [data_dictionary_and_institutional_knowledge](#), here's how I'll approach calculating the average GPA of students who took a Math gateway course in their first academic year: `data_dictionary_and_i...`

Step-by-Step Plan

1. Identify Math Gateway Courses:

- From [ar_courses](#), filter rows where Math or English Gateway = M and Academic Year matches the student's first year.

2. Confirm First-Year Enrollment:

- Use [ar_cohorts](#) to determine each student's cohort year and match it with their course enrollment year.

3. Extract GPA Data:

- From [ar_cohorts](#), use GPA_Group_Year_1 for students who attempted a Math gateway course in their first year.

4. Calculate Average GPA:

- Aggregate the GPA values for these students and compute the mean.

Before I proceed, could you confirm a couple of things?

- Should I include all students (e.g., transfer, first-time, re-admit), or only a specific group?
- Do you want the average GPA for the entire first year (GPA_Group_Year_1) or just the term when the Math gateway course was taken (GPA_Group_Term_1)?

Once you confirm, I'll run the analysis and share the results!

data_dictionary_and_institutional_knowledge

https://syntexdata-my.sharepoint.com/personal/gatdulaa_syntex_data_com/_layouts/15/...
Andrew Gatdula modified a few seconds ago

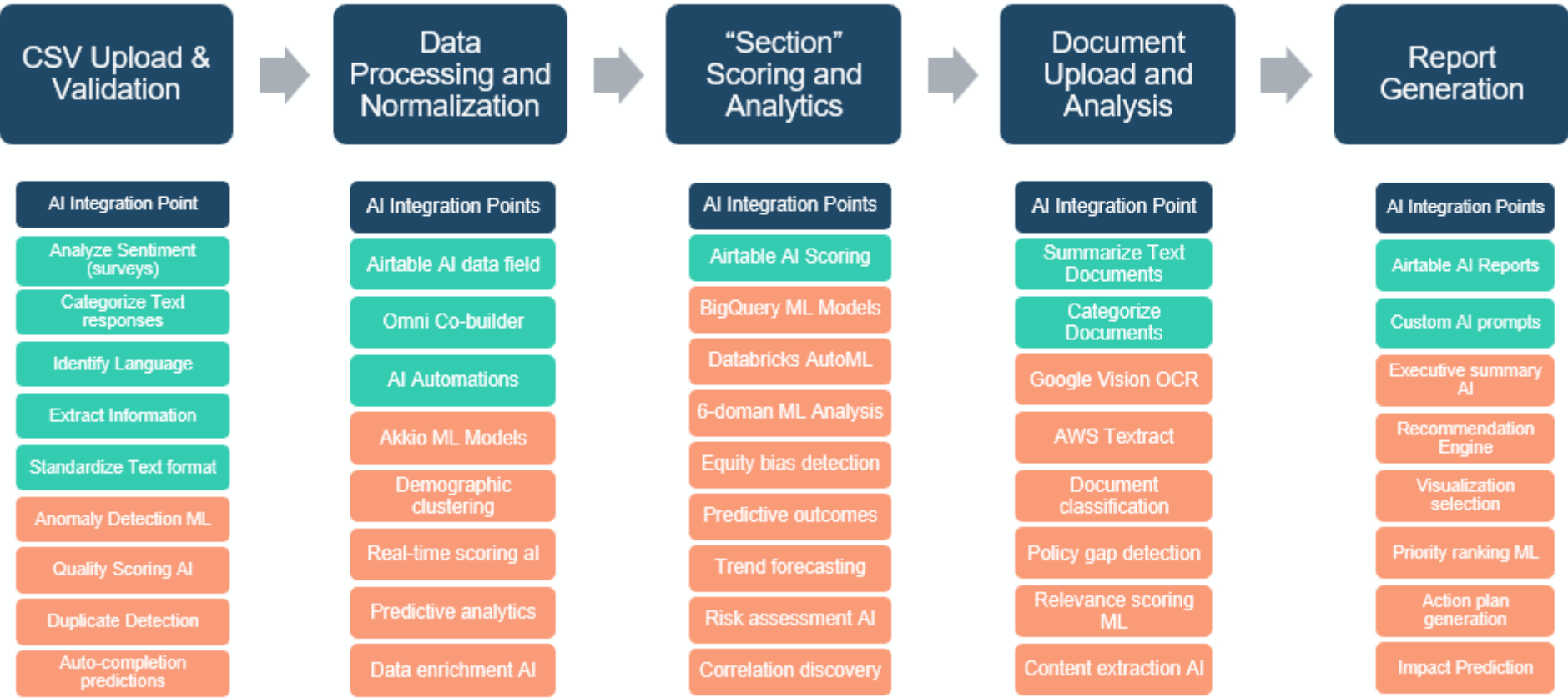
Ask

Gardner Institute

- Sensemaking
 - Score two surveys
 - Combine with institutional student data
 - Combine with institutional strategic documents
 - Prepare in a report that use for guided discussion with campus
- Process typically takes 2 staff members about 2 weeks to complete

Gardner Institute

Directions & Scalability: Agentic Survey Workflow Example



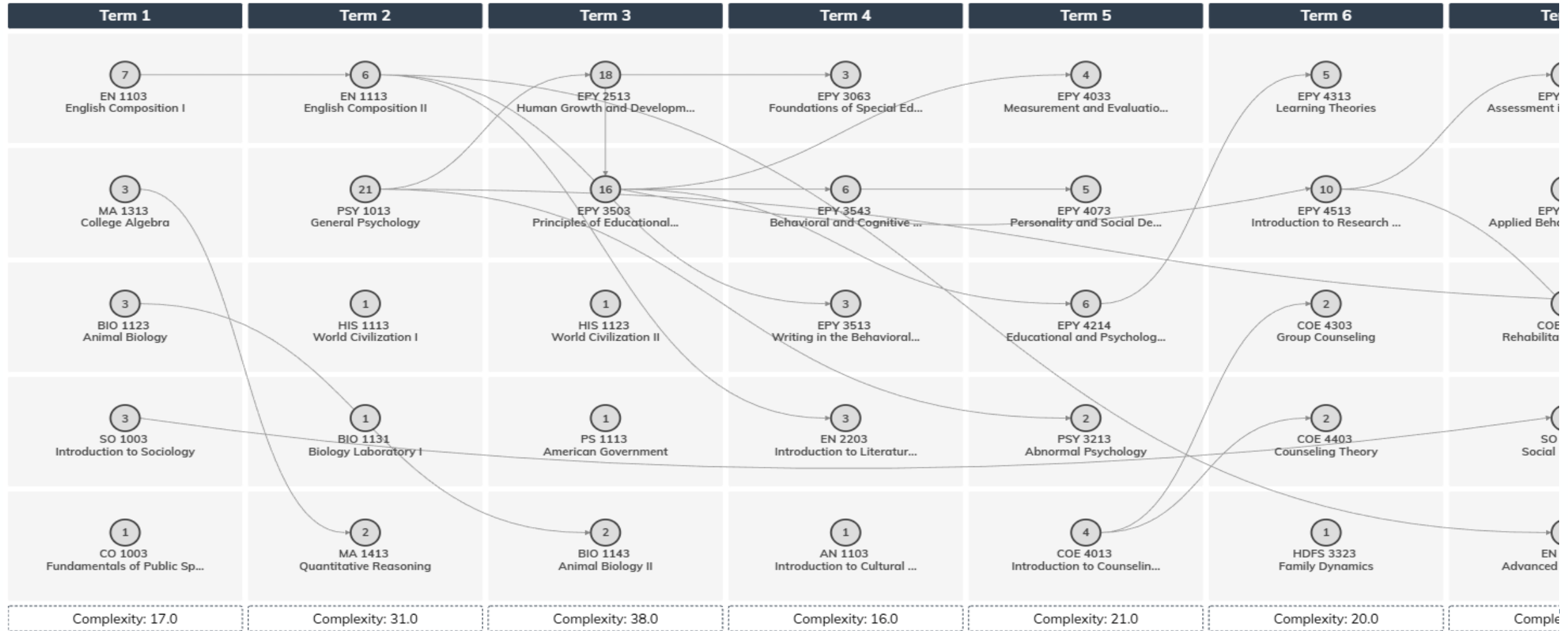
Program Course Maps

Educational Psychology with Counseling/Clinical Applications Concentration Credits: 119 Complexity: 178

Edit Curriculum

Create a Copy

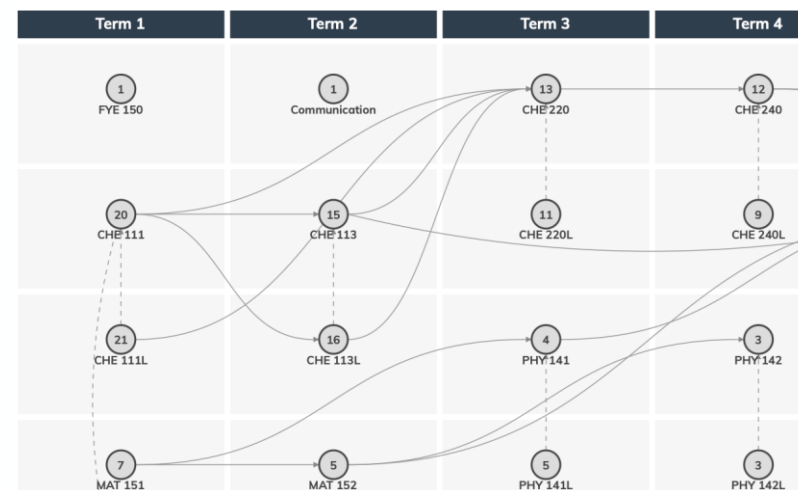
View in list



Course Maps + AI

Course	Title	Terms	Sections	Enrollment	D,F,W,I Rate
BIO 330	Biochemistry	1	1	7	00.0 %
BIO 330L	Biochemistry Laboratory	1	1	7	00.0 %
CHE 101	Introduction to Chemistry	1	1	23	56.5 %
CHE 103	Basic Chemistry I	1	3	66	45.5 %
CHE 103L	Basic Chemistry I Laboratory	1	5	59	18.6 %
CHE 104	Basic Chemistry II	1	2	38	18.4 %
CHE 104L	Basic Chemistry II Laboratory	1	3	38	07.9 %
CHE 111	General Chemistry I	1	3	88	48.9 %
CHE 111L	General Chemistry I Laboratory	1	5	80	30.0 %
CHE 113	General Chemistry II	1	2	55	29.1 %
CHE 113L	General Chemistry II Laboratory	1	4	53	11.3 %
CHE 220	Organic Chemistry I	1	1	26	23.1 %
CHE 220L	Organic Chemistry I Laboratory	1	2	25	04.0 %

Biochemistry, Biophysics and Molecular Biology. (26.02) Credits: 122 Complexity: 263



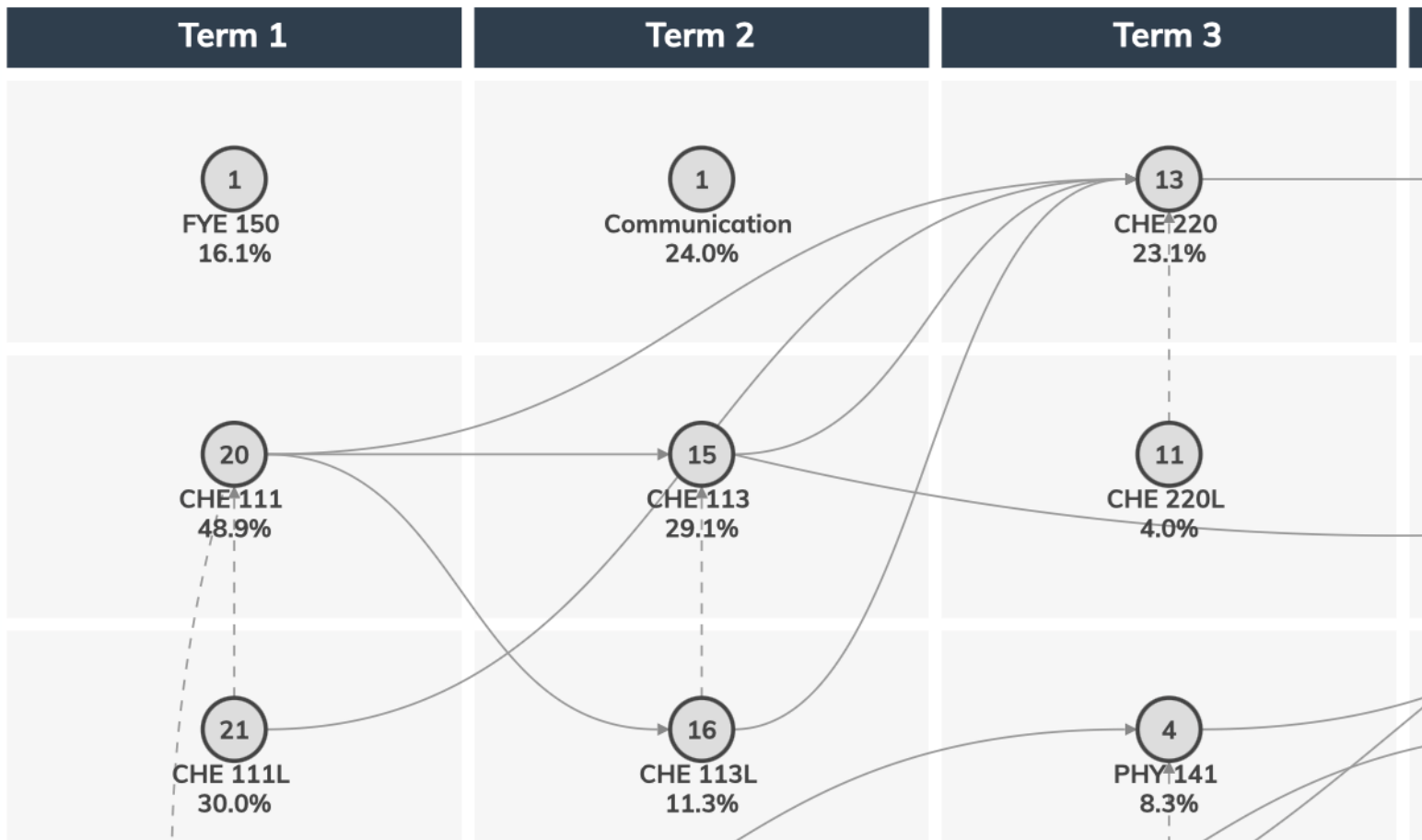
Program Course Maps + AI

BioChem_DFWI_1

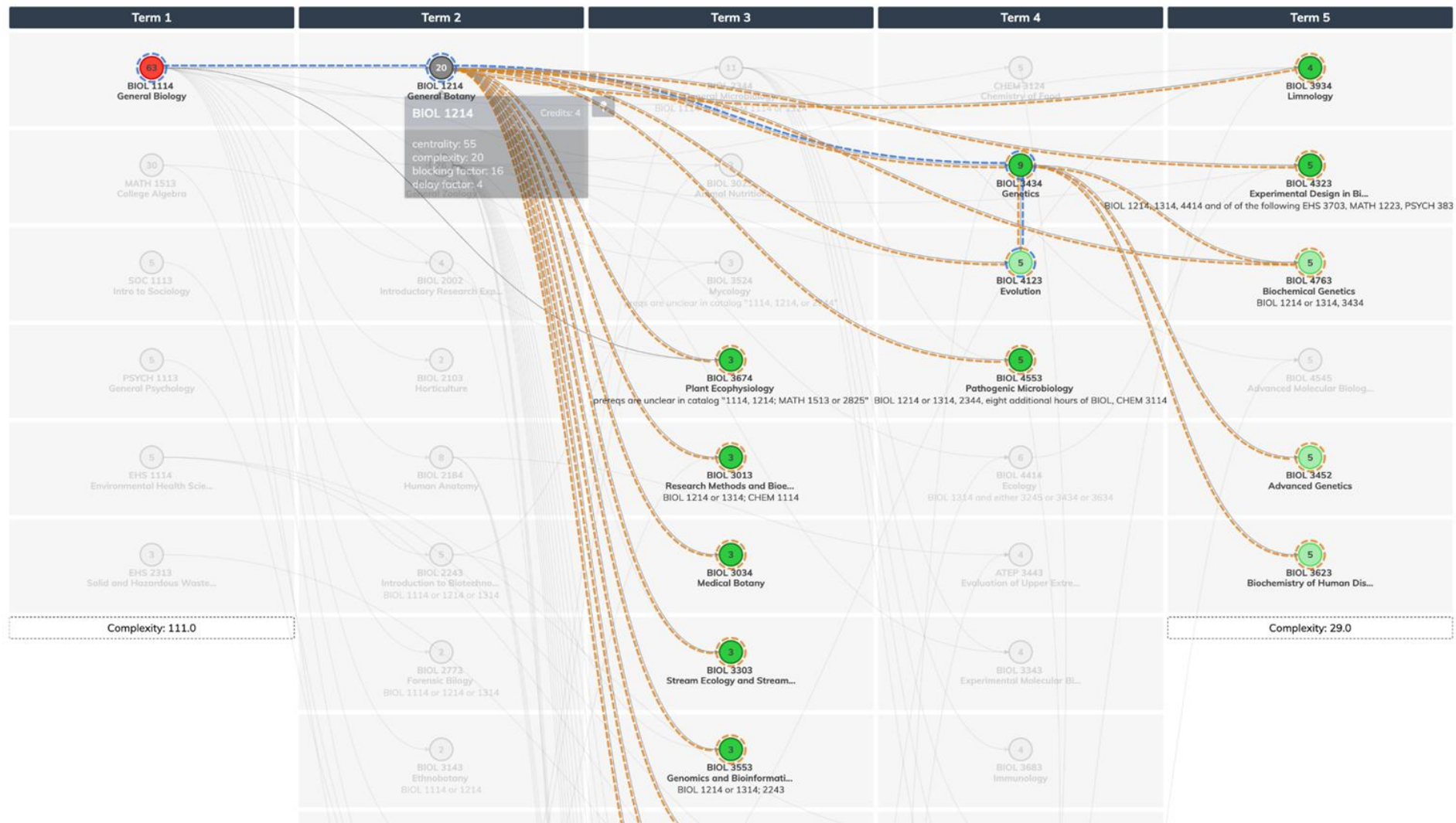
Credits: 122

Complexity: 263

[Edit Curriculum](#)



Gateway Course Maps



Discussion & Questions

Contact Information

- Brent Drake

drake@gardnerinstitute.org



Next Meeting

- ▶ 3rd Quarter: August 26 - Could this be YOU?

Announcements

- ▶ Datatelligent will be at: (come by and say 'hi')
 - Higher Ed Data World – April 26-29
 - AIR Forum – May 26-29
- ▶ We will soon announce an in-person DAAHE meeting in the Chicagoland area this summer. Be on the lookout for details.
- ▶ New Podcasts every other Wednesday
- ▶ Follow us on LinkedIn
 - [Datatelligent](#) & [Deborah A. Phelps](#)

Thank you for attending!

If you have feedback or suggestions,
please let us know or email dphelps@datatelligent.ai

Follow-ups

- ▶ Everyone will receive a link to the recording, the presentation, and contact information for attendees.
- ▶ If you do not want your contact information shared, please let us know.
- ▶ Look for your monthly DAAHE newsletter in your inbox.

