

# Supporting Instructors to Improve Teaching Effectiveness:

## Recommendations for Fellowship and Mentorship Programs



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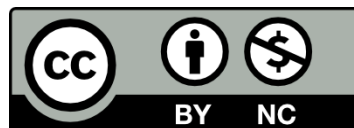
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## EXECUTIVE SUMMARY

Online instructors have access to a wealth of online teacher training resources through eCampusOntario and other websites, but few opportunities for mentorship, social learning, community building, and advocacy. In this report, we take an evidence-based approach to **inform the design and implementation of a teaching-focused mentorship or fellowship program** that aims to enhance online instructor effectiveness, build community, and advocate for

online learning. To inform our recommendations, we conducted a systematic review of literature on fellowship and mentorship programs and performed an analysis of programmatic strengths, weaknesses, opportunities, and challenges (SWOC analysis). Our appraisal of fellowship and mentorship programs resulted in 10 recommendations that can be applied at the single- or multiple-institution level.

### Recommendations Overview

1. **Align program outcomes:** Engage in evidence-based program planning and evaluation to effectively align the program's activities, outputs, and stakeholder roles and responsibilities with its intended outcomes.
2. **Communicate program structure:** Clearly delineate and communicate the program's value, goals, structure, and roles and responsibilities to all key stakeholders.
3. **Maintain a distance:** Maintain an arm's-length relationship between the program and participants' institutional evaluation and promotions process.
4. **Create formal agreements:** Establish formal agreements that clarify expectations, roles, and responsibilities among stakeholders.

5. **Provide guidance in participant matching:** Establish a formal recruitment, selection, and matching process that provides clear guidance to participants, while granting them enough autonomy to establish compatible relationships.
6. **Facilitate individual plan development:** Within the larger program framework, facilitate progress towards goals by having participants develop individualized plans and using structured guidance to keep them on track.
7. **Promote relationship development:** Foster the development of trusting relationships, open rapport, and regular communication by promoting frequent contact and providing mentors with training and support.
8. **Keep participants informed:** Provide timely and relevant informational support to participants.
9. **Incentivize participation:** Incentivize and reward participants for taking part in the program.
10. **Leverage programs to impact community:** Communicate and leverage the potential of teaching-focused mentorship and fellowship programs to positively impact the wider community through knowledge dissemination and capacity building.

We have also developed a set of supplementary resources to aid in the design and implementation of fellowship and mentorship programs. These resources include an index of considerations for conducting needs assessments (Appendix E), advantages and disadvantages of various program design components (Appendix F), characteristics of effective mentors and facilitators (Appendix G), and teaching-focused topics of potential interest (Appendix H).

A thoughtfully designed program, informed by these recommendations and other resources provided in this report, would offer opportunities for online instructors to improve their effectiveness and help raise the profile of teaching within their academic networks.

# BACKGROUND & RATIONALE

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## Rationale

eCampus Ontario is seeking to support mentorship, social learning, community building, and advocacy among online instructors across Ontario. Initiatives aiming to achieve these goals and ultimately improve teaching effectiveness in the online environment would complement the existing online training and teaching resources that eCampusOntario currently offers. Opportunities for sharing knowledge and constructing meaning through dialogue would also help address instructors' desire for social learning via mentoring and learning with peers as a complement to online modules [1].

Teaching-focused mentorship and fellowship programs offer one approach to building community and achieving other goals related to professional development in teaching. However, deciding on a particular mentorship or fellowship model can be challenging, given the diversity of program designs. In this report, we provide evidence-based recommendations to help eCampusOntario and other program developers design and implement effective teaching-focused mentorship or fellowship programs to meet prospective participants' needs.

To inform our recommendations, we conducted a systematic review of literature on teaching-focused fellowship and mentorship programs and performed an analysis of programmatic strengths, weaknesses, opportunities, and challenges (SWOC analysis). Given the paucity of data on online programs, we included studies that assessed online, blended, and face-to-face programs in our analysis.

## Definitions of Roles

**Program developers** are those charged with the creation and design of a mentorship or fellowship program. Program developers' job titles within their institutions will vary and may include faculty developer, educational developer, curriculum developer, or departmental support staff.

**Program staff** refers to those responsible for implementing the mentorship or fellowship program. Program staff may serve various roles, including the director, manager, leader, or facilitator.

**Facilitators** are members of program staff who lead or guide participants in their engagement in a mentorship or fellowship program. They enable participants to pursue their self-identified goals by providing structural, social, and/or psychological

support. They may host meetings or sessions (e.g., orientations, topic-specific presentations, group discussions) and/or coordinate participant engagement throughout the program.

**Institutional administration/administrators** are people who serve in institutional management positions. Administrators often hold decision-making capacities that are responsive to and influence policy, funding, governance, human relations, and/or reporting structures. They may include provosts, deans, chairs, or directors.

**Participants** include all those taking part in a mentorship or fellowship program, including mentors, mentees, and/or fellows.

**Mentors** are program participants who are tasked with guiding, advising, coaching, and/or training one or more mentees.

**Mentees** are program participants who are guided, advised, coached, and/or trained by a mentor.

**Fellows** are participants of a fellowship program. They are often named as fellows to designate their belonging to an academic community, society, or group that shares interests or commitments.

**Stakeholders** are all those who have an interest in program success, include those who are affected by and/or influence a program's design and implementation. Stakeholders include program developers and staff, institutional administrators, participants (mentors, mentees, and/or fellows), and the broader academic community (e.g., students, staff, departments, faculties, and academic communities).

## Definitions of Programs

Teaching-focused fellowship and mentorship programs are varied in their structures and goals, and the distinctions between these two categories are not always clear. On the one hand, two different "mentorship programs" might entail very different approaches. On the other, a "mentorship program" at one institution might be very similar to a "fellowship program" at another. This diversity and lack of classificatory clarity is reflected in the definitions below. It has led us to develop recommendations that apply to diverse types of both mentorship and fellowship programs, rather than treat these categories as homogenous or discrete.

## Mentorship programs

Mentorship programs facilitate the development of relationships, wherein one or more mentors provide guidance and support to help one or more mentees achieve particular goals.

The goals of mentorship can be:

- **developmental**, where the focus is on promoting general improvement of a social, emotional, or academic nature, and/or
- **instrumental**, where the focus is on promoting the development of specific skills or knowledge or the achievement of specific goals [2].

The structure of mentor-mentee relationships in mentorship programs vary widely (see Appendix A: Mentorship Structures for more details), and range from **hierarchical**, in which the mentor is more experienced or skilled than the mentee [2], to **peer mentorship** and **learning communities**, where participants engage in mutual knowledge sharing and support, blurring the lines between mentor and mentee [3].

The teaching-focused mentorship programs included in this study most often employed hierarchical one-to-one mentorship structures or peer learning communities. While some were developmental in focus, most were instrumental, involving a specific development or research project or targeted improvements in a specific instructional area (e.g., classroom technology use).

For a complete list of programs included in our analysis, see Appendix B: Overview of Programs For a more detailed description of select programs, see Appendix C: Sample Programs.

## Fellowship programs

Fellowship programs tend to involve single cohorts of teaching faculty who participate in intensive development activities. They can be institutional, regional, or national in scope. Like mentorship programs, the goals can be developmental or instrumental; for example, fellowship programs may focus on enhancing teaching skills in general or center around a specific development or scholarship of teaching and learning (SoTL) project [4]. In addition, fellowship programs are often intended to reward teaching excellence and raise the profile of teaching and learning in higher education [5]. Teaching fellowship activities often include mentorship components and encourage collaborative learning [6].



Of the 12 fellowship programs analyzed in this study, 10 included a developmental project and/or SoTL or research project. Ten of the 12 fellowship programs included one or more mentorship components, which most often took the form of a learning community.

## Assumptions

We developed the recommendations in this report under the assumptions that eCampusOntario would:

- be interested in developing fellowship and/or mentorship programs that engage participants from multiple institutions across Ontario
- wish to consider a range of mentorship or fellowship models in order to inform approaches that best suit eCampusOntario needs
- be inclined toward online and blended avenues of engagement, while valuing inferences drawn from face-to-face programs that could inform more digitally-focused program design

Given the above assumptions, our recommendations incorporate considerations from a wide variety of programs found throughout the literature. Generally speaking, our recommendations also apply to program developers who are interested in developing fellowship or mentorship programs at the individual institutional level.

# METHODS

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To inform our recommendations, we engaged in a systematic literature review of primary research on mentorship and fellowship programs designed to promote effective teaching among instructors in higher education institutions. This method allows researchers to identify, critically evaluate, and synthesize data from multiple studies, in order to answer a particular research question [7].

To conduct this review, we established and implemented a specific search strategy, screened publications for relevance, conducted line-by-line coding of articles selected for inclusion, completed a SWOC analysis of our coded data, and developed recommendations based on our findings.

## Search Strategy

We used three online databases, ERIC, PsycINFO, and CBCA Education, to search for publications that included the following terms in their titles, abstracts, or keywords:

- a) fellow\*, mentor\*, or peer support; and
- b) instructional development, instructional training, faculty development, faculty training, educational development, educational training, academic development, academic staff development, academic staff training, teaching development, pedagogical training, or professional development; and
- c) higher education, postsecondary education, tertiary education, college\*, or universit\*

## Inclusion and Exclusion Criteria

To be included in our analysis, publications had to be published in a peer-reviewed journal in English between January 1, 1985 and December 31, 2015. The authors had to report the findings of a formal evaluation or critical reflection on a specific formal mentorship or fellowship program, for which one of the primary goals was to promote effective teaching among full- or part-time instructors at higher education institutions. The authors had to clearly describe the program, as well as the methodology used to assess it. Eligible programs involved formal one-to-one mentoring, group mentoring, team mentoring, a mentoring community, or any form of fellowship (for definitions, see Appendix A: Mentorship Structures). Some programs also included additional components, such as informational workshops or development projects. Programs could be implemented face-to-face, online, or through blended modalities.

We excluded purely descriptive pieces, as well as evaluations or reflective pieces in which the authors did not clearly describe the program or methodology they used to assess it. We also excluded pieces that reported on informal mentorship arrangements or formal fellowship or mentorship programs that were designed to: a) primarily target areas other than teaching, such as research; b) promote effective teaching of specific content (e.g., teaching Shakespeare); c) promote effective teaching among K-12 educators, teacher candidates, or undergraduate or graduate students who were not employed as faculty or lecturers; and/or d) employ people other than faculty or lecturers as mentors, such as “reverse mentoring” programs in which graduate students mentored faculty.

Figure 1. Screening Process

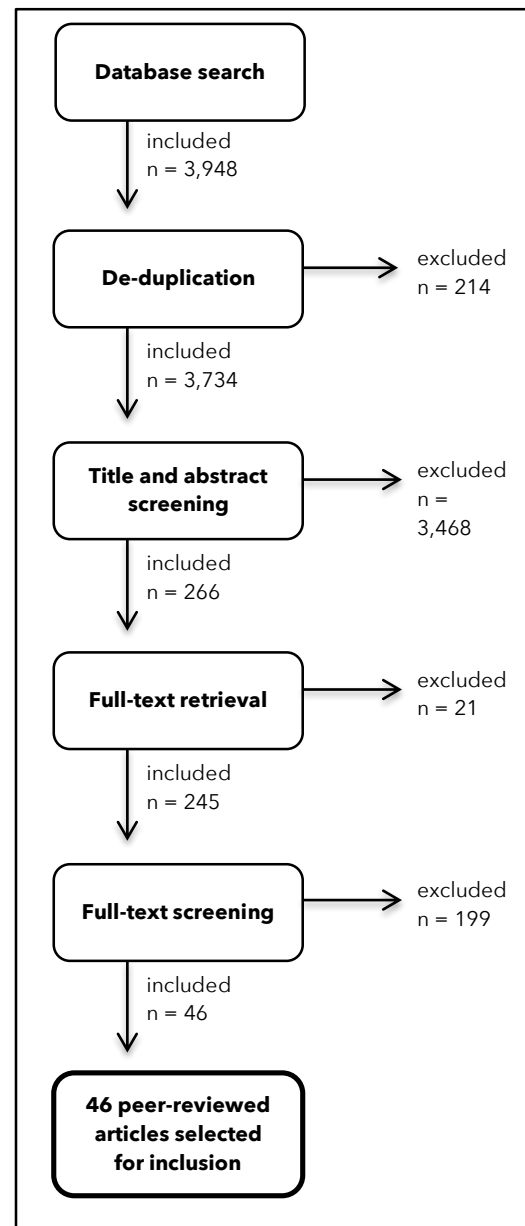
## Screening process

Our search strategy yielded 3,948 results. After removing duplicates, screening publications by title and abstract, and screening the remaining publications by full text, we were left with 46 articles that fit our inclusion criteria (see Figure 1 and Appendix D: Screening Process for more details).

## Data analysis

We uploaded each article selected for inclusion into NVivo (Version 11.4.0), a qualitative data analysis software package. We used group discussion to develop a thematic coding framework, divided the articles among team members, and applied the coding framework through line-by-line coding.

Next, we conducted a SWOC analysis of the coded data to identify strengths, weaknesses, opportunities, and challenges for different programs. We identified key intersections and trends, within and between different program types. We used these results to develop the recommendations in this report.



# RECOMMENDATIONS

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1. Engage in evidence-based program planning and evaluation to effectively align the program's activities, outputs, and stakeholder roles and responsibilities with its intended outcomes.

To develop an effective program that responds to prospective participants' needs, program developers should:

- conduct a needs assessment among target participants (e.g., survey of instructors) to identify support needs, participant capacity, and teaching-related topics of interest (for items to consider when conducting a needs assessment, see Appendix E: Needs Assessment Index) [8-14]
- conduct a cost-benefit analysis to identify the best approach to achieve the desired outcomes with the available human and capital resources [15, 16]
- incorporate learnings from past program evaluations [8, 11, 13, 17, 18]
- incorporate insights, conceptual frameworks, and pedagogical theories from relevant peer-reviewed literature [12, 18-20]

Many prospective participants balance a variety of research, teaching, administrative/service, and personal responsibilities [6, 21-26]. To enable participants to succeed despite constraints on their time and energy, program developers should establish realistic program goals and structures that takes prospective participants' workloads and capacity to engage into account [10, 14, 15, 18, 21, 23].

Program developers should consider the advantages and disadvantages of different program components, in relation to the intended program outcomes and the availability of human and capital resources [15, 16]. A summary of the advantages and disadvantages of design choices and modalities is provided in Appendix F: Advantages and Disadvantages of Program Design Considerations. This resource is intended to help program developers weigh the benefits and drawbacks of potential design choices. For example, program developers should consider the potential benefits and drawbacks of different:

- modalities (e.g., online vs. blended)
- mentorship types (e.g., one-to-one, team, group, community)
- mentor-mentee matching strategies (e.g., inter- vs. intra-disciplinary, peer vs. hierarchical, assigned vs. self-selected)

- program components (e.g., classroom observation, informational workshops, development projects)

From the outset of program design, program developers should incorporate a program evaluation plan and implement mechanisms to collect and respond to feedback from participants and other key stakeholders [8-12, 17, 27]. This can help them identify and address gaps and weaknesses and build on strengths and opportunities in the program, in order to:

- improve program efficacy and sustainability [9, 13, 14, 18]
- accommodate changes in participant needs, interests, and capacity [11, 16, 17, 20]
- inform decision-making by program staff and other stakeholders [13, 27]
- strengthen applications for funding and other support [11, 28]

## 2. Clearly define and communicate the program's value, goals, structure, and stakeholder roles and responsibilities to all key stakeholders.

Clarity of goals and expectations is essential for fostering engagement, accountability, and trust within mentorship and fellowship programs [3, 13, 16, 29]. At each stage in the program planning, implementation, and development process, program developers and staff should clearly communicate their goals and expectations for participating institutions, program staff, mentors, mentees, and/or fellows, including goals and expectations related to:

- the program's outcomes, activities, structure, and timelines [3, 11, 16, 27]
- the program's guiding values, codes of conduct, and rules for participation [5, 19]
- the roles, responsibilities, and points of contact for key stakeholders [3, 8, 11, 15, 16, 22, 30, 31]
- the frequency and mode of contact among participants [13, 17, 28]
- processes for participant selection, assessment, and conflict resolution [8, 13, 26]
- processes for program evaluation and improvement [3, 11, 27]

To foster engagement among key stakeholders, program developers should create a communication strategy for conveying the value of the program to stakeholders, including its potential benefits for mentors, mentees, fellows, institutional administrators, and the institution more broadly [6, 13, 15, 17, 27, 29, 30, 32].

To promote shared expectations and role clarity, program staff should conduct orientation sessions, training workshops, or other induction activities for program staff, mentors, mentees, and/or fellows [8, 9, 17, 19, 22, 30, 31]. Other potential tools for communicating expectations and holding participants accountable include training manuals, guidelines for conduct, syllabi, checklists, schedules, and contracts or other agreements [9, 13, 17, 29, 30].

### 3. Maintain an arm's-length relationship between the program and participants' institutional evaluation and promotions process.

If participants expect their performance within a mentorship or fellowship program may be used to inform their hiring or promotions process in their home departments, it can inhibit their trust in the program, rapport with fellow participants, and willingness to take risks [30, 31]. To foster trust and openness, it's essential to maintain clearly communicated boundaries around program ownership, implementation, and evaluation processes, as well as transparency around the participating institutions' roles, responsibilities, and motives [3, 11, 14, 31].

Mentees and/or fellows should not be matched with mentors or facilitators who will be in a position to make decisions about their hiring or promotion within their home departments [8, 24, 30, 33]. If the mentees or fellows' performance or outputs within the program will be evaluated, the process should be clearly delineated and communicated to them, including:

- who will assess the participants [3, 8]
- what the assessment will involve [3]
- what the goal or utility of the assessment is [29]
- who will see the results and what authority participants will have to choose how results are used/shared beyond the program [30, 31]

Facilitators and participants should sign a confidentiality agreement to ensure that any communications they share with each other will not be disclosed to others [8, 13, 17, 30, 31, 34]. The results of participant assessments should also be kept confidential, unless the subject of an assessment chooses to share it [24, 29, 31, 34]. For example, a mentor, mentee, or fellow who has received a positive assessment

within a mentorship or fellowship program might elect to share their success with their promotion and tenure committee [21].

#### 4. Establish formal agreements that clarify expectations, roles, and responsibilities.

In relation to recommendations 2 and 3, formal written agreements should be established among participating institutions and individuals in order to clarify the expectations, roles, and responsibilities of those involved and foster trust and accountability within the program.

For example:

- Formal agreements between the program's developers and the participants' home institutions can help establish roles and responsibilities for providing resource and staff support, monitoring the program and responding to problems, and maintaining participant confidentiality. [31]
- Formal agreements between groups or pairs can help mentors, mentees, and/or fellows establish shared values, goals, and expectations around reciprocal communication, participant assessment, confidentiality, and program activities and outputs [8, 13, 17, 30, 31, 34].

#### 5. Establish a formal recruitment, selection, and matching process that provides clear guidance to participants, while granting them enough autonomy to establish compatible relationships.

The more specific and numerous the required qualifications for mentors and facilitators are, the harder it will be for program staff to recruit qualified candidates [23, 35]. While expertise in disciplinary knowledge, teaching, and research can help mentors guide their mentees [36, 37], interpersonal compatibility may be more essential [22, 27, 32] (see Appendix G: Characteristics of Effective Mentors/Facilitators).

Trust, rapport, and the provision of psychological and social support are critical components for establishing and maintaining effective mentorship and fellowship relationships [27, 31, 36]. When program developers and staff are defining participant eligibility criteria, reviewing applications, and helping to select and match mentors and mentees, they should take participants' psychological and social support needs, ability to provide that support, and communication preferences into account [23, 30, 38]. If mentors or mentees already know each other, it can potentially help them establish good rapport within a mentorship relationship [23, 31]; however,

if their existing relationship is too close, it can potentially impair their ability to navigate new mentorship dynamics [16, 22, 31, 39].

Program developers and administrators should consider the advantages and disadvantages of different approaches to mentor-mentee matching, while developing strategies to allow participants' personal preferences and attributes to shape the process [3, 5, 8, 22]. A more fulsome discussion of advantages and disadvantages of several approaches to mentor-mentee matching are summarized in Appendix F: Advantages & Disadvantages of Program Design Considerations. For example, if program developers opt for assigned matching, it might help to incorporate a participant needs and skills assessment into the application process to determine appropriate fit [30]. If they opt for self-selected matches, encouraging mentors and mentees to vet each other beforehand by discussing their goals, needs, and limitations might help participants establish a compatible match [9].

Program developers should also incorporate strategies or mechanisms in the program design to manage participant conflict [8, 13]. For example, consider using a neutral third-party to help promote reflection on mentorship relationships and mediate conflicts [26]. Develop contingency plans for mismatched pairings and individuals who want to change mentors, as well as exit procedures for those who wish to withdraw from the program [13, 24, 26, 39].

## 6. Within the larger program framework, facilitate progress towards goals by having participants develop individualized plans and using structured guidance to keep them on track.

Mentors and/or facilitators should help mentees and/or fellows identify their support needs and set realistic goals for participating in the program [3, 8, 9, 13, 15, 16, 20]. Programs with a development project or other instrumental goal, such as creating an online curriculum, will provide some built-in structure [23, 28, 37, 38]. However, even programs with less structured developmental goals, such as developing more effective teaching skills, should involve goal setting and planning at the participant level [11, 19, 22, 30].

Working with their mentors and/or facilitators, mentees and/or fellows should:

- develop a written, individualized action plan that outlines their goals, the specific steps they will take to achieve them, and their timeline for completing milestones [17, 22, 31, 36]
- schedule regular meetings to discuss their progress and problem-solve challenges [11, 13]



- schedule a formal check-in process to revisit and update their action plan [13, 17, 39]

Program developers and staff can provide resources such as guidelines, contracts, templates, and checklists to support participants in goal setting, project planning, and accountability [8, 13, 17, 20, 30, 31, 34].

## 7. Foster the development of trusting relationships, open rapport, and regular communication by promoting frequent contact and providing mentors with training and support.

To allow participants to build relationships and achieve their goals, programs should ideally be scheduled for the duration of at least one year [11, 30, 40]. Administrators should time the program to start before or early in the academic term, such as late summer or early fall in North American contexts, rather than times when participants are wrapping up their courses [8, 9, 30].

Participants should make contact with each other early in the process to establish rapport and develop shared expectations for their activities and interactions together [8, 17, 30, 33]. In blended programs, early face-to-face contact is ideal [8]. In online programs, we propose that video conferencing technologies (e.g., Skype, WebEX) would help build a sense of social presence among participants.

Participants should also establish shared expectations for maintaining reciprocal communication throughout the program [22]. They should discuss their preferences and expectations regarding frequency and mode of contact (e.g., face-to-face, video conferencing, email) [8]. Program staff should help facilitate the scheduling of meetings and hold participants accountable for maintaining regular contact [8].

Meeting regularly, which the literature suggests is at least once a month, can help foster:

- open and caring relationships between participants [19, 30, 36]
- rapport and community building among group members [11, 14, 30, 32]
- step-by-step progress (scaffolding) towards goals and project development and reflection on challenges and achievements along the way [5, 8, 10-13, 15, 20, 24, 26, 32, 39, 41, 42]

Incorporating opportunities for group discussion into the program can help facilitate networking, a sense of community belonging, and the exchange of ideas among diverse participants [9, 11, 13, 14, 23, 28, 30, 32, 36, 38, 40, 41]. Interdisciplinary engagement, in particular, can help expose participants to new ideas and approaches in teaching [3, 5, 8, 29, 30, 36]. In one-to-one mentorship programs, consider gathering mentorship pairs together for larger group meetings or online interactions [12, 30].

Program developers and staff should provide training and ongoing support for mentors to foster their mentorship and communication skills, ability to provide effective feedback, and ability to provide psychological and social support [8, 15, 23, 30]. For example, providing guidelines for caring behaviour and establishing a mentor support group or learning community for mentors themselves may help mentors develop their knowledge and skills and manage potentially stressful situations [23].

#### 8. Provide timely and relevant informational support to participants.

In addition to orientation and training sessions, program developers and staff should provide participants with support materials that offer information and guidance on:

- mentorship strategies [25]
- teaching strategies, educational theories, curriculum development, or other topics related to the program activities and goals [13, 15, 30]
- contact information or links to program staff, centers for teaching and learning, and other program or institutional resources [8, 13]

Administrators should provide these materials at the outset of the program and consider posting them online, where participants can access them when needed [17]. In mentorship programs with inter-departmental matching, administrators should try to connect mentees with contacts in their home departments who can field their department-related inquiries [5, 8, 43].

Program developers and staff should also consider incorporating workshops, online courses, or other interactive learning opportunities into their program design – or help make participants aware of other opportunities to engage in such activities within their academic networks. Community and participant needs assessments can help program developers and staff identify specific topics of interest (see Appendix E: Needs Assessment Index and Appendix H: Topics of Interest).

In addition to teaching skills, participants may benefit from other information or guidance related to aspects of their professional development, such as:

- navigating institutional/academic systems, structures, and services [16, 19, 22, 38, 39, 44, 45]
- career advancement [12, 13, 30, 39]
- leadership and management skills [12, 22, 46]
- research, writing, and grant applications [8, 12, 13, 22, 36, 39]

These professional development activities are considered valuable for fostering shifts in institutional culture, since curriculum innovation and teaching advocacy involves organizational change that must be led and managed strategically [46]

## 9. Incentivize and reward participants for taking part in the program.

Having the backing and support of institutional administrators is a predictor of institutional success [3, 6, 11, 23-25, 29, 37, 47]. Incentives and rewards for mentors, mentees, and/or fellows – such as release time, grants, stipends, or other compensation – can help to:

- reduce barriers of time and competing priorities [9, 13, 21, 23, 32]
- foster participant interest and recruitment in the program [11, 25, 28]
- promote participant progress and achievement of goals within the program [9, 13, 28, 32]
- reward individuals for their participation and commitment to effective teaching [11, 13, 15, 41]
- demonstrate the value granted to effective teaching in the academic network [6, 13, 22]

Program developers and participants' home administrators can also reward and recognize participants' engagement by:

- recognizing participation in the program as evidence of commitment to teaching or service on faculty evaluations (with attention paid to the importance of keeping participant assessments within the program confidential; see Recommendation 3) [13]
- granting participants a formal title (e.g., Distinguished Teaching Fellow) or certificate upon completion [6, 13, 17, 38, 47]

- incorporating a ceremonial or social event into the program, such as a kick-off retreat or end-of-year banquet [13, 30, 31]

## 10. Communicate and leverage the potential of teaching-focused mentorship and fellowship programs to positively impact the wider community through knowledge dissemination and capacity building.

To maximize the program's impact and value, program developers and staff should identify and create opportunities for knowledge dissemination and exchange [6, 14, 25, 38, 48]. These activities can contribute to participants' networking, visibility, prestige, and career advancement [38, 39, 43], while benefiting their home institutions and wider academic networks through knowledge and resource dissemination [3, 4, 6, 9, 17, 18, 25, 28, 29, 35, 38, 46]. For example, program staff, facilitators, and/or mentors should encourage mentees and/or fellows to:

- incorporate dissemination goals and activities into their individualized action plans [6, 14, 38]
- share the results of their development projects or other program activities through conference presentations, publications, or faculty development sessions [6, 8, 24, 28]
- share resources and insights from the program with colleagues outside the program [3, 4, 6, 18, 25, 29, 35, 38, 40, 45]

Program staff and participants' home institutions should also leverage the capacity-building potential of mentorship and fellowship programs by:

- enlisting past mentors and mentees as future mentors [4, 12, 13, 15]
- inviting participants to facilitate or take part in other faculty development activities [6, 9, 25, 28, 38, 48]
- maintaining connections with key stakeholders and community contacts (e.g., staff at local centres of teaching and learning) who can support future program development, implementation, and recruitment efforts [44]

By leveraging these opportunities and effectively conveying the value of their programs to participants, participants' home institutions, and other key stakeholders, program developers and staff can potentially help foster institutional support for the value of teaching and efforts to improve it, as well as the integral role of mentorship in faculty development [5, 13, 38, 39]. Over time, this might help build greater institutional interest, support, and commitment to teaching-focused mentorship and fellowship programs.

# CONCLUSIONS & FUTURE DIRECTIONS

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eCampusOntario has expressed interest in implementing a teaching-focused mentorship or fellowship program for online instructors in order to improve teacher effectiveness, support mentorship, advocate for online learning, and build community among online instructors. The evidence-based recommendations provided in this report can help inform the design and implementation of such a program. As a critical next step, program developers should consider identifying a pool of target participants and conducting a needs assessment survey to determine their support needs, interests, and capacity to participate.

The recommendations were developed with eCampusOntario in mind, but they could potentially guide other institutions and program developers as well. Many of them would be applicable to programs at the single- or multiple-institution level. Efforts to develop, support, and sustain a thoughtfully designed teaching-focused fellowship or mentorship program could not only help to improve instructional effectiveness, but also serve to raise the profile of teaching within academia and the pedagogical value of online learning experiences.

# APPENDIX A: MENTORSHIP STRUCTURES

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**One-to-one:** One mentor meets with one mentee at a time.

**Group:** One mentor meets with multiple mentees at a time. Mentees typically share a common or similar goal.

**Team, mentoring mosaic:** Multiple mentors work with a single mentee. Mentees access multiple figures for learning, feedback, and support.

**Mentoring (learning) community:** Any combination of scholars, practitioners, students, stakeholders, and activists are brought together to inquire into practice and foster professional development.

**Peer, co-mentoring, collaborative:** Lines are blurred between mentor and mentee, with participants focusing on mutuality and interdependent, reciprocal learning.

**Cross-age peer, near-peer:** The mentor is only slightly more experienced than the mentee (e.g., a late-career faculty member mentors a junior faculty member).

**Hierarchical:** There are significant differences in experience or age between the mentor and mentee (e.g., a late-career faculty member mentors a junior faculty member).

**e-Mentoring:** Mentors engage with mentees via online or blended modalities, such as email, online discussion boards, or teleconferencing.

**Reverse:** The mentor is younger or less experienced in general but has more experience or knowledge in a particular area than the mentee (e.g., a junior faculty member mentors a late-career faculty member on the use of technology in the classroom).

**Informal:** Relationships between the mentor and mentee develop naturally and may not include any formal agreement or formalized structure.

**Formal:** Relationships between the mentor and mentee are purposefully developed as a part of a structured mentor program.

## APPENDIX B: OVERVIEW OF PROGRAMS

Program							Publication	
Name or descriptor*	Target participants, discipline, setting	Primary teaching-related goal	Modality, duration	Mentorship arrangement(s)	Central project	Other components	First author, year	Evaluation
Adjunct faculty orientation and mentoring program	Adjunct faculty, engineering, Lorain County Community College (USA)	Developmental: prepare for role as new adjunct instructor	Face-to-face, biweekly discussion, one term	One-to-one (hierarchical, intradepartmental, assigned)	N/A	Classroom observation; printed support materials	Annable, 1996 [21]	Multiple surveys (n=1)
Alumni Teaching Scholars Community	Tenure-track faculty, multiple disciplines, Miami University	Instrumental: pursue individual projects related to learning and teaching	Face-to-face, one year	Learning community; one-to-one or team (hierarchical, intra-/interdepartmental, self-selected)	Varied	Assigned readings; seminars	Cox, 2013 [43]	Qualitative survey (n=27); analysis of applications (n=51)
Collaborative PBL faculty development program	Full- and part-time faculty, nursing, multiple institutions (Canada)	Instrumental: transition from a traditional teaching approach to problem-based learning	Face-to-face, one year	Learning community; one-to-one (hierarchical)	N/A	Intensive workshop; lunch-and-learn sessions	Matthew-Maich, 2007 [12]	Focus group (n=30)
Cottrell Scholars Collaborative New Faculty Workshop	New tenure-track faculty, chemistry, multiple institutions (USA)	Instrumental: introduce faculty to specific evidence-based teaching methods	Blended, unspecified duration	One-to-one for first cohort (hierarchical, inter-institutional, assigned); learning community for second cohort	N/A	Intensive workshop; webinars	Baker, 2014 [44]	Mixed-method pre/post/delay surveys (n=81)

Program							Publication	
Name or descriptor*	Target participants, discipline, setting	Primary teaching-related goal	Modality, duration	Mentorship arrangement(s)	Central project	Other components	First author, year	Evaluation
Curriculum Workshop Series	Junior faculty, family medicine, Harbor-UCLA (USA)	Instrumental: develop curriculum design skills	Face-to-face, one to two meetings per month, 10 months	Learning community	Design and implement a new curriculum or enhance an existing one	Assigned readings; lectures; participant presentations	Snyder, 2001 [10]	Qualitative survey (n=9); assessment of projects (n=8)
Department of Lifelong Learning e-mentoring program	Part-time academic staff, multiple arts and humanities disciplines, University of Exeter (UK)	Instrumental: develop new distance e-learning module	Blended, one year	One-to-one (hierarchical, interdepartmental, assigned); learning community	Design and implement an e-learning module	Group training meetings	Thompson, 2010 [8]	Mixed-methods survey (n=19); interviews (n=17)
Distance Education Mentoring Program	Teaching faculty, multiple disciplines, Purdue University Calumet (USA)	Instrumental: develop skills for designing and teaching online courses	Blended, one year	One-to-one and team (hierarchical, interdepartmental, assigned)	Design and implement an online course	Intensive knowledge-exchange session; monthly workshops; online course; online support materials; classroom observation; end-of-year luncheon	Barczyk, 2011 [49]	Quantitative survey (n=34)
							Buckenmeyer, 2011 [47]	Quantitative survey (n=47)
							Hixon, 2011 [17]	Quantitative survey (n=47)
Educational Scholars Program	Faculty, paediatric medicine, multiple institutions (USA)	Instrumental: complete a scholarly education project	Face-to-face, three years	One-to-one (hierarchical, intra-/inter-institutional, self-selected); team; peer	Complete a scholarly educational project that results in a peer-reviewed publication or presentation	Participation in annual meeting of the Pediatric Academic Societies	Balmer, 2011 [39]	Survey (n=36); focus groups (n=30, 19, 9)



Program							Publication	
Name or descriptor*	Target participants, discipline, setting	Primary teaching-related goal	Modality, duration	Mentorship arrangement(s)	Central project	Other components	First author, year	Evaluation
eLearning Fellowship Program	Academic staff, multiple disciplines, University of Jos (Nigeria)	Instrumental: improve uptake of technology for teaching and learning	Blended, at least one meeting per month, one year	One-to-one (hierarchical, assigned); learning community	Design and implement an online course	Training sessions; participant presentations; external examinations	Adewumi, 2011 [35]	Pre/post survey of online course offerings (n=6 faculties)
Faculty development program at Medical University of South Carolina (MUSC)	Faculty, multiple health disciplines, MUSC (USA)	Instrumental: increase interprofessional collaboration	Face-to-face, monthly sessions / meetings, unspecified duration	Learning community and/or one-to-one (assigned)	Complete an inter-professional project (varied)	Training sessions; group activities; interview or observation of peers	Shrader, 2015 [18]	Multiple surveys (n=40, 36, 11)
Faculty Fellows Program	Faculty, multiple disciplines, a regional comprehensive university (USA)	Instrumental: enhance service-learning pedagogy and scholarship through course design	Face-to-face, monthly meetings, two years	Learning community	Plan for and implement a service-learning course	Assigned readings; skill-building activities; individual and collaborative scholarship; reflective essay	Harwood, 2005 [32]	Qualitative survey (n=16); analysis of program documents
Faculty fellows programs at Elon and Western Carolina	Varied faculty, multiple disciplines, Elon University and Western Carolina University (USA)	Instrumental: integrate service-learning into the curriculum	Elon: face-to-face, one year W. Carolina: face-to-face, two years	Elon: past fellows act as mentors (mentorship type not specified); learning community  W. Carolina: current fellows act as mentors to colleagues (mentorship type not specified); learning community	Elon: revise course to include service-learning  W. Carolina: teach service-learning course; produce journal article or conference presentation	Elon: seminar series  W. Carolina: orientation session; seminar series; knowledge dissemination	Bowen, 2009 [41]	Mixed-method survey (n=27); interviews (n=8); participant observation; analysis of program documents

Program							Publication	
Name or descriptor*	Target participants, discipline, setting	Primary teaching-related goal	Modality, duration	Mentorship arrangement(s)	Central project	Other components	First author, year	Evaluation
Faculty mentoring in teaching	Teachers, marketing, university in Europe (Finland)	Instrumental: plan and implement a marketing course	Face-to-face, one year	One-to-one (hierarchical, intradepartmental, assigned); learning community	Plan and implement a marketing course	Classroom observation	Tähtinen, 2012 [23]	Self-ethnography (n=4, authors)
Faculty Mentoring Network	New faculty, multiple disciplines, Purdue University (USA)	Developmental: become better teachers	Face-to-face, monthly meetings, less than one year	One-to-one (hierarchical, interdepartmental, assigned with mentee input)	N/A	Orientation session	Wasburn, 2003 [30]	Mixed-method survey (n=24)
Faculty Mentoring Program at Ramapo	Untenured faculty, business, Ramapo College of New Jersey (USA)	Developmental: support goal achievement, institutional acculturation, and community building	Face-to-face, until mentee reaches tenure	One-to-one (hierarchical, interdepartmental, assigned); learning community	N/A	Orientation session; teaching roundtable; collective sessions; support materials; end-of-year luncheon	Eisner, 2015 [13]	Mixed method survey (n=20 mentees, 215 control)
Faculty mentorship program at the Institute of Technology	Teaching and academic support staff, multiple disciplines, Institutes of Technology (Ireland)	Developmental: cultivate the skills and knowledge to design, deliver, and evaluation educational programs	Blended, one year	One-to-one (hierarchical, intradepartmental, assigned with participant input)	N/A	Orientation workshop; collaborative website	Donnelly, 2011 [22]	Qualitative survey (n=20); focus group (n=20)

Program							Publication	
Name or descriptor*	Target participants, discipline, setting	Primary teaching-related goal	Modality, duration	Mentorship arrangement(s)	Central project	Other components	First author, year	Evaluation
FAIMER Regional Institutes fellowships	Health professions teachers, multiple disciplines, multiple institutions (international)	Instrumental: complete an education innovation project to cultivate skills in medical education, educational leadership, and management and build a community of practice	Blended, two years	Learning community	Complete an education innovation project (varied)	Team-building activities; residential sessions; learning circles; listserv	Anshu, 2010 [50]	Analysis of emails (n=392)
							Burdick, 2010 [46]	Quantitative pre/post surveys (n=101); interviews (n=55)
							Singh, 2013 [40]	Quantitative pre/post surveys (n=65 fellows, 52 control)
Family medicine faculty development fellowship	First-year teachers, family medicine, multiple institutions in Texas (USA)	Developmental: prepare faculty as clinical teachers for family practice training programs	Face-to-face, one year	N/A	N/A	Intensive training sessions; classes; assignments; supervised teaching;	Hitchcock, 1986 [51]	Q-sort assessment (n=20)
Learning and teaching fellowships at Brighton	Faculty, multiple disciplines, University of Brighton (UK)	Instrumental: carry out a research project to develop learning, teaching, assessment, or curriculum development practice	Face-to-face, duration not specified	Learning community	Complete a research project (varied)	Knowledge dissemination	Jones, 2010 [6]	Interviews (n=9)
Leveraging Educational Technology for Evidence-Based Practice	Undergraduate faculty, nursing, large public research university (USA)	Instrumental: increase use of educational technologies	Face-to-face, one year	Learning community	Develop and integrate a technology-based module into the curriculum	Workshops; knowledge dissemination (presentations, publications)	Hagler, 2013 [28]	Mixed-method survey (n=?); assessment of projects (n=20+) and courses (n=37)

Program							Publication	
Name or descriptor*	Target participants, discipline, setting	Primary teaching-related goal	Modality, duration	Mentorship arrangement(s)	Central project	Other components	First author, year	Evaluation
Lilly Endowment's Teaching Fellows Program	Tenure-track faculty, multiple disciplines, multiple institutions (USA)	Instrumental: foster reflection and development of expertise in teaching while completing a teaching-focused project	Face-to-face, one year	Learning community	Complete an individual teaching-focused project (varied)	Varies by institution	Austin, 1992 [38]	Mixed-method survey (n=412); interviews (n=?); site visits (n=4); analysis of program documents
Lilly Teaching Fellows Program at UMass	Tenure-track faculty, multiple disciplines, University of Massachusetts (USA)	Instrumental: improve teaching and complete a teaching-focused project	Face-to-face, one year	Learning community; one-to-one (hierarchical, self-selected)	Complete an individual teaching-focused project (varied)	Retreat; teaching workshops; classroom observation; acknowledgement dinner	List, 2003 [9]	Mixed-method surveys (n=110)
Longitudinal Program in Curriculum Development	Medical educators, multiple health disciplines, John Hopkins and other institutions (USA)	Instrumental: cultivate the capacity to design, implement, evaluate, and disseminate medical education curricula	Face-to-face, weekly sessions, ten months	One-to-one or group; learning community	Design, implement, evaluate, and disseminate a curriculum in medication education	Workshops; assigned readings; participant presentations	Windish, 2007 [14]	Mixed-method pre-/post-surveys (n=138 fellows, 63 controls); assessment of curricular projects (n=64)
Master Teacher Leadership Development Program	Faculty, multiple medical and health science disciplines, three institutions in Washington, DC (USA)	Developmental: enhance teaching skills, pursue scholarship in education, and develop leadership potential	Face-to-face, weekly meetings, one year	Learning community	N/A	Instructional courses	Plack, 2015 [4]	Interviews (n=13 supervisors and 25 peers of fellows)

Program							Publication	
Name or descriptor*	Target participants, discipline, setting	Primary teaching-related goal	Modality, duration	Mentorship arrangement(s)	Central project	Other components	First author, year	Evaluation
Mentor Development Program at Kanda	Teachers, English as a foreign language, Kanda University (Japan)	Developmental: enhance teacher-educator skills and practice training techniques	Face-to-face, varied duration (one semester to two years-plus)	Learning community; one-to-one (peer, intradepartmental)	N/A	Classroom observation; workshops; assigned readings	Stillwell, 2009 [26]	Survey (n=16); analysis of personal teaching portfolios and journals (n=6)
Mentor Program at a School of Professional Development	Faculty, education, school of professional development (Israel)	Development: enhance teacher educators' professional development	Face-to-face, two years	One-to-one (hierarchical; assigned); group	N/A	Plenary sessions; practice-oriented workshops; assignments; field trips	Reichenberg, 2015 [36]	Interviews (n=6); quantitative survey (n=231)
Mentoring program for new nursing faculty at Kent	New faculty, nursing, Kent State University (USA)	Developmental: adapt to role of nurse educator and acculturate to institution	Face-to-face, at least one meeting per month, one year	One-to-one (hierarchical, intradepartmental, assigned)	N/A	Topical sessions	Snelson, 2002 [19]	Qualitative survey (n=14)
National Teaching Fellowship Scheme	Faculty, multiple disciplines, multiple institutions (UK)	Instrumental: complete development project	N/A, one year	N/A	Varied	Knowledge dissemination	Skelton, 2004 [5]	Focus groups (n=4 groups); interviews (n=30)
New Faculty Investment Program	New tenure-track faculty, multiple disciplines, Texas A&M University-Kingsville (USA)	Instrumental: design effective learning experiences for students and integrate technology into course design	Face-to-face, weekly sessions, one year	One-to-one (hierarchical, intra-, assigned); learning community	Scholarship of teaching and learning project	Classroom observation; topical sessions; knowledge dissemination, including conference participation	Thomas, 2013 [11]	Survey (n=15); focus group (n=?); analysis of participant reports

Program							Publication	
Name or descriptor*	Target participants, discipline, setting	Primary teaching-related goal	Modality, duration	Mentorship arrangement(s)	Central project	Other components	First author, year	Evaluation
Nurse educator orientation program	New faculty, nursing, community college in California (USA)	Developmental: cultivate instructional skills and acculturate to institution	Face-to-face, one year	Learning community; one-to-one (hierarchical, intradepartmental, assigned with participant input)	N/A	Orientation; seminar series; problem-solving activities; support materials	Baker, 2010 [34]	Quantitative pre/post surveys (n=11); faculty retention rate
Postgraduate Certificate in Academic Practice	New lecturers, multiple disciplines, research-intensive university (UK)	Developmental: foster competent and confident lecturers	Face-to-face, one year	One-to-one (hierarchical, intradepartmental, assigned)	N/A	Classroom observations; workshop sessions; tutorials; assignments; reflective journaling	Mathias, 2005 [15]	Survey (n=63?); interviews (n=63?); analysis of program documents and participant portfolios
Peer support using email	Academic staff, multiple social science disciplines, large university (UK)	Instrumental: transition from to inquiry-based model of pedagogy	Blended, duration not specified	Learning community	N/A	Workshop; assigned readings; reflective journaling	Clegg, 2006 [42]	Analysis of email transcripts (n=13 faculty); interviews (n=9); survey (n=8)
PT <sup>3</sup> faculty development program	Faculty, education, University of Toledo (USA)	Instrumental: integrate technology into teacher education courses	Face-to-face, three years (mentorship introduced in third year)	Learning community	N/A	Annual workshops	Teclehaimanot, 2005 [20]	Multiple quantitative surveys (n=19, 26, 24); analysis of course syllabi (n=20)
Reciprocal peer coaching scheme	Tenured academic staff, education, a UK university (UK)	Developmental: provide support for teaching and other workplace issues	Face-to-face, six months	One-to-one (peer, intra-, self-selected)	N/A	Workshop	Cox, 2012 [33]	Interviews (n=11)

Program							Publication	
Name or descriptor*	Target participants, discipline, setting	Primary teaching-related goal	Modality, duration	Mentorship arrangement(s)	Central project	Other components	First author, year	Evaluation
Service-Learning Faculty Fellows Program	Faculty, multiple disciplines, University of Mississippi (USA)	Instrumental: learn about service-learning pedagogy, while completing a service-learning project	Face-to-face, weekly meetings, one semester	Learning community	Create a new service-learning course or revise an existing course	Seminar; reflective journaling	Carracelas-Juncal, 2009 [52]	Critical reflection (n=3, authors)
Sessional Academic Success	Sessional academics, multiple disciplines, Queensland University of Technology (Australia)	Developmental: provide support for sessional academics and build communities of practice	Blended, duration not specified	One-to-one (hierarchical, intradepartmental, assigned); learning community	N/A	Orientation sessions; training sessions; social events; virtual communities	Hamilton, 2013 [16]	Dialogic, reflective practice approach (n=3, authors)
Subject Learning Coaches' Professional Training Programme	Vocational instructors, multiple disciplines, multiple institutions (UK)	Instrumental: use peer coaching to promote effective subject-area teaching and learning among colleagues	Blended, duration not specified	Learning community	N/A	Training sessions; tutorials; support materials	Browne, 2006 [25]	Survey (n=300+); interviews (n=30); content analysis of program documents
Teaching Improvement Program	Junior faculty, multiple disciplines, University of Georgia (US)	Developmental: help junior faculty adjust to role as instructor	Face-to-face, less than one year	One-to-one (hierarchical, interdepartmental, assigned)	N/A	Orientation session; classroom observation	Diehl, 1989 [24]	Survey (n=27)

Program							Publication	
Name or descriptor*	Target participants, discipline, setting	Primary teaching-related goal	Modality, duration	Mentorship arrangement(s)	Central project	Other components	First author, year	Evaluation
Technology Integration Project	Full-time faculty, education, Towson University (USA)	Instrumental: cultivate technology skills and integrate standards-based technology projects into the curriculum	Blended, duration unspecified	One-to-one (hierarchical)	Frame and implement a standards-based technology integration project	Not specified	Wizer, 2004 [53]	Pre/post assessment of technology skills; analysis of program documents
Title III peer mentorship projects	Faculty, multiple disciplines, Niagara County Community College (Canada)	Varied	Face-to-face, varied duration	Varied: one-to-one or group (hierarchical or peer, inter-/intradepartmental, assigned)	Varied	N/A	Harnish, 1993 [29]	Pre/post surveys (n=?); interviews (n=8)
							Harnish, 1994 [3]	Pre/post surveys (n=?); interviews (n=10)
University Teaching Professional Development	Tenured and pretenured faculty, multiple disciplines, La Laguna and Las Palmas de Gran Canaria universities (Spain)	Instrumental: foster specific core curriculum development and teaching capacities	Blended, six weeks	One-to-one (peer, inter-institutional, assigned)	N/A	Orientation workshop; online training modules	Villar Angulo, 2006 [37]	Quantitative survey (n=30); analysis of self-reflective narrative statements and participant portfolios



## APPENDIX C: SAMPLE PROGRAMS

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### **Faculty Mentoring Network (FMP) at Purdue University [30]**

Key components: one-to-one mentorship (face-to-face)

The goal of the FMP is to help junior faculty become better teachers and cope with research-, service-, and promotion-related demands. Under the FMP, junior faculty are paired with outstanding teachers from outside their departments. Mentees provide input on their preferred mentors, but program staff make the final match. Each pair is encouraged to meet at least once a month. The program also includes an introductory session and presentations on mentoring. In the program evaluation, participants suggested adding topical lunch seminars and more short social meetings, opportunities for mentees to interact with each other, mentoring education, and formal goal setting or planning.

### **Department of Lifelong Learning e-mentoring program [8]**

Key components: development project, one-to-one mentorship (face-to-face), learning community (online)

The goal of this e-mentoring program is to help faculty develop an e-learning module. Part-time faculty who have experience developing e-learning modules are assigned as one-to-one mentors for up to five less experienced part-time faculty, with pairings typically crossing subject specialisms. Through face-to-face, telephone, and email contact, mentors help mentees design and deliver new e-learning modules. They use needs assessments, project plans, and contracts to scaffold this process. The program also includes face-to-face training, face-to-face group meetings, and a web-based chat room facility. In the program evaluation, participants suggested adding an online tutorial and manual to provide more support and guidance. Investigators found the chat room facility was underutilized.

### **Cottrell Scholars Collaborative New Faculty Workshop (CSC NFW) [44]**

Key components: intensive workshop (face-to-face), learning community (online)

The primary goal of the CSC NFW is to introduce chemistry faculty to specific evidence-based teaching methods (EBTMs) and foster participation in teaching-focused faculty learning communities. Junior chemistry faculty from multiple research universities attend a three-day face-to-face workshop, with hands-on activities and group discussion. Throughout the workshop, participants also develop and present a content module that allows them to practice using an EBTM in a safe environment. Following the workshop, they take part in a series of interactive webinars, allowing them to foster an ongoing learning community with their fellow participants.

### **FAIMER Regional Institutes fellowships** [40, 46, 50]

Key components: education innovation project, onsite sessions (face-to-face), learning community and discussions (online)

The goal of FAIMER fellowships is to cultivate skills in medical education, skills in educational leadership and management, and a strong community of practice. The fellowships take place in diverse countries, including Brazil, India, and South Africa. Fellowship appointments are competitive, based on applicants' credentials and project proposals. Over the course of a year, selected fellows complete an education innovation project. They meet face-to-face for 1-2 weeks at the beginning of the program and again after one year. During the intersession period, they discuss educational topics through an online listserv. They receive mentorship support from each other, previous fellows, and faculty. After one year, they continue to participate in the email discussion group.

### **Lilly Teaching Fellows Program at UMass** [9]

Key components: teaching projects, learning community (face-to-face), one-to-one mentorship (face-to-face), retreat and acknowledgement dinner (face-to-face)

The goal of the Lilly Teaching Fellows Program is to improve teaching. Department chairs nominate pre-tenure faculty, and in some cases more experienced faculty, for competitive one-year fellowships. Selected fellows participate in bi-weekly meetings, which include presentations by distinguished teachers, visits to master teachers' classrooms, and group discussion on instructional topics. Fellows also complete individual teaching projects. They receive mentorship support from senior faculty members of their choosing. Following participant feedback, program staff updated the program to provide more guidance around the selection of mentors and more structured syllabi for bi-weekly meetings.

## APPENDIX D: SCREENING PROCESS

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Our search strategy yielded 3,948 results from three online databases: ERIC, PsycINFO, and CBCA Education. We exported the bibliographic information for each result into Zotero (Version 4.0), a reference management software, and Rayyan (Version 1.0), a web application designed to support systematic reviews.

We removed 214 duplicate publications, leaving 3,734 unique publications. Then we used Rayyan to screen the titles and abstracts of these 3,734 publications. To begin this process, two research team members screened the titles and abstracts of a random sample of 50 publications to develop a shared understanding of the inclusion and exclusion criteria and screening process. One of those team members screened the remaining titles and abstracts, consulting with other team members as needed. She excluded 3,468 publications that did not fit our criteria.

We tried to retrieve full-text copies of the remaining 266 publications. Unfortunately, we were unable to locate or retrieve a copy of 21 publications within the timeframe of this project. We have excluded those publications from our analysis. We successfully retrieved a copy of the remaining 245 publications. One team member read them in full, excluding 199 that did not fit our criteria. We were left with 46 articles that fit our inclusion criteria.

# APPENDIX E: NEEDS ASSESSMENT INDEX

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Needs assessments can help inform program design, participant selection, and the matching of mentors and mentees. Program developers and staff can use surveys, application forms, or other data collection tools to gather information about prospective or current participants, in order to develop and implement a program that's responsive to their needs, interests, and goals. The following considerations should be taken into account when designing and implementing needs assessment strategies and tools, such as needs assessment surveys or application forms.

## Considerations of potential participants (mentors, mentees, fellows)

What, if any, demographic information will help you design and implement a successful mentorship or fellowship program? You may wish to collect information about prospective participants, such as:

- faculty, department, field
- employment status (e.g., tenured, tenure-track, sessional/adjunct)
- role(s) at institution
- number of years in role(s)
- name of their department chair or dean
- number of years of teaching experience
- history of professional development activities
- age, gender, other demographic categories
- information about other responsibilities/activities (e.g., service, research)
- How much time do participants have to commit to the program? Ideally, how often would they like to meet or connect with their mentors/facilitators/fellow participants?

## Considerations of prospective mentors

What key skills and knowledge do your prospective mentors need to succeed in their roles? What speciality skillsets or expertise do mentors have that may be beneficial to consider for participant matching? How will you determine if mentors have these qualities? You may wish to assess a prospective mentor's:

- personality traits
- skills and competencies
- knowledge and expertise

The qualities of effective mentors outlined in Appendix G can help you determine which skillsets and mentor qualities to prioritize.

### Considerations about prospective fellows/ mentees

What do prospective fellows/mentees want to achieve by participating in the program? What are their support needs? You may wish to learn:

- What interests and goals do your prospective or current mentees/fellows identify as important or relevant to their perceived success in the program?
- What teaching-related topics would the participants want the program and/or mentors to address (e.g., facilitating group discussions, using classroom technology, designing online curricula)?
- If the program involves a development or research project, what does the mentee propose to do:
  - What are their project goals? Are they achievable?
  - What resources will the mentee need to complete the project?
  - What expertise will the mentee wish/need to draw upon?

## APPENDIX F: ADVANTAGES & DISADVANTAGES OF PROGRAM DESIGN CONSIDERATIONS

Advantages		Disadvantages
DESIGN CHOICES		
Voluntary participation	<ul style="list-style-type: none"><li>Establishes trust: A voluntary scheme reduces fear that information from the program will be used against them [24, 31]</li><li>Promotes co-creation of value [23]</li></ul>	<ul style="list-style-type: none"><li>Participants may be less committed to a voluntary program [23]</li></ul>
Mandatory participation	<ul style="list-style-type: none"><li>Formalizes the program [23]</li><li>May ensure a greater portion of the target population commits to the program [28]</li></ul>	<ul style="list-style-type: none"><li>Requires a formal structure to make explicit what elements will be mandatory, for how long, and/or to what degree [8]</li><li>Perceived as counter to being open and trusting [23]</li><li>May place a greater burden on participant's time [23]</li></ul>
Inter-departmental/ disciplinary matching	<ul style="list-style-type: none"><li>Ideal for when more general pedagogical process-support is needed [8, 29]</li><li>Allows participants to draw from different</li></ul>	<ul style="list-style-type: none"><li>May provide less opportunity for frequent contact by nature of physical proximity [3, 29]</li><li>The misconception may exist that participants</li></ul>

	<p>disciplines to solve common instructional problems [8, 29]</p> <ul style="list-style-type: none"> <li>• Enables cross-curricular learning [3, 24, 32]</li> <li>• Enables development of relationships outside one's own department or faculty [24]</li> <li>• Meeting others from across an institution or from other institutions gives participants broader knowledge of institutional functions, issues, and challenges [38]</li> </ul>	<p>must be from the same discipline to adequately support/connect with one another [22]</p>
Intra-departmental/ disciplinary matching	<ul style="list-style-type: none"> <li>• May enable participants to leverage existing collegial relationships to more quickly establish trust and reciprocal understanding [23]</li> <li>• Ideal when subject area support is needed [8], given ability to share content-related understandings [29]</li> <li>• Enables sharing of discipline-related information and resources (frameworks, methods, materials) [5]</li> <li>• Builds discipline-based connections and sense of community within a department/faculty [16]</li> </ul>	<ul style="list-style-type: none"> <li>• May not allow for the degree of institutional separation required for vulnerability and trust [3, 31]</li> <li>• May evoke distrust of program if other participants are potentially in a position of power (i.e., connected to advancement, promotion, and tenure) [24]</li> <li>• More difficult to arrange or sustain for those with an interdisciplinary focus or interest [8]</li> </ul>

Assigned matching	<ul style="list-style-type: none"> <li>• Allows program staff to match participants by analysis of needs assessment [23, 24]</li> <li>• Strategic matching allows for managing caseloads (i.e., the number of mentees under one mentor's guidance, the size of groups) [30]</li> </ul>	<ul style="list-style-type: none"> <li>• A formal process for matching participants takes resources and time [30]</li> <li>• If a limited number of participants are involved, there is less diversity among the population to support calculated assignments [23]</li> <li>• Contingency plans are needed for when assigned relationships face issues, such as requesting a change to the arrangements [13]</li> <li>• Prevents people from working with one another based on self-perceived attraction and compatibility [29]</li> <li>• In the face of newly established relationships, it may take more time to establish trust and reciprocal understanding [31]</li> </ul>
Self-selected matching	<ul style="list-style-type: none"> <li>• Allows participants to work with others with whom they have previously established bonds [39], enabling them to leverage existing collegial relationships to more quickly establish trust and reciprocal understanding [23, 31]</li> <li>• Reflects a faculty-driven approach [11]</li> </ul>	<ul style="list-style-type: none"> <li>• When self-selecting, participants tend to pick those they already know, but those selections may not necessarily be the best fit [39]</li> <li>• Participants require guidance and structure for supporting them with the decision-making process [9]</li> </ul>



Peer/near-peer relationship	<ul style="list-style-type: none"> <li>• Offers advantages of mutual and comfortable relationships [31, 39]</li> <li>• Promotes collegiality and reduces isolation in a way that hierarchical mentoring may not [39]</li> <li>• Allows peers to tap into one another's' shared experiences [26]</li> </ul>	<ul style="list-style-type: none"> <li>• Peers may not wish to expose themselves or be vulnerable to one another [31, 39]</li> </ul>
Hierarchal relationship	<ul style="list-style-type: none"> <li>• More senior participants serve as role models, bringing a wealth of previous experience [16, 24]</li> <li>• More senior participants, serving as facilitators, may command more respect than peers [24]</li> </ul>	<ul style="list-style-type: none"> <li>• Position and level of authority/responsibility of more senior participant might impose a power imbalance in the relationship [33]</li> </ul>
<b>MODALITY</b>		
Face-to-face	<ul style="list-style-type: none"> <li>• Meeting face-to-face fosters connection and sense of shared values [8, 12]</li> <li>• Participants value and desire face-to-face events [46]</li> </ul>	<ul style="list-style-type: none"> <li>• Requires scheduling a common place and time</li> <li>• Requires travel for those who are geographically dispersed [22]</li> </ul>
Blended	<ul style="list-style-type: none"> <li>• Intentional arrangement of face-to-face and online activities can provide a scaffolded framework of engagement [16]</li> </ul>	<ul style="list-style-type: none"> <li>• Blended programs require careful design and integration of face-to-face and online components [8]</li> </ul>

	<ul style="list-style-type: none"> <li>• Blended elements can enhance face-to-face programs by providing different forms of engagement [40, 42]</li> </ul>	<ul style="list-style-type: none"> <li>• Face-to-face interactions can be less accessible given geographic distance, other work and personal obligations, illness, and disability [22]</li> </ul>
Online	<ul style="list-style-type: none"> <li>• Enables connection despite geographical separation [22, 42]</li> <li>• Provides a flexible format for engaging in program activities [22]</li> <li>• Online platforms enable quick and easy sharing of ideas and resources [42]</li> </ul>	<ul style="list-style-type: none"> <li>• To be successful, program design must engage avenues for building social connection and presence online (e.g., multimodal engagement to support non-verbal communication, social interactivity) [8, 12, 48]</li> <li>• Participants require technical and literacy skills for online, digital engagement; this can pose a learning curve for those unfamiliar with the technology [46]</li> <li>• Online participation may be underutilized or varied in frequency [8]</li> <li>• Discussions need careful moderating to ensure balance between focus on topic and social engagement. If discussions become too tangential on social interactions, participation can be negatively impacted [48]</li> </ul>

## APPENDIX G: CHARACTERISTICS OF EFFECTIVE MENTORS/ FACILITATORS

### Overall Personality Traits

Effective mentors/facilitators are supportive and friendly [36, 46] individuals who build safe and inclusive relationships with others [11, 12, 23, 26, 30, 31, 36, 48]. They openly share information and ideas [17, 22, 23, 40] in the spirit of reciprocity and draw on their knowledge, skills, and experiences to meaningfully contribute understanding through dialogue and discussion [36, 48]. They are attuned and empathetic to the needs of their collaborators and advocate for others when needed [39]. They are confident in their abilities [3] and dedicated to their work as a mentor/facilitator [39].

### Skills & Competencies

**Interpersonal skills:** ability to build trust, demonstrate empathy and build reciprocity [8, 17, 23, 30, 31, 36, 39, 48]

**Tutoring/coaching skills:** ability to listen actively, tailor support, and provide effective feedback [12, 13, 23, 31, 36, 42]

**Intercultural competencies:** ability to facilitate discussion among participants from various backgrounds and experiences; create opportunities for diverse groups to develop as a cohesive community [3, 22, 36]

**Facilitation/leadership skills:** ability to establish and maintain social and teacher presence, both online and face-to-face [21, 23, 35, 36, 39, 48]

### Knowledge & Expertise

**Pedagogical:** familiarity with pedagogy/andragogy, educational principles and strategies, instructional design, curriculum development and/or practitioner expertise [23, 36, 37]

**Disciplinary:** content and disciplinary culture expertise, knowledge of signature pedagogies [3, 13, 36, 37]

**Research:** expertise of various methodologies and practices [4, 6, 14, 36, 43]

**Institutional:** knowledge of policies, procedures, and available resources [30, 38]

**Ethical practice:** demonstrative of professional, teaching, and research ethics [36]

## APPENDIX H: TOPICS OF INTEREST

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It can be challenging to select topics to cover in a fellowship or mentorship program, especially given the wide array of options and the limits on participants' time.

Program developers, administrators, mentors, and/or facilitators should conduct needs assessments among prospective and current participants to identify areas of interest in which mentees and/or fellows desire information, hands-on experience, or other support [3, 21]. In the studies included in our analysis, authors and participants identified one or more of topics below as valuable. This list can be used to inform the development of a needs assessment survey or otherwise guide program developers and staff consideration of potential topics.

### **Potential teaching-focused topics of interest:**

- online teaching, online course design [8, 17, 20, 47, 53]
- technology use [4, 17, 20, 28, 34, 35, 53]
- curriculum development, course content development, instructional design [8, 10, 12, 14, 17, 18, 34, 38, 49]
- classroom management, facilitating groups [12, 18, 21, 24, 40, 46]
- evaluating and providing feedback to students [3, 4, 8, 12, 28, 37, 46]
- knowledge of student motivation and learning [9, 37]
- appreciating and accommodating students' individual differences [38, 40] and special needs [12]
- handling student issues [3, 8, 13, 21, 25, 34, 38, 42]
- setting appropriate boundaries [37]
- discipline-related teaching methods and tools, content-area knowledge [3, 5, 8, 22, 29]
- interprofessional competencies [18]
- Scholarship of Teaching and Learning, pedagogical research [6, 43]

**Other potential topics of interest:**

- project management, time management [8, 22, 46]
- leadership, program management [12, 16, 22, 46]
- research, writing, grant applications, dissemination of findings [4, 6, 12, 14, 22, 30, 32, 38, 39]
- career track and employment issues, systems navigation [8, 12, 13, 19, 30, 39]

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