Outlook

Re: UUPC agenda item - EECS faculty concerns regarding CHS 4623

From Andrew Terentis <terentis@fau.edu>
Date Mon 3/30/2026 8:18 AM
To Hari Kalva <hkalva@fau.edu>
Cc Donella Beckwith <dbeckwith@fau.edu>; Fred Bloetscher <fbloetsc@fau.edu>; Michael DeGiorgio <mdegiorg@fau.edu>; Maria Jennings <mjenning@fau.edu>; Korey Sorge <ksorge@fau.edu>; Dan Meeroff <dmeeroff@fau.edu>

Dear Hari,

Thank you for outlining EECS faculty's concerns regarding CHS 4623. I appreciate you sharing these perspectives.

Best,
Andrew

From: Hari Kalva <hkalva@fau.edu>
Sent: Sunday, March 29, 2026 10:21 PM
To: Andrew Terentis <terentis@fau.edu>
Cc: Donella Beckwith <dbeckwith@fau.edu>; Fred Bloetscher <fbloetsc@fau.edu>; Michael DeGiorgio <mdegiorg@fau.edu>; Maria Jennings <mjenning@fau.edu>; Korey Sorge <ksorge@fau.edu>; Dan Meeroff <dmeeroff@fau.edu>
Subject: UUPC agenda item - EECS faculty concerns regarding CHS 4623

Dear Andrew,
our faculty have serious concerns with CHS 4623 Introduction to Computational Methods for Life Sciences proposed by your department, and we do not support this course going forward.

The syllabus teaches Linux, shell scripting, Perl/Python programming, regular expressions, and data structures targeting students in the College of Science. The content is general-purpose programming instruction, not a chemistry course that applies computation to chemistry problems. Of the 14 weeks in the course, the large majority focus on general computational concepts (command-line operations, scripting fundamentals, data structures, pattern matching, and algorithms) with chemistry and life science data serving as exercise material rather than driving the course content.

This is further underscored by the absence of any chemistry prerequisites. A course genuinely rooted in chemistry would build on prior chemistry coursework. CHS 4623 requires none, because the core content is programming, not chemistry. The proposed course is structured as a service course teaching programming to Chemistry, Biology, Physics, Neuroscience, and others..

FAU has a clear and well-functioning practice for courses that serve students across multiple departments: the discipline that owns the subject matter teaches the course, regardless of who consumes it. Physics teaches Physics for Engineers. Mathematics teaches Probability and Statistics for

Engineers. No engineering department offers its own version of these courses, despite employing faculty who have the relevant background and expertise.

This proposal shifts programming and computational methods instruction away from Computer Science and into Chemistry. This is the core concern raised by EECS faculty. A course in programming and computational methods serving multiple disciplines should be offered by Computer Science, the department with disciplinary expertise in computing.

Of course, a course on chemistry applications using computational tools would be entirely appropriate for Chemistry to offer. We fully support Chemistry teaching courses such as "Chemical Computations" or "Molecular Sciences with Computational Tools" that focus on applying computation to chemistry and biochemistry. That is Chemistry's expertise.

If the College of Science needs a programming course to serve multiple science disciplines, EECS is prepared to develop one in consultation with Science, following the same service course model that Mathematics and Physics have long provided for Engineering.

We respectfully ask that you reconsider going forward with this course and work with us to develop and offer a course that can serve multiple disciplines in Science as you intended.

Best,
Hari Kalva

--
Hari Kalva, Ph.D., FNAI
Chair and Professor
Dept. of Electrical Engineering and Computer Science (eecs.fau.edu)
Director, Multimedia Systems Lab, (mlab.fau.edu)

Florida Atlantic University
Boca Raton, FL 33431

Consults for CHS 4623 Introduction to Coding for Life Science

Biology Consultation: APPROVED

Outlook

Re: Consultation on a new course: Introduction to Coding for Life Science (CHS 4623)

From Sarah Milton <smilton@fau.edu>
Date Thu 2026-03-12 1:20 PM
To Donella Beckwith <dbeckwith@fau.edu>

APPROVED

Aloha - Biology has no objection to this course.

Regards,

Dr. Sarah L. Milton
Professor and Chair
Department of Biological Sciences
FAU

From: Donella Beckwith <dbeckwith@fau.edu>
Sent: Tuesday, March 10, 2026 2:08 PM
To: Sarah Milton <smilton@fau.edu>
Subject: Consultation on a new course: Introduction to Coding for Life Science (CHS 4623)

Good afternoon.

I hope your Spring Break week is going well!

We would like to create a new course called **Introduction to Coding for Life Science (CHS 4623)**. As part of the process, we are looking for comments (and ideally statements of no conflict) from departments that may be affected. We felt that consultation with your department is probably appropriate considering this course teaches **Linux command line**, **shell scripting**, and **Perl** for the purpose of **analyzing large-scale ("Big Data") biological datasets**. CHS 4623 serves as a specialized niche for Life Sciences focusing more on the coding/scripting side but there may be technical and thematic overlaps with **BSC 4434C: Concepts in Bioinformatics**, which address analyzing sequence data and using data mining tools to discover gene targets—topics that are also included in the CHS 4623 syllabus.

Could you take a look at the attached proposal and let us know if you have questions or see conflicts?

Best,

Donella Beckwith, Ph.D.
Instructor,
Division of Research Associate, and
Undergraduate Programs Committee Chair

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Email: dbeckwith@fau.edu
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Department of Chemistry and Biochemistry
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777 Glades Road
Boca Raton, FL 33431

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Physics Consultation: APPROVED:Christopher Beetle APPROVED:Luc Wille

From: Donella Beckwith <dbeckwith@fau.edu>
Date: Thursday, March 19, 2026 at 10:53 AM
To: Christopher Beetle <cbeetle@fau.edu>
Cc: Andrew Terentis <terentis@fau.edu>, Luc Wille <willel@fau.edu>, Korey Sorge <ksorge@fau.edu>
Subject: Re: Consultation on a new course: Introduction to Coding for Life Science (CHS 4623)

Hi Christopher.

Thanks for reaching out.

The proposal package is submitted for the UUPC agenda due date today for the UUPC meeting on 3/30. It is not being addressed at Steering today.
I have attached the proposal package for your review.

Hope this helps and let me know if you need anything else.

Best,

Donella Beckwith, Ph.D.
Instructor, Division of Research Associate,
and Undergraduate Programs Committee Chair

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Department of Chemistry and Biochemistry
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777 Glades Road

Re: Consultation on a new ... | Re: Consultation o...

From: Donella Beckwith <dbeckwith@fau.edu>
Date: Tuesday, March 17, 2026 at 10:05 AM
To: Christopher Beetle <cbeetle@fau.edu>
Subject: Re: Consultation on a new course: Introduction to Coding for Life Science (CHS 4623)

Hi Chris.

I had my date/times noted incorrectly on my last email. Thank you for catching that!
This is for an undergraduate course also - didn't mean to cause any confusion.
I have attached the syllabus that was in the original email but possibly didn't transfer when Luc forwarded the email to you, in case you would like to review it.

Best,

Donella Beckwith, Ph.D.
Instructor, Division of Research Associate,
and Undergraduate Programs Committee Chair

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Boca Raton, FL 33431

Physics continued:

From: Christopher Beetle <cbeetle@fau.edu>
Sent: Tuesday, March 17, 2026 9:41 AM
To: Donella Beckwith <dbeckwith@fau.edu>; Luc Wille <willel@fau.edu>
Cc: Andrew Terentis <terentis@fau.edu>
Subject: Re: Consultation on a new course: Introduction to Coding for Life Science (CHS 4623)

APPROVED

Hi Donella:

Is the GPC meeting not at 2:00?

I haven't seen the syllabus for this course. It is not on the agenda for the 2:00 GPC meeting. But the course number suggests it is an undergraduate course, so perhaps it is meant to be on the agenda for the March 30 University *Undergraduate* Programs Committee meeting?

As a general principle, I would say that many courses around the university will have to touch on the practical tools you highlight as potential overlaps with our computational physics course. But we generally should view the subject of the course to be the application of the tools, rather than the tools themselves. In that spirit, the central aim of our course has been more directed at simulation than data analysis, so the overlap is extremely limited. We may want to offer a data analysis course in the future, centered probably on astronomical data sets, but are working out how to fit it into our schedule.

I think there are some excellent opportunities to explore collaborations around simulations in mathematical biology/biochemistry or multi-disciplinary approaches to data analysis problems, for example. While I would love to discuss that, I don't see why it should delay or impact in any way the proposed course described in your email, which sounds very good and timely.

Best,

Chris

From: Luc Wille <willel@fau.edu>
Sent: Tuesday, March 17, 2026 9:27 AM
To: Donella Beckwith <dbeckwith@fau.edu>
Cc: Christopher Beetle <cbeetle@fau.edu>
Subject: Re: Consultation on a new course: Introduction to Coding for Life Science (CHS 4623)

APPROVED

Hi Donella: I don't see any problem with your proposed course, so unless Chris has any objections, feel free to go ahead with our blessing. Thanks! --Luc

---

From: Donella Beckwith <dbeckwith@fau.edu>
Date: Tuesday, March 17, 2026 at 9:16 AM
To: Luc Wille <willel@fau.edu>
Cc: Christopher Beetle <cbeetle@fau.edu>
Subject: Re: Consultation on a new course: Introduction to Coding for Life Science (CHS 4623)

Good morning.

Our UGPC meeting is this morning at 10 am and I wanted to reach out one additional time to gain any input from your department on the new Coding Course we are proposing. I would truly appreciate any insight you may have.

Thank you again for all your support.

Best,

Donella Beckwith, Ph.D.
Instructor, Division of Research Associate,
and Undergraduate Programs Committee Chair

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Physics continued:

From: Donella Beckwith <dbeckwith@fau.edu>
Sent: Monday, March 16, 2026 10:20 AM
To: Luc Wille <willel@fau.edu>
Cc: Christopher Beetle <cbeetle@fau.edu>
Subject: Re: Consultation on a new course: Introduction to Coding for Life Science (CHS 4623)

Good morning.

Happy Monday!

I always try not to send faculty emails first thing on Mondays (especially after Spring Break), but I wanted to follow up on the consult email we corresponded on last week. Please let me know if either of you have an updates for me or if you need an assistance from me.

Thanks so much.

Best,

Donella Beckwith, Ph.D.
Instructor, Division of Research Associate,
and Undergraduate Programs Committee Chair

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Email: dbeckwith@fau.edu
Office: PS216
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From: Donella Beckwith <dbeckwith@fau.edu>
Sent: Tuesday, March 10, 2026 6:41 PM
To: Luc Wille <willel@fau.edu>
Cc: Christopher Beetle <cbeetle@fau.edu>
Subject: Re: Consultation on a new course: Introduction to Coding for Life Science (CHS 4623)

Hi Luc and Christopher.

Thank you!

Best,

Donella Beckwith, Ph.D.
Instructor, Division of Research Associate,
and Undergraduate Programs Committee Chair

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From: Luc Wille <willel@fau.edu>
Sent: Tuesday, March 10, 2026 3:31 PM
To: Donella Beckwith <dbeckwith@fau.edu>
Cc: Christopher Beetle <cbeetle@fau.edu>
Subject: Re: Consultation on a new course: Introduction to Coding for Life Science (CHS 4623)

Hi Donella: Thanks for your email. At first glance I see no problems, but I'd like to take a closer look in the next couple of days. I'm also cc'ing Chris Beetle, and will consult with him, since he is taking over as department chair starting May 1st.

All my best, --Luc

Physics continued:

From: Donella Beckwith <dbeckwith@fau.edu>
Sent: Tuesday, March 10, 2026 2:21 PM
To: Luc Wille <willel@fau.edu>
Subject: Consultation on a new course: Introduction to Coding for Life Science (CHS 4623)

Good afternoon.

I hope your Spring Break week is going well!

We would like to create a new course called **Introduction to Coding for Life Science (CHS 4623)**. As part of the process, we are looking for comments (and ideally statements of no conflict) from departments that may be affected. We felt that consultation with your department is probably appropriate considering this course teaches **Linux command line**, **shell scripting**, and **Perl** for the purpose of **analyzing large-scale ("Big Data") biological datasets**. CHS 4623 serves as a specialized niche for Life Sciences focusing more on the coding/scripting side but there may be technical or thematic overlaps with **PHZ 3151C: Computational Physics**, which may use similar scripting environments for modeling physical systems—topics that are also included in the CHS 4623 syllabus but are distinct for biophysics and structural biology components.

Could you take a look at the attached proposal and let us know if you have questions or see conflicts?

Best,

Donella Beckwith, Ph.D.
Instructor,
Division of Research Associate, and
Undergraduate Programs Committee Chair

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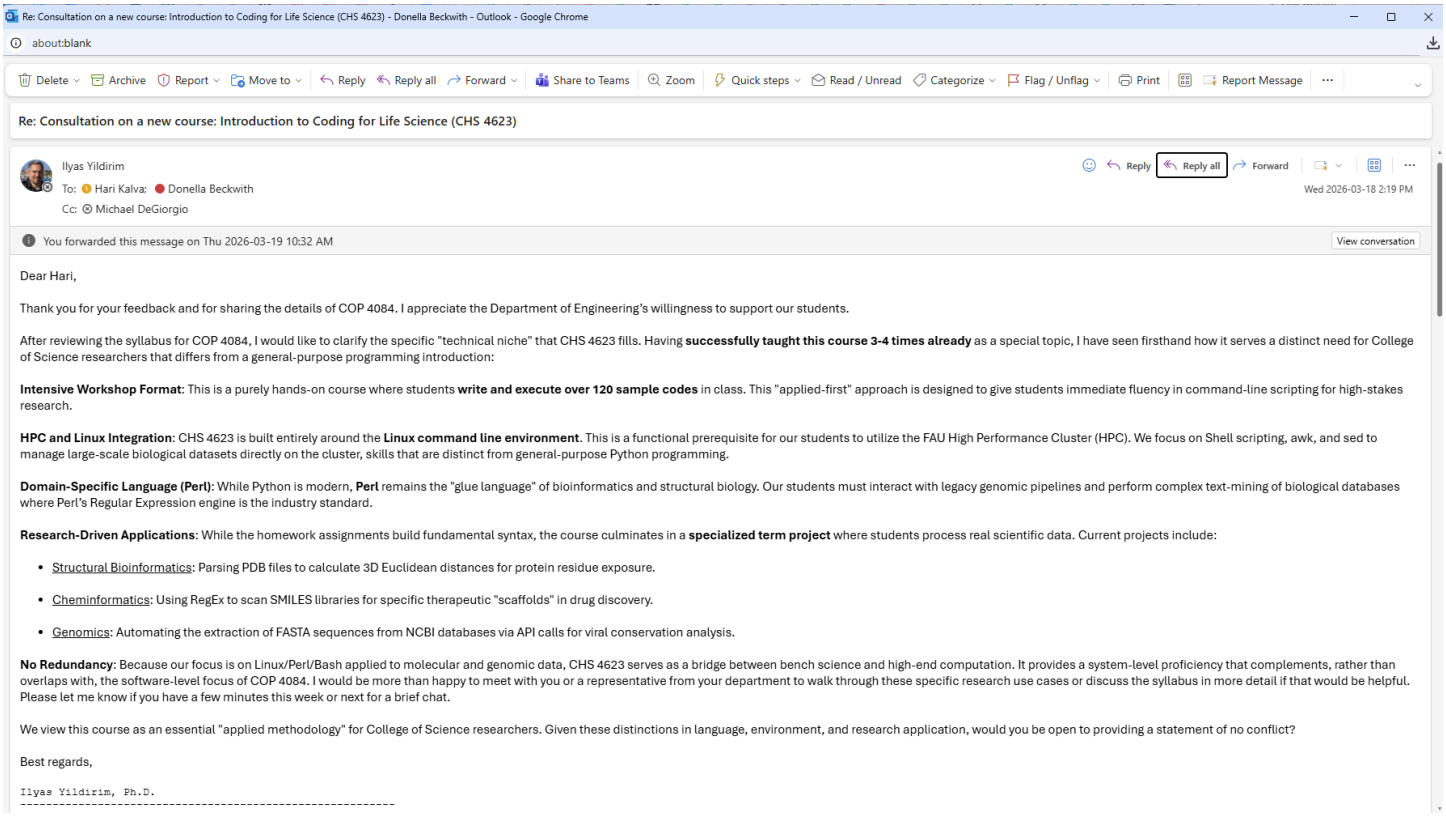
Engineering Consultation: REPLY (in consult)



Re: Consultation on a new course: Introduction to Coding for Life Science (CHS 4623) - Donella Beckwith - Outlook - Google Chrome

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Re: Consultation on a new course: Introduction to Coding for Life Science (CHS 4623)

Ilyas Yildirim
To: Hari Kalva; Donella Beckwith
Cc: Michael DeGiorgio

Reply | Reply all | Forward
Wed 2026-03-18 2:19 PM

You forwarded this message on Thu 2026-03-19 10:32 AM

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Dear Hari,

Thank you for your feedback and for sharing the details of COP 4084. I appreciate the Department of Engineering's willingness to support our students.

After reviewing the syllabus for COP 4084, I would like to clarify the specific "technical niche" that CHS 4623 fills. Having **successfully taught this course 3-4 times already** as a special topic, I have seen firsthand how it serves a distinct need for College of Science researchers that differs from a general-purpose programming introduction:

Intensive Workshop Format: This is a purely hands-on course where students **write and execute over 120 sample codes** in class. This "applied-first" approach is designed to give students immediate fluency in command-line scripting for high-stakes research.

HPC and Linux Integration: CHS 4623 is built entirely around the **Linux command line environment**. This is a functional prerequisite for our students to utilize the FAU High Performance Cluster (HPC). We focus on Shell scripting, awk, and sed to manage large-scale biological datasets directly on the cluster, skills that are distinct from general-purpose Python programming.

Domain-Specific Language (Perl): While Python is modern, **Perl** remains the "glue language" of bioinformatics and structural biology. Our students must interact with legacy genomic pipelines and perform complex text-mining of biological databases where Perl's Regular Expression engine is the industry standard.

Research-Driven Applications: While the homework assignments build fundamental syntax, the course culminates in a **specialized term project** where students process real scientific data. Current projects include:

- Structural Bioinformatics: Parsing PDB files to calculate 3D Euclidean distances for protein residue exposure.
- Cheminformatics: Using RegEx to scan SMILES libraries for specific therapeutic "scaffolds" in drug discovery.
- Genomics: Automating the extraction of FASTA sequences from NCBI databases via API calls for viral conservation analysis.

No Redundancy: Because our focus is on Linux/Perl/Bash applied to molecular and genomic data, CHS 4623 serves as a bridge between bench science and high-end computation. It provides a system-level proficiency that complements, rather than overlaps with, the software-level focus of COP 4084. I would be more than happy to meet with you or a representative from your department to walk through these specific research use cases or discuss the syllabus in more detail if that would be helpful. Please let me know if you have a few minutes this week or next for a brief chat.

We view this course as an essential "applied methodology" for College of Science researchers. Given these distinctions in language, environment, and research application, would you be open to providing a statement of no conflict?

Best regards,

Ilyas Yildirim, Ph.D.

Re: Consultation on a new course: Introduction to Coding for Life Science (CHS 4623) Summarize this email

Donella Beckwith
To: Hari Kalva

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Tue 2026-03-17 5:51 PM

No worries! Thank you!

I will discuss this with Andrew to determine how he would like to proceed.

Best,

Donella Beckwith, Ph.D.
Instructor, Division of Research Associate,
and Undergraduate Programs Committee Chair

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From: Hari Kalva <hkalva@fau.edu>
Sent: Tuesday, March 17, 2026 10:14 AM
To: Donella Beckwith <dbeckwith@fau.edu>
Subject: RE: Consultation on a new course: Introduction to Coding for Life Science (CHS 4623)

Hi Donella, sorry, just sent out. My response was sitting in my outbox. -hari

--
Hari Kalva, Ph.D.
eecs.fau.edu

RE: Consultation on a new course: Introduction to Coding for Life Science (CHS 4623) Summarize this email

HK HariKalva
To: Donella Beckwith
Cc: Michael DeGiorgio; Ilyas Yildirim
Reply Reply all Forward
Tue 2026-03-17 10:12 AM

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Hi Donella, we would be happy to teach if there is a need for a programming course for life sciences. We would gladly speak with Ilyas (listed on syllabus) to learn more about your needs. Perhaps your students could take a course such as Introduction to Programming for Non-majors (COP 4084), which covers Python and is a modern language that is extensively used in the sciences; we can discuss adding topics that you may need.

Thank You!
-hari

--
Hari Kalva, Ph.D.
eecs.fau.edu

Re: Consultation on a new course: Introduction to Coding for Life Science (CHS 4623) Summarize

Donella Beckwith
To: Hari Kalva
Reply Reply all Forward
Tue 2026-03-17 9:16 AM

Good morning.

Our UGPC meeting is this morning at 10 am and I wanted to reach out one additional time to gain any input from your department on the new Coding Course we are proposing. I would truly appreciate any insight you may have.

Thank you again for all your support.

Best,

Donella Beckwith, Ph.D.
Instructor, Division of Research Associate,
and Undergraduate Programs Committee Chair

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From: Donella Beckwith <dbeckwith@fau.edu>
Sent: Monday, March 16, 2026 10:28 AM
To: Hari Kalva <hkalva@fau.edu>
Subject: Re: Consultation on a new course: Introduction to Coding for Life Science (CHS 4623)

Good morning.

Happy Monday!

I always try not to send faculty emails first thing on Mondays (especially after Spring Break), but I wanted to follow up on the consult email from last week. Please let me know if you have any updates for me or if you need an assistance from me.

Thanks so much.

Best,

Donella Beckwith, Ph.D.
Instructor, Division of Research Associate,
and Undergraduate Programs Committee Chair

FLORIDA ATLANTIC UNIVERSITY

Email: dbeckwith@fau.edu
Office: PS216
Phone: 561.297.0046
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Department of Chemistry and Biochemistry
Florida Atlantic University

From: Donella Beckwith
Sent: Tuesday, March 10, 2026 1:57 PM
To: Hari Kalva <hkalva@fau.edu>
Subject: Consultation on a new course: Introduction to Coding for Life Science (CHS 4623)

Good afternoon.

I hope your Spring Break week is going well!

We would like to create a new course called **Introduction to Coding for Life Science (CHS 4623)**. As part of the process, we are looking for comments (and ideally statements of no conflict) from departments that may be affected. We felt that consultation with your department is probably appropriate considering this course teaches **Linux command line**, **shell scripting**, and **Perl** for the purpose of analyzing large-scale ("Big Data") biological datasets. CHS 4623 serves as a specialized niche for Life Sciences but there may be technical and thematic overlaps with **COP 2220 (Introduction to Programming in C)** and **COP 3014 (Foundations of Computer Science)**, which address fundamental programming concepts such as loops, data structures, and debugging—topics that are also included in the CHS 4623 syllabus.

Could you take a look at the attached proposal and let us know if you have questions or see conflicts?

Best,

Donella Beckwith, Ph.D.
Instructor,
Division of Research Associate, and
Undergraduate Programs Committee Chair

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