



Annual Reporting for Faculty Supported Research Centres and Networks

All Centres (provisional Centres; McGill Centres), Research groups and Networks that receive funding from the Faculty of Medicine are required to provide two components of reporting:

1. an Annual Report of Activities and Outcomes (see below),
2. a Financial Statement (see attached Excel document).

The reporting period is May 1, 2019 – April 30, 2020.

Deadline: Monday, May 25th, 2020 at 5pm

Please send both documents to Faculty of Medicine's Research Office (riac.med@mcgill.ca).

Continued support from the Faculty is contingent on:

1. the receipt of the reporting documents on time,
2. the evaluation of reported activities by the Faculty's Committee for Oversight of Research Units (CORU),
3. the availability of Faculty funds.

Your strong engagement in the Faculty's mission for continued research excellence and financial stewardship is truly appreciated.

Annual Report of Activities and Outcomes

Please respect the page limits, where indicated, or the report will be returned.

(The accepted font is Times New Roman or Calibri regular 11 pts)

1. Name of the Unit: **McGill University Centre for Structural Biology (CSB)**,
which also operates as FRQS-funded Centre de Recherche en Biologie Structurale (CRBS)

2. Director's contact information:

Director: Dr. Martin Schmeing

martin.schmeing@mcgill.ca

Phone: 514-398-2331

Associate Director: Dr. Alba Guarné

alba.guarne@mcgill.ca

Phone: 514-398-3265

Coordinator: Dr. Annick Guyot

csb.med@mcgill.ca

514-398-2293

3. If the Unit is a **Senate-approved** McGill Research Centre, indicate date of approval: **May 14th, 2014 (for CSB)**

4. Mission Statement of the Unit:

The mission of the CRBS is to exploit the power of structural biology and biophysics to produce the next wave of scientific breakthroughs in (i) determining the molecular basis of disease and treatments, and (ii) leveraging biophysical, chemical and synthetic biology for health. At the same time, the CRBS will train a new generation of structural biologists and biophysicists with outstanding expertise in using cross-disciplinary approaches for biomedical research to make structural biology and its many strengths accessible to the broader biomedical research and health community. The long-term objective of the CRBS is to create a premier centre of research in biophysics & structural biology for health that is truly world-class in accomplishments and reputation.

5. Number of Unit members: **39 regular members**

6. Number of members affiliated with McGill's Faculty of Medicine: **20 regular members**

7. **Unit's website:**

URL: **CSB:** <http://csbmcgill.ca>

CRBS: <http://crbsmcgill.ca>

Note: The website needs to feature the following:

- all sources of funding support (including the Faculty of Medicine's logo),
- the List of Members and their institutional affiliation with appropriate links,
- the scientific and outreach activities supported by the Unit
- the infrastructure and services available to the community
- all previous Annual Reports.

8. Summary of past year's **goals and objectives** of the Unit. (**limit: ½ page**)

- Use bullet points or numbered lists and be as quantitative as possible.
- Indicate unforeseen changes, opportunities or difficulties.

-Specific goals

-Final step of application to FRQ-S Programme de Subvention des Centres et Instituts de Recherche 2019-2020

-Increase membership

-Facilitate interactions between our members

-Continue the student-run seminar series

-Hold an annual symposium

-Increase outreach initiatives

-Oversee the operation of biophysical and structural biology equipment

-Implement a new system for booking and billing of equipment/services

9. **Major achievements** enabled by the support obtained from the Faculty. (**limit: 1 page**)

(see Appendix for suggested metrics)

Note: We care to evaluate how the Unit is doing as a whole greater than the sum of its talents. For this reason, do not list achievements from a single PI member of the Unit. Instead, please report only the achievements from the coordinated efforts of at least two PI members of the Unit.

- Use bullet points
- Insert an appendix for publications, grants, etc. if necessary.

-FRQ-S Programme de Subvention des Centres et Instituts de Recherche 2019-2020: awarded \$2M over 4 years, starting April 1, 2019 + 1 year, funded \$0.5M extension due to Covid19 pandemic. During the reporting period: final stage: site visit (competitive, May 2019); Decision was made in July 2019. Activities started in September 2019. **Appendix 1A: letter of award**

-CRBS Executive Committee Meetings: 3 meetings were held during the reporting period: on Aug. 23, 2019 (3:00pm-5:00pm, GCRC Room 601), on Dec. 16, 2019 (3:00pm-6:20pm, Bellini Bldg Room 132), on April 27, 2020 (1:30pm-4:30pm, via Zoom). See Agendas in **Appendix 1B**

-CRBS Infrastructure committee meeting was held on Dec. 10, 2019 (2:00pm-3:00pm, Bellini Room 530)

-Faculty recruitment: Maria Vera Ugalde: Department of Biochemistry, May 2019. Natalie Zeytuni: Department of Anatomy and Cell Biology. January 2020.

-1st CRBS annual symposium: held on June 17, 2019 at the McGill New Residence Hall. International Guest speakers: Lorena Beese, Dmitry Lyumkis. Local speakers: Charles Calmettes, Laurent Cappadocia, Jyh-Yeuan Lee, Javier Vargas. ~200 attendees. See poster, agenda and booklet in **Appendix 1C**

-CRBS seminar series: The CSB instituted a twice-monthly seminar series, starting Sept 2018. Organized by the CRBS Student consortium, each session either had two talks by CSB trainees, or one talk by a top regional structural biologist. ~50 attendees per session. See schedule in **Appendix 1D**. External Speaker: Janice Pata, University at Albany-SUNY, Oct. 25, 2019. See poster in **Appendix 1E**

- New technologies: Our first workshop on these series was offered by Refeyn on December 10-12, 2019. The workshop included background session on mass photometry and practical sessions on the capabilities of the technology. See poster in **Appendix 1F**

-CRBS Studentship award competition 2019-2020: held in the Fall, awards retroactive to Sept. 1, 2019. 28 applications received, 15 awards given, \$10,000 each, for 1 year (4 M.Sc. students including 1 co-supervised, 11 Ph.D. students)

-DFW 2019: 3 awarded through GPS

-Blue Sky Funding competition: held in January 2020: 10 applications received, 10 funded for a total of \$140,000.

-MI4-ECRF: 1 application co-sponsored by CRBS. CRBS contribution: \$40,000

-Infrastructure competition: 4 applications received, 2 awarded for a total of \$40,913.40

-Use of shared resources and facilities: Optimizing booking and billing of use of Centre biophysical equipment by (non-trivial) institution of the Faculty of Medicine – Core Services online calendar booking tool

-Quebec-Catalonia Network: between CRBS and the Structural Biology Unit of the Institute of Molecular Biology of Barcelona (SBU-IBMB), funded by Ministère des Relations Internationales et Francophonie du Québec

-NSERC-CREATE CRYOGEN LOI lead by Guarné, approved by McGill and will be submitted to NSERC on June 1st 2020

-Collaborations with other units: coordinate and co-hosts events with QLS (2 information webinars: Dec. 19, 2019 and Jan. 8, 2020 and 1 graduate recruitment event: Feb. 28, 2020), with MI4 (know-you-colleague event on Jan. 8, 2020)

-Outreach activities: CRBS Student Consortium 1-day CEGEP hosting (27 students from John Abbott College, Nov. 1, 2019,); John Abbott College has a Research Course where CEGEP students complete one of their courses in a research lab. Starting January 2020, 2 students hosted in CRBS labs (Guarné and Bui)

-Collaborations: 20 publications co-authored by at least 2 CRBS PIs: see **Appendix 1G**

-Communications: @crbsmcgill (twitter), <http://csbmgill.ca>, <http://crbsmcgill.ca>, www.mcgill.ca/lifesciencescomplex/facilities/nmr
https://www.facebook.com/csbscmcgill/?ref=py_c&__xts__

10. **New Members** who joined the Unit in the past year and their **institutional affiliation(s)**.

Name Last, First	Title PI, Staff or Trainee [Graduate student (GS) or post-doctoral fellow (PDF)]	Type of Membership Full, Associate	Affiliation(s)
Sheppard, Don	PI	Full	Fac Medicine; Immunology & Microbiology
Zeytuni, Natalie	PI	Full	Fac Medicine; Anatomy & Cell Biology
Ugalde, Maria Vera	PI	Full	Fac Medicine; Biochemistry
Vogel, Jackie	PI	Full	Fac Science; Biology

11. Members who have **left the Unit** over the reported year.

Name Last, First	Title PI, Staff or Trainee [Graduate student (GS) or post-doctoral fellow (PDF)]	Type of Membership Full, Associate	Affiliation(s)
Vargas, Javier	PI	Full	Medicine, Anatomy & Cell Biology

12. State how the current and forecasted activities of your Unit align with the Education or Research mission (Strategic Research Plan) of the Faculty of Medicine and/or other Faculties at McGill
(limit: ½ page):

-The CRBS supports numerous research activities that are central to the Faculty's mission of health science research and provide multidisciplinary training to McGill students.

-The CRBS held its 1st Annual Symposium at the McGill New Residence Hall on Monday, June 17, 2019 with ~200 attendees and 2 internationally renowned speakers. The CRBS also supports a student-run seminar series and several outreach activities towards Cegep students.

-The CRBS has one student stipend program that support the recruitment and retention of high-quality students at McGill.

-The CRBS has several initiatives to support research projects from CRBS members and infrastructure fundings.

-The CRBS also manages –or contributes to the management of– several equipment platforms in the Bellini, Strathcona, McIntyre and Otto Maas buildings. These platforms have contributed to the success of faculty members and the large number of high impact publications from CRBS.

13. Explain why support from the Faculty of Medicine continues to be crucial to the operations of the Unit
(limit: ½ page):

-The Faculty of Medicine support allowed us to leverage funding from FRQS (\$500K per year for 5 years, renewable) which leads to numerous CRBS activities but FoM funding is still crucial for all CRBS activities.

-The letters of support and funding from McGill, with FoM the biggest supporting body, were mentioned specifically in the review process and were clearly vital for securing this funding. FoM generously pledged to continue to fund at the \$50K level for the duration of the awarded FRQS Centre Grant.

-Specific initiatives that rely on FoM funding include the Annual CRBS Symposium, intensive bootcamp training programs for students, community outreach and networking events, and essential equipment upgrades and maintenance.

- FoM funding allows us to extend the number of opportunities for collaboration with other groups in the faculty (GCRC, MI4, etc)

-CRBS and its members will continue to win additional grants and apply for program funding and the FoM funding is required to support additional activities that make us competitive when applying for other sources of funding.

-CRBS holds competitive opportunities for fellowships, seed funding and infrastructure. We are always unbiased and equal-opportunity or all our members, but as our mandate is structural biology and biophysics for health, FoM members have been recipients of the majority of this funding.

-We are in the process of hiring a full time facilities manager scientist who will be available to facilitate biophysical experiments for CRBS members, FoM scientist and McGill colleagues. This will replace the piece-meal approach to support staff we currently have. Such a support staff is very difficult to recruit because it requires a very particular set of skills, and the willingness to use them for an academic salary. Remarkable, two candidates have those skills and are available. We require full funding from FRQS and FoM to support this.

-Note that although we won the Centre Grant in July, we only received the funds in September, but they were back dated to April. This explains why the funds were not drained at the end of this reporting period. The full funding of \$50K from FoM as pledged by FoM at the time of FRQS grant application is required to continue our operations and research facilitation.

14. List action items that the Unit has taken or will consider taking in the next year towards growth and sustainability of its operations (limit: ½ page)

- Use bullet points

-Maintaining CRBS equipment platforms

-Adding cutting-edge infrastructure as it is developed

- Increasing industrial use of CRBS equipment
- Partnering with companies for contracts
- Partnering with GCRC, MI4, QLS, IRCM, RQRM, RRSV, IRIC, PROTEO, CDQM in synergetic initiatives for greater reach and growth

15. Provide suggestions about how the Faculty could do better to support the Unit and research efforts in general (e.g., centralized data repositories, institutional data management plans, support for software developments, guidance for adopting open-science practices, simplification of administrative procedures, etc.) **(no page limit but please be specific and unleash your creativity!)**

The CRBS is very grateful for the support of the FOM.

Any simplification of administration procedures is always welcome.

One of our main goals is to strengthen ties with the medical community. Support to coordinate efforts with other units/groups (both for students and PIs) within the Faculty would be welcome.

In the attached (Excel) **Year-End Financial Report** please detail:

1. Expenditures of funding provided by the Faculty of Medicine and other sources, towards meeting the objectives of the Unit,
2. Any in-kind contributions provided to the Unit by other partners and sponsors,
3. Projected budget for the coming year (including request to the Faculty of Medicine).

Suggested Performance Indicators (non-exhaustive list)

Quantitative:

- Governance: provide details of management meetings. For example, membership, frequency, attendance, the nature of the meetings and the outcomes.
- Number of workshops, conferences or seminars conducted, number of attendees and target audience;
- Number of visiting scientists hosted by the Unit;
- Number of outreach activities (e.g., public lectures, including in schools, the industry and government agencies, press releases);
- Number of publications co-authored by at least 2 Unit PIs, and journal impact factors;
- Number of targeted activities:
 - involving research interactions for graduate and postgraduate students,
 - Industry stakeholder interactions;
- Number of web hits and articles downloaded;
- Outcomes of surveys of Unit members;
- Number of grants funded, with at least 2 Unit PIs as co-applicants;
- Prizes, special awards to member(s) as a result of Unit activities.

Qualitative:

- Activities/outcomes which may not have occurred without the Unit;
- Use of shared resources and facilities;
- Effectiveness of governance processes in place;
- Research building capacity, or removing impediments to research;
- Multi-disciplinary collaborations;
- Increased or new collaboration and partnerships as a result of Unit activities, and with different types of end users (e.g. industry, government and community groups);
- Workshops & meetings the Unit provided financial support for;
- Communication within/outside the Unit (e.g. email, newsletters, website, etc.);
- Level of engagement at seminars and workshops organized by the Unit;
- What exceptional successes, if any, have occurred during the reporting period;
- What disappointments, if any, occurred during the reporting period;
- How new skills have been acquired as a result of research technology;
- Emphasize collaborations between other Units at McGill and internationally;
- Development of tools, software, databases;
- **Emphasize all kinds of open-science efforts.**

Appendix 1B

Agenda: FRQS-CRBS Meeting – Aug 19, 2019

1. Attendance; name & position
2. Report on FRQS Centre competition
3. Incoming funds and promised funds
4. Summary of CRBS planned initiative
 - a. all initiative and committees responsible
 - b. specific initiatives towards time-sensitive initiatives
 - c. outreach
 - d. CRBS meeting 2020
5. Reaction to FRQS recommendations
7. New members
8. Other business
9. Adjournment

Agenda: FRQS-CRBS Executive Committee Meeting – Dec 16, 2019; 3:00pm-5:00pm Bellini Rm 132

1. Attendance; name & position
2. Approval of agenda
3. Approval of minutes of previous meeting of Aug. 23, 2019
4. Update from the Director
 - a. FRQS matters: Visit from FRQS (Oct. 22, 2019); use of CRBS name; FRQS Centres forum
 - b. New policy for the appointment and re-appointment of Research Centre Directors (FoM)
 - c. Creation of a Steering Committee
 - d. Software subscription for center (Adobe Creative Cloud, PyMOL) too expensive
5. Update from Training Committee and discussion of relevant upcoming initiatives
 - a. Fall studentships competition (2019-20) and looking forward to 2020-21
 - b. DFW awarded
 - c. Bootcamps and workshops: next summer; SFR/Refeyn workshop
 - d. FRQS trainee prize
 - e. Graduate Mobility Awards
 - f. Mentorships and professional development sessions
6. Update from Outreach Committee and discussion of relevant initiatives
 - a. Match-making initiative (MI4; future)
 - b. AMR centre & summer school
 - c. Catalunya collaboration
 - d. Social media: Progress on new website; twitter
 - e. Visit from JAC students on Nov. 1
 - f. Bench to bedside initiatives
7. Update on recruitment activities
 - a. Graduate recruitment event (joint with QLS)
 - b. Recruitment webinars (joint with QLS)
 - c. Research day GCRC 2021
8. Update from Symposium Committee
 - a. Organization of CRBS symposium 2020 (Monday, Nov. 9)
9. Update from Infrastructure Committee and discussion of relevant upcoming initiatives
 - a. Infrastructure committee meeting (Dec. 10, 2019)
 - b. New infrastructure competition
10. Update from the Blue Sky Committee
 - a. Blue sky seed funding
11. Update from the Student Consortium
 - a. Seminar series
 - b. Other proposed activities
12. Update from Admin Coordinator
 - a. Sustainability
13. Confirmation of New Members
 - a. New members: Don Sheppard, Natalie Zeytuni
14. Other business
15. Adjournment

Agenda: FRQS-CRBS Executive Committee Meeting #3
April 27, 2020; 2:00pm-4:00pm Zoom meeting

1. Attendance; name & position
2. Approval of agenda
3. Approval of minutes of previous meeting of Dec. 16, 2019
4. Update from the Director
 - a. Robert Zamboni-Drug Discovery Symposium – Youla – \$1,500 – travel expenses for outside speaker – in the Fall 2020
 - b. Retreat week – Bellairs
 - c. FRQS Centres forum, inc proposed budget increase
 - d. Registre des Centres (form to be filled by members with % in research)
 - e. Covid 19 update: 1 year extra funding + testing kit production
 - f. Budget
 - g. AI and FRQS Centres
 - h. Appointment of new Associate Director
 - i. Creation of a Steering Committee
 - j. Software subscription for center (PyMOL)
5. Update from Training Committee and discussion of relevant upcoming initiatives
 - a. Studentships competition 2020-21 – launched – deadline May 31
 - b. DFW – launched – deadline May 31
 - c. Travel award – None this year – Covid 19 – travel restriction, conferences cancelled
 - d. Bootcamps and workshops: next summer. Zoom event with Ted Fon and Ziv Gan-Or
 - e. FRQS trainee prize
 - f. Graduate Mobility Awards
 - g. Mentorships and professional development sessions
6. Update from Outreach Committee and discussion of relevant initiatives
 - a. Match-making initiative (PROTEO – June 2020?)
 - b. AMR centre & summer school
 - c. Catalunya collaboration
 - d. Social media: Progress on new website; twitter
 - e. Internship from JAC students in the lab
 - f. Bench to bedside initiatives
 - g. Eagle Spirit Science Futures Camp – canceled this year (Covid 19)
7. Update on recruitment activities
 - a. Graduate recruitment event (joint with QLS, January 28 2020)
 - b. Recruitment webinars (joint with QLS, January 2020)
 - c. Research day GCRC 2021
8. Update from Symposium Committee
 - a. Organization of CRBS symposium 2020 (Monday, Nov. 9)

Agenda: FRQS-CRBS Executive Committee Meeting #3

April 27, 2020; 2:00pm-4:00pm Zoom meeting

9. Update from Infrastructure Committee and discussion of relevant upcoming initiatives
 - a. Infrastructure committee meeting (Dec. 10, 2019)
 - b. Infrastructure competition: 4 applications received, 2 awarded (Brouhard, Wiseman)
10. Update from the Blue Sky Committee
 - a. Blue sky seed funding: 10 applications received, 10 funded
11. Update from the Student Consortium
 - a. Seminar series – via Zoom
 - b. Other proposed activities
12. Update from Admin Coordinator
 - a. Sustainability
13. New Members
 - a. New members: Maria Vera Ugalde, Jackie Vogel
 - b. Executive membership
14. Other business
15. Adjournment

Appendix 1D
**Centre de Recherche en Biologie Structurale
2019-2020 Seminar Series**

2nd and 4th Friday of every month
 Room 501 (Karp), Goodman Cancer Research Center
 12:45pm – 1:30pm
 Please join us for pizza in front of Karp at 12:30pm
 No food or drinks are allowed inside the lecture room

Date	Speaker	Lab/ University
Sep 13	Cindy Shaheen	Sabrina Leslie
	Huan Zheng	Rodrigo Reyes
Sep 27	Valeria Shkuratova	Kalle Gehring
	Leah Pollet	Brandon Xia
Oct 11	Ruben Sanchez Garcia	Javier Vargas
	Alexei Gorelik	Bhushan Nagar
Oct 25	Janice Pata	University of Albany
Nov 8	Daniel Dai	Khanh Huy Bui
	Serge Hirka	Maureen McKeague
Nov 22	Ahmad Khalifa	Khanh Huy Bui
	Yeganeh Habibi	Christopher Thibodeaux
Dec 6	Julie Ducharme	Karine Auclair
	Mohamed Ghadie	Brandon Xia
Jan 10	Shreya Krishnan	Alba Guarné
	Roberto El Khoury Sejnau	Masad Damha
Feb 14	Daniel Therien	Karine Auclair
	Simon Veyron	Jean-François Trempe
Feb 28	Kamila Mustafina	Paul Wiseman
	Albert Kamanzi	Sabrina Leslie
Apr 17	Sophie Lu	Jean-François Trempe
	Dushyant Jahagirdar	Joaquin Ortega
Jun 19	Natalie Zeytuni	McGill University

Note: The seminars on April 17 and June 19 were held via Zoom due to the Covid-19 pandemic.



SPECIAL SEMINAR ANNOUNCEMENT

Janice Pata, Ph.D.

**Associate Professor
Department of Biomedical
Sciences, University at Albany-
SUNY**



***Title:* DNA Polymerases, Mutations, and the Evolution of Antibiotic Resistance**

Complete genome duplication requires the activity of multiple DNA polymerases that are involved in replication, repair and DNA damage tolerance. Our research is focused on the structures and mechanisms of the essential C-family replicative DNA polymerases in *Staphylococcus aureus* and the error-prone Y-family translesion DNA polymerases, and on how mutations are generated that give rise to antibiotic resistance in *S. aureus*.

**Friday, October 25th, 2019.
12:45 pm Karp (501) auditorium
Goodman Cancer Centre.**

**Pizza will be served before the seminar at 12:30 pm.
Visit @csbscmcgill for more details.**

CSB



Centre
for
Structural
Biology

SPECIAL SEMINAR ANNOUNCEMENT

Janice Pata, Ph.D.

**Associate Professor
Department of Biomedical
Sciences, University at Albany-
SUNY**



***Title:* DNA Polymerases, Mutations, and the Evolution of
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**Friday, October 25th, 2019.
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**Pizza will be served before the seminar at 12:30 pm.
Visit [@csbscmcgill](https://twitter.com/csbscmcgill) for more details.**

Mass Photometry - Technology Workshop



Appendix 1F



RE•FEYN
WEIGHING MOLECULES WITH LIGHT

December 10–12 | Bellini Life Science Complex, McGill University

SEMINAR PRESENTATION:

DEC. 10TH, 10AM-11AM, Bellini 430

“Mass Photometry – a new way to study biomolecules”



Dr. Gabriella Kiss

REGISTER FOR A FREE 1 HOUR DEMONSTRATION AND SAMPLE TEST:

<https://sfr-massphotometry-workshop-montreal.eventbrite.ca>

For questions, please contact: David Polcari (david@sfr.ca)



Refeyn One^{MP} Benchtop Mass Photometer

Appendix 1G

Publications co-authored

1. Tubulin lattice in cilia is in a stressed form regulated by microtubule inner proteins.
Ichikawa M, Khalifa AAZ, Kubo S, Dai D, Basu K, Maghrebi MAF, **Vargas J, Bui KH.**
Proc Natl Acad Sci U S A. 2019 Oct 1;116(40):19930-19938. doi: 10.1073/pnas.1911191116.
Impact Factor: 9.5804
2. The inner junction complex of the cilia is an interaction hub that involves tubulin post-translational modifications.
Khalifa AAZ, Ichikawa M, Dai D, Kubo S, Black CS, Peri K, McAlear TS, Veyron S, Yang SK, **Vargas J, Bechstedt S, Trempe JF, Bui KH.**
Elife. 2020 Jan 17;9:e52760. doi: 10.7554/eLife.52760.
Impact Factor: 7.551
3. Advancing Wireframe DNA Nanostructures Using Single-Molecule Fluorescence Microscopy Techniques.
Platnich CM, Hariri AA, **Sleiman HF, Cosa G.**
Acc Chem Res. 2019 Nov 19;52(11):3199-3210. doi: 10.1021/acs.accounts.9b00424.
Impact Factor: 21.661
4. Cryo-electron microscopy structures of ArnA, a key enzyme for polymyxin resistance, revealed unexpected oligomerizations and domain movements.
Yang M, Chen YS, Ichikawa M, Calles-Garcia D, Basu K, Fakhri R, **Bui KH, Gehring K.**
J Struct Biol. 2019 Oct 1;208(1):43-50. doi: 10.1016/j.jsb.2019.07.009.
Impact Factor: 3.754
5. High-throughput phenotyping of heteromeric human ether-à-go-go-related gene potassium channel variants can discriminate pathogenic from rare benign variants.
Ng CA, Perry MD, Liang W, Smith NJ, Foo B, **Shrier A, Lukacs GL,** Hill AP, Vandenberg JI.
Heart Rhythm. 2020 Mar;17(3):492-500. doi: 10.1016/j.hrthm.2019.09.020.
Impact Factor: 5.225
6. Inhibition and Activation of Kinases by Reaction Products: A Reporter-Free Assay.
Wang Y, Guan J, Di Trani JM, **Auclair K, Mittermaier AK.**
Anal Chem. 2019 Sep 17;91(18):11803-11811. doi: 10.1021/acs.analchem.9b02456.
Impact Factor: 6.350
7. Amplified Self-Immolative Release of Small Molecules by Spatial Isolation of Reactive Groups on DNA-Minimal Architectures.
Sleiman HF, Prinzen A, Saliba D, Hennecker C, Tuan T, **Mittermaier A.**
Angew Chem Int Ed Engl. 2020 Apr 11. doi: 10.1002/anie.202001123.
Impact Factor: 12.257
8. Side chain electrostatic interactions and pH-dependent expansion of the intrinsically disordered, highly acidic carboxyl-terminus of γ -tubulin.
Payliss BJ, **Vogel J, Mittermaier AK.**
Protein Sci. 2019 Jun;28(6):1095-1105. doi: 10.1002/pro.3618.
Impact Factor: 2.42

9. Streptomyces IHF uses multiple interfaces to bind DNA.
Nanji T, Gehrke EJ, Shen Y, Gloyd M, Zhang X, Firby CD, Huynh A, Razi A, **Ortega J**, Elliot MA, **Guarné A**.
Biochim Biophys Acta Gen Subj. 2019 Nov;1863(11):129405. doi: 10.1016/j.bbagen.2019.07.014.
Impact Factor: 3.681
10. Structural consequences of the interaction of RbgA with a 50S ribosomal subunit assembly intermediate.
Seffouh A, Jain N, Jahagirdar D, Basu K, Razi A, Ni X, **Guarné A**, Britton RA, **Ortega J**.
Nucleic Acids Res. 2019 Nov 4;47(19):10414-10425. doi: 10.1093/nar/gkz770.
Impact Factor: 11.147
11. Role of Era in assembly and homeostasis of the ribosomal small subunit.
Razi A, Davis JH, Hao Y, Jahagirdar D, Thurlow B, Basu K, Jain N, Gomez-Blanco J, Britton RA, **Vargas J**, **Guarné A**, Woodson SA, Williamson JR, **Ortega J**.
Nucleic Acids Res. 2019 Sep 5;47(15):8301-8317. doi: 10.1093/nar/gkz571.
Impact Factor: 11.147
12. Structures of a dimodular nonribosomal peptide synthetase reveal conformational flexibility.
Reimer JM, Eivaskhani M, Harb I, **Guarné A**, Weigt M, **Schmeing TM**.
Science. 2019 Nov 8;366(6466):eaaw4388. doi: 10.1126/science.aaw4388.
Impact Factor: 20.570
13. The Organizing Principles of Eukaryotic Ribosome Recruitment.
Pelletier J, **Sonenberg N**.
Annu Rev Biochem. 2019 Jun 20;88:307-335. doi: 10.1146/annurev-biochem-013118-111042.
Impact Factor: 26.922
14. Cystic Fibrosis: Proteostatic correctors of CFTR trafficking and alternative therapeutic targets.
Hanrahan JW, Sato Y, Carlile GW, Jansen G, **Young JC**, **Thomas DY**.
Expert Opin Ther Targets. 2019 Aug;23(8):711-724. doi: 10.1080/14728222.2019.1628948.
Impact Factor: 4.621
15. Chirality-Driven Mode of Binding of α -Aminophosphonic Acid-Based Allosteric Inhibitors of the Human Farnesyl Pyrophosphate Synthase (hFPPS).
Feng Y, Park J, Li SG, Boutin R, Viereck P, Schilling MA, **Berghuis AM**, **Tsantrizos YS**.
J Med Chem. 2019 Nov 14;62(21):9691-9702. doi: 10.1021/acs.jmedchem.9b01104.
Impact Factor: 6.054
16. A robust approach to ab initio cryo-electron microscopy initial volume determination.
Gomez-Blanco J, Kaur S, **Ortega J**, **Vargas J**.
J Struct Biol. 2019 Dec 1;208(3):107397. doi: 10.1016/j.jsb.2019.09.014.
Impact Factor: 3.754
17. Successive Kinesin-5 Microtubule Crosslinking and Sliding Promote Fast, Irreversible Formation of a Stereotyped Bipolar Spindle.
Leary A, Sim S, Nazarova E, Shulist K, Genthial R, Yang SK, **Bui KH**, Francois P, **Vogel J**.

Curr Biol. 2019 Nov 18;29(22):3825-3837.e3. doi: 10.1016/j.cub.2019.09.030.

Impact Factor: 9.193

18. A High-Throughput Image Correlation Method for Rapid Analysis of Fluorophore Photoblinking and Photobleaching Rates.

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