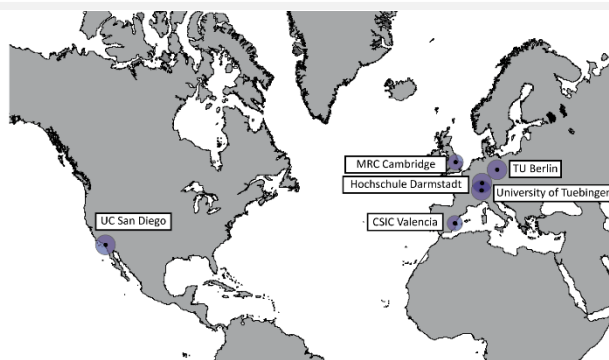


Curriculum Vitae

Dr. rer. nat. Daniel Petras

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Functional Metabolomics Lab
University of Tuebingen
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Research Interests

Mass Spectrometry, Natural Products, Chemical Ecology, Microbial Ecology, Environmental Chemistry

Background

I am a biochemist with background in bioanalytical chemistry and natural product chemistry. I am fascinated by the chemical diversity of nature and how small molecules and peptides modulate biology. My research focuses on understanding chemical exchange in microbial communities and host-microbe interactions.

Education

- 02/2016** PhD in **Biochemistry (*summa cum laude*)**
Technische Universität Berlin, Germany
- 03/2012** Diploma (MS) in **Biotechnology**
Hochschule Darmstadt, Germany and Universidad Politécnica de Valencia, Spain
- 07/2005** High School Diploma and apprenticeship as Laboratory Assistant for **Chemistry**
BBS Naturwissenschaften, Ludwigshafen, Germany

Research Positions

- Since 2021** **Junior Research Group Leader**
University of Tuebingen, Germany
- 2016-2021** **Postdoctoral Researcher**
University of California San Diego, USA
- 2012-2016** **PhD Student**
Technical University Berlin, Germany
- 2008-2012** **Undergraduate Researcher**
CSIC Institute of Biomedicine Valencia, Spain (18 months)
University of Applied Science Darmstadt, Germany (3 years)
Medical Research Council HNR., Cambridge, UK (6 months)
- 2005-2008** **Technical Laboratory Assistant**
Graffinity Pharmaceuticals GmbH, Heidelberg, Germany

Scientific Mentors

- Postdoc** Prof. Pieter Dorrestein (University of California San Diego)
- PhD** Prof. Roderich Suessmuth (Technical University Berlin)
- Master** Prof. Juan Calvete (CSIC Institute of Biomedicine Valencia)

Scientific Outreach

- 2018-2019** **Volunteering at Pier Walk, Science on the Beach and CAICE outreach events San Diego**
Monthly outreach event at the Scripps pier with tours and presentations for the public.
- 2015-2016** **Volunteering at Long Night of the Sciences Berlin (Lange Nacht der Wissenschaft)**
Annual event where scientific institutes in Berlin open their doors for the public.

Scientific Service and Memberships

- Reviewer for:** National Science Foundation, German Research Foundation, Dutch Research Foundation, Analytical Chemistry, Journal of Proteome Research, Journal of Proteomics, Rapid Communications in Mass Spectrometry, Environmental Science and Technology, Chemosphere, Communications Earth and Environment, Frontiers in Marine Science, Organic Geochemistry, Nature Communications, Science Advances, MSystems, PeerJ, ACS Omega
- Since 2021** Associate Editorial Board Member, Analytical Science Advances
- Since 2018** Member of the American Society of Mass Spectrometry (ASMS)
- Since 2016** Member of the Editorial Board Member, Journal of Proteomics
- Since 2013** Member of the German Association on Proteome Research (DGPF)
- Since 2013** Member of the German Society for Mass Spectrometry (DGMS)
- Since 2012** Member of the German Chemical Society (GDCh)

Research Support

Current

2. German Research Foundation, Collaborative Research Center TRR CellMap (2022-2023, Co-PI, \$120K)
1. German Research Foundation, CMFI Young Investigator Grant, (2021-2025, PI, \$1M)

Pending

2. German Research Foundation, Collaborative Research Center SFB (2023-2027, Co-PI, \$600K)
1. Horizon Europe Framework Programme, Collaborative Research Grant (2023-2027, Co-PI, \$250K)

Past

5. German Research Foundation, Large Equipment Grant (2021, PI, \$600K)
4. EU COST Action, EpiLipiNet, Short Term Scientific Mission (2021, PI, \$2K)
3. German Research Foundation, Postdoctoral Research Grant (2017-2019, PI, \$100K)
2. DAAD Erasmus Placement at CSIC Institute for Biomedicine Valencia (2011-2012, Student, \$6K)
1. DAAD Erasmus at Universidad Politécnica de Valencia (2009-2010, Student, \$4K)

Scientific Awards

1. University of California San Diego Postdoctoral Research Award (2017)

Important Recent Publications

*denotes equal contribution

denotes corresponding author

- 6. Native Metabolomics Identifies the Rivulariapeptolide Family of Protease Inhibitors**
Reher R, T Aron AT, Fajtová P, Liu C, Ben Shalom IY, Bittremieux W, Wang M, Matos-Hernandez ML, Alexander KL, Caro-Diaz EJ, Naman CB, Dorrestein PC, O'Donoghue AJ, Gerwick WH[#], **Petras D[#]**
Under review (2nd round, Nature Communications), preprint:
[bioRxiv.org/content/10.1101/2021.09.03.458897v1](https://doi.org/10.1101/2021.09.03.458897v1)
- 5. GNPS Dashboard: collaborative exploration of mass spectrometry data in the web browser**
Petras D, Phelan VV, Acharya DD, Allen AE, Aron AT, Bandeira N, Belle-Oudry D, Boecker S, Bowen BP, Cummings DA, Deutsch JM, Fahy E, Garg N, Gregor R, Handelsman J, Navarro-Hoyos M, Jarmusch AK, Jarmusch SA, Louie KB, Maloney KN, Marty MT, Meijler MM, Mizrahi I, Molina-Santiago C, Neve RL, Northen TR, Panitchpakdi M, Pullman B, Puri AW, Schmid R, Subramaniam S, Thukral M, Vasquez-Castro F, Dorrestein PC, Wang M[#]
Nature Methods, 2021, doi.org/10.1038/s41592-021-01339-5
- 4. Native Electrospray-based Metabolomics Enables the Detection of Metal-binding Compounds**
Aron A, ^{*}**Petras D^{*}**, Schmid R, Gauglitz JM, Büttel I, Antelo L, Zhi H, Saak CC, Malarney KP, Thines E, Dutton RJ, Raffatellu M, Dorrestein PC[#]
Nature Chemistry, 2021, doi.org/10.1038/s41557-021-00803-1
- 3. Ion identity molecular networking for mass spectrometry-based metabolomics in the GNPS environment**
Schmid R^{*}, **Petras D^{*}**, Nothias L^{*}, Wang M, Aron AT, Jagels A, Tsugawa H, Rainer J, Garcia-Aloy M, Dührkop K, Korf A, Pluskal T, Kameník Z, Jarmusch AK, Caraballo-Rodríguez AM, Weldon K, Nothias-Esposito M, Aksenov AA, Bauermeister A, Albarracin Orio A, Grundmann CO, Vargas F, Koester I, Gauglitz JM, Gentry EC, Kalinina SA, Pendergraft MA, Panitchpakdi MW, Tehan R, Le Gouellec A, Aleti G, Mannocho Russo H, Arndt B, Hübner F, Hayen H, Zhi H, Raffatellu M, Prather KA, Aluwihare LI, Böcker S, McPhail KL, Humpf H, Karst U, Dorrestein PC[#]
Nature Communications, 2021, 12:3832, doi.org/10.1038/s41467-021-2395
- 2. Convergent Evolution of Pain-Inducing Defensive Venom Components in Spitting Cobras**
Kazandjian TD^{*}, **Petras D^{*}**, Robinson SD^{*}, van Thiel J, Greene HW, Arbuckle K, Barlow A, Carter DA, Wouters RM, Whiteley G, Wagstaff SC, Arias AS, Albulescu L-O, von Plettenberg Laing A, Hall C, Heap A, Penrhyn-Lowe S, McCabe CV, Ainsworth S, da Silva RR, Dorrestein PC, Richardson MK, Gutiérrez JM, Calvete JJ, Harrison RA, Vetter I, Undheim EAB, Wüster W, Casewell NR[#]
Science, 2021, 6527, 386-390
- 1. Feature-Based Molecular Networking in the GNPS Analysis Environment**
Nothias LF^{*}, **Petras D^{*}**, Schmid R^{*}, Dührkop K, Rainer J, Sarvepalli A, Protsyuk I, Ernst M, Tsugawa H, Aicheler F, Aksenov A, Alka O, Allard P, Cachet X, Barsch A, Caraballo-Rodríguez AM, Da Silva RR, Dang T, Nothias-Esposito M, Garg N, Gauglitz JM, Isaac G, Jarmusch AK, Kameník Z, Kang KB, Kessler N, Koester I, Le Gouellec A, Ludwig M, Martin C, McCall L, McSayles J, Meyer SW, Mohimani H, Morsy M, Moyne O, Neumann S, Neuweger H, Paolini J, Phelan VV, Pluskal T, Rogers S, Shrestha B, van der Hoft JJ, Vargas F, Weldon KC, Witting M, Yang H, Zhang Z, Zubeif F, Kohlbacher O, Böcker S, Alexandrov T, Bandeira N, Wang M[#], Dorrestein PC[#],
Nature Methods, 2020, 17, 905–908

All Publications

*denotes equal contribution

denotes corresponding author

Preprints

- 69.** **Spatial Venomics - Cobra Venom System Reveals Spatial Differentiation of Snake Toxins by Mass Spectrometry Imaging**
(PI)
Hemple BF*[#], Damm M*, **Petras D**, Kazandjian TD, Szentiks CA, Fritsch G, Nebrich G, Casewell NR, Klein O, Süßmuth RD[#]
Under Review (Angewandte Chemie), preprint: doi.org/10.1101/2022.01.31.478453
- 68.** **Native Metabolomics Identifies the Rivulariapeptolide Family of Protease Inhibitors**
(PI)
Reher R, T Aron AT, Fajtová P, Liu C, Ben Shalom IY, Bittremieux W, Wang M, Matos-Hernandez ML, Alexander KL, Caro-Diaz EJ, Naman CB, Dorrestein PC, O'Donoghue AJ, Gerwick WH[#], **Petras D**[#]
Under review (2nd round, Nature Communications), preprint: biorxiv.org/content/10.1101/2021.09.03.458897v1
- 67.** **Mass difference matching crystallizes hidden molecular structures of dissolved organic matter from ultrahigh-resolution tandem mass spectra**
(Postdoc)
Simon C[#], **Petras D**, Roth VN, Dührkop K, Böcker S, Dorrestein PC, Gleixner G[#]
Under revision (Environmental Science and Technology), preprint: 10.33774/chemrxiv-2021-cxxt1
- 66.** **Multi-omics profiling of Earth's biomes reveals that microbial and metabolite composition are shaped by the environment**
(Postdoc)
Shaffer JP, Nothias LF, Thompson LR, Sanders JG, Salido RA, Couvillion SP, Brejnrod AD, Huang S, Franck Lejzerowicz F, Lutz HL, Zhu Q, Martino C, Morton JT, Karthikeyan S, Nothias-Esposito M, Dührkop K, Böcker S, Kim H, Aksenov AA, Bittremieux W, Minich JJ, Marotz C, Bryant MM, Sanders K, Schwartz T, Humphrey G, Vásquez-Baeza Y, Tripathi A, Parida L, Paola Carrieri A, Haiminen N, Beck KL, Das P, González A, McDonald D, Karst SM, Albertsen M, Ackermann G, DeReus J, Thomas T, **Petras D**, Shade A, Stegen J, Song SJ, Metz TO, Swafford AD, Dorrestein PC, Jansson JK, Gilbert JA, Knight R[#]
Under review (2nd round, Nature Microbiology), preprint: biorxiv.org/content/10.1101/2021.06.07.447311v1
- 65.** **Mutualistic interactions between *B. subtilis* and seeds dictate plant development**
(Postdoc)
Berlanga-Clavero MV, Molina-Santiago C, Caraballo-Rodríguez AM, **Petras D**, Díaz-Martínez L, Pérez-García A, De Vicente A, Dorrestein PC, Romero D
Under review (2nd round, Nature Microbiology), preprint: biorxiv.org/content/10.1101/2021.06.07.447311v1
- 64.** **A mammalian commensal of the oropharyngealcavity produces antibiotic and antiviral valinomycinin vivo**
(Postdoc)
Gaiser R, Ferrando M, Oddo A, Pereira M, Guan X, Molist F, Fernandez-Gutierrez M, Fredriksen S, Bryant C, **Petras D**, Dorrestein P, Boeren S, Medema M, Hill C, Kleerebezem M, Van Baarlen P, Wells J[#]
Under review (2nd round, Nature Communications), preprint: 10.21203/rs.3.rs-126949/v1

Peer-Reviewed Articles

2022

- 63.** **Distinguishing the molecular diversity and energetic potential of exometabolomes produced by macroalgae and reef building corals**
(Postdoc)
Wegley Kelly L*, Nelson CE*, **Petras D**, Koester I, Quinlan ZA, Arts MGI, Nothias LF, Comstock J, White BM, Hopmans EC, Van Duyl FV, Carlson CA, Aluwihare LI, Dorrestein PC and Haas AF[#]
Proceedings of the National Academy of Sciences, 2022, doi.org/10.1073/pnas.2110283119
- 62.** **The Sea Spray Chemistry and Particle Evolution Study (SeaSCAPE): Overview and Experimental Methods**
(Postdoc)
Sauer J*, Mayer K*, Lee C, M Alves M, Amiri S, Bahaveolos C, Barnes E, Crocker D, Dinasquet J, Garofalo L, Kaluarachchi C, Dang D, Kilgour D, Mael L, Mitts B, Moon D, Morris C, Moore A, Ni CM, Pendergraft M, **Petras D**, Simpson R, Smith S, Tumminello P, Walker J, Demott P, Farmer D, Goldstein A, Grassian V, Jaffe J, Malfatti F, Martz T, Slade J, Tivanski A, Bertram T, Cappa C, Prather K[#]
Environmental Science: Processes & Impacts, 2022, doi.org/10.1039/d1em00260k

- 61.** **Diversity, metabolomics profiling and pharmacological potential of actinomycetes isolated from Estremadura Spur pockmarks (Portugal)**
(PI)
Pinto-Almeida A, Bauermeister A, Luppino L, Grilo IR, Oliveira J, Sousa JR, **Petras D**, Rodrigues CF, Prieto-Davó A, Tasdemir D, Sobral RG, Gaudêncio SP[#]
Marine Drugs, 2022, 20(1), 21; doi.org/10.3390/md20010021
- 2021**
- 60.** **Assessment of PPL solid phase extraction and non-targeted tandem mass spectrometry for the analysis of xenobiotics in seawater**
(PI)
Cancelada L*, Torres RR*, Garrafa Luna J, Dorrestein PC, Aluwihare L, Prather K, **Petras D**[#]
Limnology and Oceanography: Methods, 2021, doi.org/10.1002/lom3.10470
- 59.** **GNPS Dashboard: collaborative exploration of mass spectrometry data in the web browser**
(Postdoc)
Petras D, Phelan VV, Acharya DD, Allen AE, Aron AT, Bandeira N, Belle-Oudry D, Boecker S, Bowen BP, Cummings DA, Deutsch JM, Fahy E, Garg N, Gregor R, Handelsman J, Navarro-Hoyos M, Jarmusch AK, Jarmusch SA, Louie KB, Maloney KN, Marty MT, Meijler MM, Mizrahi I, Molina-Santiago C, Neve RL, Northen TR, Panitchpakdi M, Pullman B, Puri AW, Schmid R, Subramaniam S, Thukral M, Vasquez-Castro F, Dorrestein PC, Wang M[#]
Nature Methods, 2021, doi.org/10.1038/s41592-021-01339-5
- 58.** **Siderophore-mediated zinc acquisition enhances enterobacterial colonization of the inflamed gut.**
(Postdoc)
Zhi H, Behnsen J, Aron A, Subramanian V, Liu J, Gerner R, **Petras D**, Green K, Price S, Camacho J, Hillman H, Tjokrosurjo J, Montaldo N, Hoover E, Treacy-Abarca S, Gilston B, Skaar E, Chazin W, Garneau-Tsodikova S, Lawrenz M, Perry R, Nuccio S, Dorrestein P, Raffatellu M[#]
Nature Communications, 2021, doi.org/10.1038/s41467-021-27297
- 57.** **Native Electrospray-based Metabolomics Enables the Detection of Metal-binding Compounds**
(Postdoc)
Aron A, * **Petras D***, Schmid R, Gauglitz JM, Büttel I, Antelo L, Zhi H, Saak CC, Malarney KP, Thines E, Dutton RJ, Raffatellu M, Dorrestein PC[#]
Nature Chemistry, 2021, doi.org/10.1038/s41557-021-00803-1
- 56.** **Metabolomics and molecular networking to characterize the chemical space of four Momordica plant species**
(PI)
Ramabulana AT, **Petras D**, Madala NE, Tugizimana F[#]
Metabolites, 2021; doi.org/10.3390/metabo11110763
- 55.** **Combined molecular and elemental mass spectrometry approaches for absolute quantification of proteomes. Application to the venomomics characterization of the two species of desert black cobras, *Walterinnesia aegyptia* and *W. morgani***
(PI)
Calvete JJ[#], Pla D, Els J, Carranza S, Damm M, Hempel DF, John EBO, **Petras D**, Heiss P, Nalbantsoy A, Göçmen G, Süßmuth RD, Calderón-Celis F, Jiménez Nosti A, Ruiz Encinar J
Journal of Proteome Research, 2021, doi.org/10.1021/acs.jproteome.1c00608
- 54.** **Chemical Proportionality within Molecular Networks**
(Postdoc)
Petras D^{#,*}, Caraballo-Rodríguez AM*, Jarmusch AK, Molina-Santiago C, Gauglitz GM, Gentry EC, Belda-Ferre P, Romero D, Tsunoda SM, Dorrestein PC, Wang M[#]
Analytical Chemistry, 2021, doi.org/10.1021/acs.analchem.1c01520
- 53.** **Chemical interplay and complementary adaptive strategies toggle bacterial antagonism and co-existence**
(Postdoc)
Molina-Santiago C, Vela-Corcia D, **Petras D**, Diaz-Martinez L, Perez-Lorente A, Sopena-Torres S, Pearson JR, Caraballo-Rodríguez AM, Dorrestein PC, De Vicente A, Romero D[#]
Cell Reports, 2021, 36, 109449
- 52.** **Molecular commerce on coral reefs: Using metabolomics to reveal biochemical exchanges underlying holobiont biology and the ecology of coastal ecosystems**
(Postdoc)
Wegley Kelly L*, Nelson CE*, Aluwihare LI, Arts M, Dorrestein PC, Koester I, Marhaver K, **Petras D**, Quinlan ZAD, Haas AF[#]
Frontiers in Marine Science, 2021, doi.org/10.3389/fmars.2021.630799

- 51.** **Chemical Gradients of Plant Substrates in an *Atta texana* Fungus Garden**
(Postdoc) Caraballo-Rodríguez AM, Puckett SP, Kyle KE, **Petras D**, Da Silva R, Nothias LF, Ernst M, Van der Hooft JJJ, Tripathi A, Wang M, Balunas MJ, Klassen JL#, Dorrestein PC#
mSystems, 2021, doi.org/10.1128/mSystems.00601-21
- 50.** **Ion identity molecular networking for mass spectrometry-based metabolomics in the GNPS environment**
(Postdoc) Schmid R*, **Petras D***, Nothias L*, Wang M, Aron AT, Jagels A, Tsugawa H, Rainer J, Garcia-Aloy M, Dührkop K, Korf A, Pluskal T, Kamenik Z, Jarmusch AK, Caraballo-Rodríguez AM, Weldon K, Nothias-Esposito M, Aksenov AA, Bauermeister A, Albarracin Orio A, Grundmann CO, Vargas F, Koester I, Gauglitz JM, Gentry EC, Kalinina SA, Pendergraft MA, Panitchpakdi MW, Tehan R, Le Gouvellec A, Aleti G, Mannochio Russo H, Arndt B, Hübner F, Hayen H, Zhi H, Raffatellu M, Prather KA, Aluwihare LI, Böcker S, McPhail KL, Humpf H, Karst U, Dorrestein PC#
Nature Communications, 2021, 12:3832, doi.org/10.1038/s41467-021-2395
- 49.** **A Metabolic Choreography of Maize Plants Treated with a Humic Substance-Based Biostimulant under Normal and Starved Conditions**
(PI) Othibeng K, Nephali L, Ramabulana AT, Steenkamp P, Petras D, Kang KB, Opperman H, Huyser J, Tugizimana F#
Metabolites, 2021, doi.org/10.3390/metabo11060403
- 48.** **Three-dimensional molecular cartography of the Caribbean reef-building coral *Orbicella faveolata***
(Postdoc) Little M#, George EE, Arts MGI, Shivak J, Huckeba J, Benler S, Quinlan ZA, Boscaro V, Mueller B, Cobián Güemes AGI, Rojas MI, White B, **Petras D**, Silveira CB, Haas AF, Wegley Kelly L, Vermeij M, Quinn RA, Keeling PJ, Dorrestein PC, Rohwer F, Roach TNF
Frontiers in Marine Science, 2021, 8, 135
- 47.** **A community resource for paired genomic and metabolomic data mining**
(Postdoc) Schorn MA, Verhoeven S, Ridder L, Huber F, Acharya DD, Aksenov A, Aleti G, Amiri Moghaddam J, Aron A, Aziz S, Bauermeister A, Bauman K, Baunach M, Beemelmans C, Beman M, Berlanga-Clavero MV, Blacutt A, Bode H, Boullie A, Brejnrod A, Bugni TS, Calteau A, Cao L, Carrion VJ, Castelo-Branco R, Chanana S, Chase AB, Chevrette MG, Costa-Lotufo L, Crawford JM, Crüsemann M, Currie C, Cuypers B, Dang T, de Rond T, Demko AM, Dittmann E, Dorrestein PC, Du C, Drozd C, Dujardin J, Duncan KR, Dutton RJ, Edlund A, Fewer DP, Garg N, Gauglitz JM, Gentry E, Gerwick L, Glukhov E, Gross H, Guggler M, Guillén Matus DG, Helfrich EJM, Hempel B, Huber F, Hur J, Iorio M, Jensen PR, Kang KB, Kaysser L, Kelleher N, Kim CS, Koester I, König GM, Leao T, Lee SR, Lee Y, Li X, Little J, Metcalf WW, Maloney KN, Männle D, Martin H. C, McAvoy AC, Medema MH, Mohimani H, Molina-Santiago C, Moore BS, Mullowney MW, Muskat M, Nothias LF, O'Neill E, Parkinson EI, **Petras D**, Piel J, Pierce EC, Pires K, Reher R, Ridder L, Rogers S, Romero D, Roper MC, Rust M, Saad H, Saenz C, Sanchez LM, Schorn MA, Sørensen SJ, Sosio M, uessmuth R, Sweeney D, Tahlan K, Tobias N, Trindade-Silva AE, van der Hooft JJJ, van Wezel GP, Verhoeven S, Wang M, Weldon K, Zhang F, Ziemert N, Duncan K, Crüsemann M, Rogers S, Dorrestein PC#, Medema MH#, van der Hooft JJJ#
Nature Chemical Biology, 2021, 10.1038/s41589-020-00724-z
- 46.** **Convergent Evolution of Pain-Inducing Defensive Venom Components in Spitting Cobras**
(Postdoc) Kazandjian TD*, **Petras D***, Robinson SD*, van Thiel J, Greene HW, Arbuckle K, Barlow A, Carter DA, Wouters RM, Whiteley G, Wagstaff SC, Arias AS, Albulescu L-O, von Plettenberg Laing A, Hall C, Heap A, Penrhyn-Lowe S, McCabe CV, Ainsworth S, da Silva RR, Dorrestein PC, Richardson MK, Gutiérrez JM, Calvete JJ, Harrison RA, Vetter I, Undheim EAB, Wüster W, Casewell NR#
Science, 2021, 6527, 386-390
- 45.** **Non-targeted tandem mass spectrometry enables the visualization of organic matter chemotype shifts in coastal seawater**
(Postdoc) **Petras D**#, Minich JJ, Cancelada L, Torres R, Kunselman E, Wang M, White ME, Allen EE, Prather K, Aluwihare LI, Dorrestein PC
Chemosphere, 2021, doi.org/10.1016/j.chemosphere.2020.129450
- 2020**
- 44.** **Organic matter composition at Ocean Station Papa affects its bioavailability, bacterioplankton growth efficiency and the responding taxa**
(Postdoc) Stephens BM, Opalk K, **Petras D**, Liu S, Comstock J, Aluwihare LI, Hansell DA, Carlson CA#
Frontiers in Marine Science, 2020, 10.3389/fmars.2020.590273

- 43. Systematic classification of unknown metabolites using high-resolution fragmentation mass spectra**
(Postdoc) Dührkop K, Nothias LF, Fleischauer M, Reher R, Ludwig M, Hoffmann MA, **Petras D**, Gerwick WH, Rousu J, Dorrestein PC, Böcker S[#]
Nature Biotechnology, 2020, doi.org/10.1038/s41587-020-0740-8
- 42. Multiomics Analysis Provides Insight into the Laboratory Evolution of Escherichia coli toward the Metabolic Usage of Fluorinated Indoles**
(Postdoc) Agostini F, Sinn L, **Petras D**, Schipp CJ, Kubyskhin V, Berger AA, Dorrestein PC, Rappsilber J, Budisa N[#], Kokschi B[#]
ACS Central Science, 2020, doi.org/10.1021/acscentsci.0c00679
- 41. Fungal–bacterial interaction selects for quorum sensing mutants with increased production of natural antifungal compounds**
(Postdoc) Albarracín Orió AG, **Petras D**, Tobares RA, Aksenov AA, Wang M, Juncosa F, Sayago P, Moyano AJ, Dorrestein PC[#], Smania AM[#]
Communications Biology, 2020, 670
- 40. Auto-deconvolution and molecular networking of gas chromatography–mass spectrometry data**
(Postdoc) Aksenov A, Laponogov I, Zhang Z, Doran S, Belluomo I, Veselkov D, Bittremieux W, Nothias-Esposito LF, Nothias M, Dorrestein KN, Maloney BB, Misra AV, Melnik KL, Jones K, Panitchpakdi M, Ernst M, Gonzalez JJ, Van der Hooft M, Carazzone C, Amézquita A, Callewaert C, Morton J, Quinn RA, Bouslimani A, Albarracín-Orió A, **Petras D**, Smania AM, Zink SP, Couvillion MC, Burnet CD, Nicora E, Artaev TO, Metz V, Humston-Fulmer E, Gregor R, Mizrahi MM, Meijler I, Eyal S, Anderson B, Lugan RJ, Dutton R, Guitton PL, Boulch Y, Prevost S, Poirier A, Dervilly G, Fait BL, Bizac A, Sikron N, Song C, Gashu K, Coras R, Guma M, Manasson J, Alseekh JU, Scher DK, Barupal S, Fernie A, Mirnezami AR, Fernie R, Vasiliou V, Schmid R, Knight R, Borisov LN, Kulikova R, Wang M, Hanna G, Dorrestein PC[#], Veselkov K[#]
Nature Biotechnology, 2020, https://doi.org/10.1038/s41587-020-0700-3
- 39. Feature-Based Molecular Networking in the GNPS Analysis Environment**
(Postdoc) Nothias LF^{*}, **Petras D**^{*}, Schmid R^{*}, Dührkop K, Rainer J, Sarvepalli A, Protsyuk I, Ernst M, Tsugawa H, Aicheler F, Aksenov A, Alka O, Allard P, Cachet X, Barsch A, Caraballo-Rodríguez AM, Da Silva RR, Dang T, Nothias-Esposito M, Garg N, Gauglitz JM, Isaac G, Jarmusch AK, Kamenik Z, Kang KB, Kessler N, Koester I, Le Gouellec A, Ludwig M, Martin C, McCall L, McSayles J, Meyer SW, Mohimani H, Morsy M, Moyne O, Neumann S, Neuweger H, Paolini J, Phelan VV, Pluskal T, Rogers S, Shrestha B, van der Hoft JJ, Vargas F, Weldon KC, Witting M, Yang H, Zhang Z, Zubeil F, Kohlbacher O, Böcker S, Alexandrov T, Bandeira N, Wang M[#], Dorrestein PC[#],
Nature Methods, 2020, 17, 905–908
- 38. ZODIAC: database-independent molecular formula annotation using Gibbs sampling reveals unknown small molecules**
(Postdoc) Ludwig M, Nothias LF, Dührkop K, Koester I, Fleischauer M, Hoffmann MA, **Petras D**, Vargas F, Morsy M, Aluwihare L, Dorrestein P, Böcker S[#]
Nature Machine Intelligence, 2020, 2, 629–64
- 37. Repository-scale Co- and Re-analysis of Tandem Mass Spectrometry Data**
(Postdoc) Jarmusch AK, Wang M, Aceves CM, Advani RS, Aguire S, Aksenov AA, Aleti G, Aron AT, Bauermeister A, Bolleddu S, Bouslimani A, Caraballo-Rodríguez AM, Chaar R, Coras R, Elijah EO, Ernst M, Gauglitz JM, Gentry EC, Husband M, Jarmusch SA, Jones II KL, Kamenik Z, Gouellec AL, McCall L, McPhail KL, Meehan MJ, Melnik AV, Menezes RC, Montoya-Giraldo YA, Nguyen NH, Nothias LF, Nothias-Esposito M, Panitchpakdi M, **Petras D**, Quinn R, Sikora N, van der Hooft JJJ, Vargas F, Vrbanac A, Weldon K, Knight R, Bandeira N, Dorrestein PC[#]
Nature Methods, 2020, 17, 901–904
- 36. Reproducible Molecular Networking of Untargeted Mass Spectrometry Data Using GNPS**
(Postdoc) Aron AT, Gentry EC, McPhail KL, Nothias LF, Nothias-Esposito M, Bouslimani A, **Petras D**, Sikora N, Vargas F, van der Hooft JJJ, Ernst M, Kang KB, Aceves CM, Caraballo-Rodríguez AM, Koester I, Weldon KC, Bertrand S, Roullier C, Sun K, Tehan RM, Boya CA, Martin C, Gutiérrez M, Moreno Ulloa A, Tejada Mora JA, Mojica-Flores R, Lakey-Beitia J, Vásquez-Chaves V, Zhang Y, Calderon AI, Tayler N, Keyzers RA, Tugizimana F, Ndlovu N, Aksenov AA, Jarmusch A, Schmid R, Truman AW, Bandeira N, Wang M, Dorrestein PC[#]
Nature Protocols, 2020, 15, 1954–1991
- 35. Mass spectrometry searches using MASST**
(Postdoc) Wang M, Jarmusch AK, Vargas F, Aksenov AA, Gauglitz JM, Weldon K, **Petras D**, Da Silva R, Quinn R, Melnik AV, Van der Hooft JJ, Caraballo-Rodríguez AM, Nothias LF, Aceves CM, Panitchpakdi M, Brown E, Di Ottavio F, Sikora N, Elijah EO,

Labarta-Bajo L, Gentry EC, Shalpour S, Kyle KE, Puckett SP, Watrous JD, Carpenter CS, Bouslimani A, Ernst M, Swafford AD, Zúñiga EI, Balunas MJ, Klassen JL, Loomba R, Knight R, Bandeira N, Dorrestein PC#
Nature Biotechnology, 2020, 38, 23–26.

2019

- 34.** **Solenodon genome reveals convergent evolution of venom in eulipotyphlan mammals**
(PhD)
Casewell NR#, Petras D, Card DC, Suranse V, Mychajliw AM, Richards D, Koludarov I, Albulescu L-O, Slagboom J, Hempel B-F, Ngum NM, Kennerley RJ, Brocca JL, Whiteley G, Harrison RA, Bolton FMS, Debono J, Vonk FJ, Alföldi J, Johnson J, Karlsson EK, Lindblad-Toh K, Mellor IR, Süßmuth RD, Fry BG, Kuruppu S, Hodgson WC, Kool J, Castoe TA, Barnes I, Sunagar K, Undheim EA, Turvey ST
Proceedings of the National Academy of Sciences, 2019, 116, 25745-25755
- 33.** **The emerging field of venom-microbiomics for exploring venom as a microenvironment, and the corresponding Initiative for Venom Associated Microbes and Parasites (iVAMP)**
(Postdoc)
Ul-Hasan S, Rodríguez-Román E, Reitzel AM, Adams RMM, Herzig V, Trim SA, Saviola AJ, Nobile CJ, Stiers EE, Moschos SA, Keiser CN, Petras D, Moran Y, Colston TJ#
Toxicon: X, 2019, 100016
- 32.** **Intact protein mass spectrometry reveals intraspecies variations in venom composition of a local population of *Vipera kaznakovi* in Northeastern Turkey**
(PhD)
Petras D*#, Hempel BF*, Göçmen B, Karis M, Whiteley G, Wagstaff S, Heiss P, Casewell N, Nalbantsoy A#, Süßmuth RD#
Journal of Proteomics, 2019, 199, 31-50
- 31.** **Reproducible, interactive, scalable and extensible microbiome data science using QIIME 2**
(Postdoc)
Bolyen E, Rideout JR, Dillon MR, Bokulich NA, Abnet C, Al-Ghalith GA, Alexander H, Alm EJ, Arumugam M, Asnicar F, Bai Y, Bisanz JE, Bittinger K, Brejnrod A, Brislawn CJ, Brown CT, Callahan BJ, Caraballo-Rodríguez AM, Chase J, Cope E, Da Silva R, Dorrestein PC, Douglas GM, Durall DM, Duvallet C, Edwardson CF, Ernst M, Estaki M, Fouquier J, Gauglitz JM, Gibson DL, Gonzalez A, Gorlick K, Guo J, Hillmann B, Holmes S, Holste H, Huttenhower C, Huttley G, Janssen S, Jarmusch AK, Jiang L, Kaehler B, Kang KB, Keefe CR, Keim P, Kelley ST, Knights D, Koester I, Kosciulek T, Kreps J, Langille MG, Lee J, Ley R, Liu Y, Loftfield E, Lozupone C, Maher M, Marotz C, Martin B, McDonald D, McIver LJ, Melnik AV, Metcalf JL, Morgan SC, Morton J, Naimey AT, Navas-Molina JA, Nothias LF, Orchanian SB, Pearson T, Peoples SL, Petras D, Preuss ML, Pruesse E, Rasmussen LB, Rivers A, Robeson, II MS, Rosenthal P, Segata N, Shaffer M, Shiffer A, Sinha R, Song SJ, Spear JR, Swafford AD, Thompson LR, Torres PJ, Trinh P, Tripathi A, Turnbaugh PJ, Ul-Hasan S, van der Hooft JJ, Vargas F, Vázquez-Baeza Y, Vogtmann E, von Hippel M, Walters W, Wan Y, Wang M, Warren J, Weber KC, Williamson CH, Willis AD, Xu ZZ, Zaneveld JR, Zhang Y, Knight R, Caporaso JG#
Nature Biotechnology, 2019, 37, 852–857
- 30.** **The extracellular matrix protects *Bacillus subtilis* colonies from *Pseudomonas* invasion and modulates plant colonization**
(Postdoc)
Molina-Santiago C, Pearson J, Navarro-García Y, Berlanga-Clavero MV, Caraballo-Rodríguez AM, Petras D, García-Martín LM, Lamon G, Habenstein B, Cazorla FM, De Vicente A, Loquet A, Dorrestein PC, Romero D#
Nature Communications, 2019, 10, 1919
- 29.** **Untargeted Mass Spectrometry-Based Metabolomics Approach Unveils Molecular Changes in Raw and Processed Foods and Beverages**
(Postdoc)
Gauglitz JM, Aceves CM, Aksenov AA, Aleti G, Almaliti J, Bouslimani A, Brown EA, Campeau A, Caraballo-Rodríguez AM, Chaar R, da Silva RR, Demko AM, Di Ottavio F, Elijah E, Ernst M, Ferguson LP, Holmes X, van der Hooft JJ, Jarmusch AK, Jiang L, Kang KB, Koester I, Kwan B, Ni B, Li J, Li Y, Melnik AV, Molina-Santiago C, Oom AL, Panitchpakdi MW, Petras D, Quinn R, Sikora N, Spengler K, Teke B, Tripathi A, Ul-Hasan S, Vargas F, Vrbanac A, Vu AQ, Wang SC, Weldon K, Wilson K, Wozniak JM, Yoon M, Bandeira N, Dorrestein PC#
Food Chemistry, 2019, 302, 125290
- 2018**
- 28.** **The medical threat of mamba envenoming in sub-Saharan Africa revealed by genus-wide analysis of venom composition, toxicity and antivenomics profiling of available antivenoms**
(PhD)
Ainsworth S*, Petras D*, Engmark M, Süßmuth RD, Whiteley G, Albulescu LO, Kazandjian TD, Wagstaff SC, Rowley P, Wüster W, Dorrestein PC, Arias AS, Gutiérrez JM, Harrison RA, Casewell NR, Calvete JJ#
Journal of Proteomics, 2018, 172, 173-189

- 27.** **Transcriptomics-guided bottom-up and top-down venomics of neonate and adult specimens of the arboreal rear-fanged Brown Treesnake, *Boiga irregularis*, from Guam**
(Postdoc) Pla D*, **Petras D***, Saviola AJ*, Modahl CM*, Sanz L, Perez A, Juarez E, Frietze S, Dorrestein PC, Mackessy SP, Calvete JJ#
Journal of Proteomics, 2018, 174, 71–84
- 26.** **Tundrenone: An Atypical Secondary Metabolite from Bacteria with Highly Restricted Primary Metabolism**
(Postdoc) Puri AW*, Mevers E*, Ramadhar TR*, **Petras D**, Liu D, Piel J, Dorrestein PC, Greenberg P, Lidstrom ME, Clardy J#
Journal of the American Chemical Society, 2018, 140, 2002-2006
- 25.** ***Aspergillus niger* is a superior expression host for the production of bioactive fungal cyclodepsipeptides**
(PhD) Boecker S, Grätz S, Kerwat D, Adam L, Schirmer D, Richter L, Schütze T, **Petras D**, Süßmuth RD# and Meyer V#
Fungal Biology and Biotechnology, 2018, 5, 4
- 24.** **Molecular insights into antibiotic resistance: how a binding protein traps albicidin**
(PhD) Rostock L, Janke R, Grätz S, Kerwat D, Von Eckardstein L, **Petras D**, Kunert M, Alings C, Schmitt FJ, Friedrich T, Wahl M, Loll B, Mainz A, Süßmuth RD#
Nature Communications, 2018, 9, 3095
- 2017**
- 23.** **High-resolution liquid chromatography tandem mass spectrometry enables large scale molecular characterization of dissolved organic matter**
(Postdoc) **Petras D**#, Koester I, Da Silva RR, Stephens B, Haas AF, Nelson CE, Kelly LW, Aluwihare LI, Dorrestein PC
Frontiers in Marine Science, 2017, published online, doi: 10.3389/fmars.2017.00405
- 22.** **Meta-mass shift chemical profiling of metabolomes from coral reefs**
(Postdoc) Hartmann AC, **Petras D**, Quinn RA, Protsyuk I, Archer FI, Ransome EJ, Williams GJ, Bailey B, Vermeij MJA, Alexandrov TA, Dorrestein PC, Rohwer FL#
Proceedings of the National Academy of Sciences, 2017, 114, 11685-11690
- 21.** **Total synthesis and biological assessment of novel albicidins discovered by mass spectrometric networking**
(PhD) Von Eckardstein L*, **Petras D***, Dang T, Cociancich S, Sabri S, Grätz S, Kerwat D, Seidel M, Pesic A, Dorrestein PC, Royer M, Weston JB, Süßmuth RD#
Chemistry – A European Journal, 2017, 23, 15316-15321
- 20.** **From single cells to our planet - Recent advances in using mass spectrometry for spatially resolved metabolomics**
(Postdoc) **Petras D***, Jarmusch A*, Dorrestein PC#
Current Opinion in Chemical Biology, 2017, 36, 24–31
- 19.** **Combined venom profiling and cytotoxicity screening of the Radde's mountain viper (*Montivipera raddei*) and Mount Bulgar Viper (*Montivipera bulgardaghica*) with potent cytotoxicity against human A549 lung carcinoma cells**
(PhD) Nalbantsoy A*, Hempel BF*, **Petras D**, Heiss P, Gocmen B, Igcie N, Yildiz MZ, Süßmuth RD#
Toxicon, 2017, 135, 71-83
- 18.** **Protein-species quantitative venomics: looking through a crystal ball**
(Postdoc) Calvete J#, **Petras D**, Calderón-Celis F, Lomonte B, Ruiz Encinar J, Sanz-Medel A
Journal of Venomous Animals and Toxins including Tropical Diseases, 2017, 23:27
- 17.** **Natural Products as Mediators of Disease**
(Postdoc) Garg N*, Luzzatto-Knaan T, Melnik AV, Caraballo-Rodríguez AM, Floros DJ, **Petras D**, Gregor G, Dorrestein PC, Phelan VV*.,#
Natural Products Reports, 2017, 34, 194-219.
- 16.** **Significance estimation for large scale metabolomics annotations by spectral matching**
(Postdoc) Scheubert K*, Hufsky F*, **Petras D**, Wang M, Nothias LF, Duehrkop K, Bandeira N, Dorrestein PC, Boecker S#
Nature Communications, 2017, 8, 1494
- 15.** **Mass spectrometry based molecular 3D-cartography of plant metabolites**
(Postdoc) Floros DJ, **Petras D**, Kaponno CA, Melnik AV, Ling TJ, Knight R, Dorrestein PC#
Frontiers in Plant Science, 2017, published online, doi: 10.3389/fpls.2017.00429

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- 14.** **Mass Spectrometry-Based Visualization of Molecules Associated with Human Habitats**
(Postdoc) Petras D*, Nothias L-F*, Quinn RA*, Alexandrov T, Bandeira N, Bouslimani A, Castro-Falcón G, Chen L, Dang T, Floros DJ, Hook V, Garg, N, Hoffner N, Jiang Y, Kapomo CA, Koester I, Knight R, Leber CA, Ling TJ, Luzzatto-Knaan T, McCall LI, McGrath AP, Meehan MJ, Merritt JK, Mills RH, Morton J, Podvin S, Protsyuk I, Purdy T, Satterfield K, Searles S, Shah S, Shires S, Steffen D, White M, Todoric J, Tuttle R, Wojnicz A, Sapp V, Vargas F, Yang J, Zhang C, Dorrestein PC#
Analytical Chemistry, 2016, 88 (22), 10775–10784
- 13.** **Top-down venomics of the east African green mamba, *Dendroaspis angusticeps*, and the black mamba, *Dendroaspis polylepis*, highlights the complexity of their toxin arsenals**
(PhD) Petras D, Heiss P, Harrison RA, Süßmuth RD, Calvete JJ.
Journal of Proteomics, 2016, 146, 148–164
- 12.** **The O-carbamoyltransferase Alb15 is responsible for the modification of albicidin**
(PhD) Petras D, Kerwat D, Pesic A, Hempel BF, Von Eckardstein L, Semsary S, Arasté J, Marguerettaz M, Cociancich S, Royer M, Süßmuth RD#.
ACS Chemical Biology, 2016, 11, 1198-1204
- 11.** **Leader peptide-free in vitro reconstitution of microviridin biosynthesis enables design of synthetic protease-targeted libraries**
(PhD) Reyna-González E, Schmid B, Petras D, Süßmuth RD, Dittmann E#
Angewandte Chemie International Edition, 2016, 128, 1–5
- 10.** **Deuterium-labeled precursor feeding reveals a new pABA-containing meroterpenoid from the mango pathogen *Xanthomonas citri* pv. *mangiferaeindicae***
(PhD) Saleh H, Petras D, Mainz A, Kerwat D, Nalbantsoy A, Erzurumlu Y, Süßmuth RD#
Journal of Natural Products, 2016, published online, doi: 10.1021/acs.jnatprod.5b01049

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- 9.** **Biochemical dissection of the natural diversification of microcystin provides lessons for synthetic biology of NRPS**
(PhD) Meyer S*, Kehr JC*, Mainz A, Dehm D, Petras D, Süßmuth RD, Dittmann E#
Cell Chemical Biology, 2016, 23 (4), 462–471
- 8.** **Mass spectrometry guided venom profiling and bioactivity screening of the Anatolian Meadow Viper, *Vipera anatolica***
(PhD) Gocmen B*, Heiss P*, Petras D, Nalbantsoy A, Süßmuth RD#
Toxicon, 2015, 107, 163-174
- 7.** **Minimum Information about a Biosynthetic Gene cluster**
(PhD) Medema MH#, Kottmann R, Yilmaz P, Cummings M, Biggins JB, Blin K, de Bruijn I, Chooi YH, Claesen J, Coates RC, Cruz-Morales P, Duddela S, Düsterhus S, Edwards DJ, Fewer DP, Garg N, Geiger C, Gomez-Escribano JP, Greule A, Hadjithomas M, Haines AS, Helfrich EJ, Hillwig ML, Ishida K, Jones AC, Jones CS, Jungmann K, Kegler C, Kim HU, Kötter P, Krug D, Masschelein J, Melnik AV, Mantovani SM, Monroe EA, Moore M, Moss N, Nützmänn HW, Pan G, Pati A, Petras D, Reen FJ, Rosconi F, Rui Z, Tian Z, Tobias NJ, Tsunematsu Y, Wiemann P, Wyckoff E, Yan X, Yim G, Yu F, Xie Y, Aigle B, Apel AK, Balibar CJ, Balskus EP, Barona-Gómez F, Bechthold A, Bode HB, Borriss R, Brady SF, Brakhage AA, Caffrey P, Cheng YQ, Clardy J, Cox RJ, De Mot R, Donadio S, Donia MS, van der Donk WA, Dorrestein PC, Doyle S, Driessen AJ, Ehling-Schulz M, Entian KD, Fischbach MA, Gerwick L, Gerwick WH, Gross H, Gust B, Hertweck C, Höfte M, Jensen SE, Ju J, Katz L, Kaysser L, Klassen JL, Keller NP, Kormanec J, Kuipers OP, Kuzuyama T, Kyrpidis NC, Kwon HJ, Lautru S, Lavigne R, Lee CY, Linqun B, Liu X, Liu W, Luzhetskyy A, Mahmud T, Mast Y, Méndez C, Metsä-Ketelä M, Micklefield J, Mitchell DA, Moore BS, Moreira LM, Müller R, Neilan BA, Nett M, Nielsen J, O'Gara F, Oikawa H, Osbourn A, Osburne MS, Ostash B, Payne SM, Pernodet JL, Petricek M, Piel J, Ploux O, Raaijmakers JM, Salas JA, Schmitt EK, Scott B, Seipke RF, Shen B, Sherman DH, Sivonen K, Smanski MJ, Sosio M, Stegmann E, Süßmuth RD, Tahlan K, Thomas CM, Tang Y, Truman AW, Viaud M, Walton JD, Walsh CT, Weber T, van Wezel GP, Wilkinson B, Willey JM, Wohlleben W, Wright GD, Ziemert N, Zhang C, Zotchev SB, Breitling R, Takano E, Glöckner FO
Nature Chemical Biology, 2015; 11(9):625-631
- 6.** **What makes *Xanthomonas albilineans* unique amongst xanthomonads?**
(PhD) Pieretti I, Pesic A, Petras D, Royer M, Süßmuth RD, Cociancich S#
Frontiers in Plant Science. 2015, 6:289. doi:10.3389/fpls.2015.00289

5. **Venom proteomics of Indonesian king cobra, *Ophiophagus hannah*: integrating top-down and bottom-up approaches**
(PhD)
Petras D#, Heiss P, Süßmuth RD and Calvete JJ#
Journal of Proteome Research, 2015, 14 (6): 2539–2556
4. **The gyrase inhibitor albicidin consists of para-aminobenzoic acids and cyanoalanine**
(PhD)
Cociancich S*, Pesic A*, Petras D*, Uhlmann S, Kretz J, Schubert V, Vieweg L, Duplan S, Marguerettaz M, Noëll J, Pieretti I, Hügelland M, Kemper S, Mainz A, Rott P, Royer M#, Süßmuth RD#
Nature Chemical Biology, 2015, 11 (3):195-197

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3. **Hydrolysis of Fatty Acid Esters by Candida Antarctica Lipase B (Novozym435) Dissolved in Anhydrous Triethylamine**
(Undergrad)
Braner M, Zielonka S, Grzeschik J, Krah S, Lieb S, Petras D, Wagner X, Ahmed I, Hüttenhain SH#
ChemCatChem, 2012; 12 (4), 2050–2054
2. **Snake venomomics of African spitting cobras: toxin composition and assessment of congeneric cross-reactivity of the pan-African EchiTAB-Plus-ICP antivenom by antivenomics and neutralization approaches**
(Master)
Petras D, Sanz L, Segura A, Herrera M, Villalta M, Solano D, Vargas M, León G, Warrell DA, Theakston RD, Harrison RA, Durfa N, Nasidi A, Gutiérrez JM, Calvete JJ#
Journal of Proteome Research, 2011; 10(3):1266-80
1. **Comparative high-speed profiling of carboxylic acid metabolite levels by differential isotope-coded MALDI mass spectrometry**
(Undergrad)
Koulman A, Petras D, Narayana VK, Wang L, Volmer DA#
Analytical Chemistry, 2009; 81 (18):7544-51

Seminars and Guest Lectures

20. **Native Metabolomics enables the functional analysis of chemical interactions in microbial communities**
Petras D
University of Vienna, Department of Chemistry, Research Seminar (online) 2022, Vienna, Austria
19. **Planetary Scale Metabolomics - Linking Chemotypes to Ecosystems**
Petras D
Arcadia Research Institute, Science Seminar (online), 2021, Berkley, USA
18. **Planetary Scale Metabolomics - Linking Chemotypes to Ecosystems**
Petras D
European Molecular Biology Laboratory, Planetary Biology Seminar (online), 2021, Heidelberg, Germany
Recording: <https://www.youtube.com/watch?v=mKyOkqGGj1U>
17. **How Natural Products Shape Ecosystems: A Functional Metabolomics Approach to Understand and Utilize Microbial Communities**
Petras D
University of Tuebingen, TRR261 Colloquium (online), 2020, Tuebingen, Germany
16. **How Natural Products Shape Ecosystems - A Functional Metabolomics Approach to Understand and Utilize Microbial Communities**
Petras D
University of Vienna, Department of Pharmacognosy, Research Seminar (online) 2020, Vienna, Austria
15. **Decomplexing Dissolved Organic Matter - Linking Exo-Metabolomes to Ecosystems**
Petras D
Technical University Munich, Chemistry Department Research Seminar (online), 2020, Munich, Germany
14. **How Natural Products Shape Ecosystems - Linking Microbial Communities to Exo-Metabolome**
Petras D
University Marburg, Pharmacy Department Research Seminar (online), 2020, Marburg, Germany
13. **Decomplexing Dissolved Organic Matter - Linking Exo-Metabolomes to Ecosystems**
Petras D
Leibnitz Institute for Freshwater Ecology, Research Symposium (online), 2020, Berlin, Germany
12. **How do Small Molecules Shape Ecosystems? - Illuminating the Ocean's Community Metabolome**
Petras D
University of California Davis, ETOX Science Seminar (online), 2020, Davis, USA
11. **How do Natural Products Shape Ecosystems? - Illuminating the Ocean's Community Metabolome**
Petras D
Scripps Institution of Oceanography, University of California San Diego, 2020, San Diego, USA
10. **Decomplexing Dissolved Organic Matter: Linking Exometabolomes to Ecosystems**
Petras D
University of California Santa Barbara, Marine Science Seminar, 2020, Santa Barbara, USA
9. **The Chemistry of Marine Microbial Communities - Linking Exo-Metabolomes to Ecosystems**
Petras D
Scripps Research Institute, 2019, San Diego, USA
8. **Planetary Scale Metabolomics - Creating a Molecular Inventory of the Pacific Ocean**
Petras D
Humboldt-Universität Berlin, Chemistry Department Research Seminar, 2018, Berlin, Germany
7. **Planetary Scale Metabolomics - Creating a Molecular Inventory of the Pacific Ocean**
Petras D
Nelson Mandela University, 2018, Port Elizabeth, South Africa
6. **Planetary Scale Metabolomics - Creating a Molecular Inventory of the Pacific Ocean**
Petras D
Rhodes University, 2018, Grahamstown, South Africa

5. **Marine Environmental Metabolomics – Molecular Imaging of Dissolved Organic Matter**
Petras D
Schmidt Ocean Institute, Coral Reef Health Planning Workshop, 2018, San Diego, USA
4. **Marine Environmental Metabolomics - Spatial Imaging of a Phytoplankton Bloom in the California Current Ecosystem**
Petras D
Royal Netherlands Institute for Sea Research, 2018, Texel, The Netherlands
3. **Planetary Scale Metabolomics - Molecular Imaging of the Pacific Ocean**
Petras D
Technische Universität Berlin, 2018, Berlin, Germany
2. **Environmental Metabolomics of an Algal Bloom in the California Current Ecosystem**
Petras D
University of California San Diego, Skaggs Seminar Series, 2017, San Diego, USA
1. **Top-down venomomics – An introduction to proteoform-resolved venom profiling**
Petras D
Pre-congress, 18th World Congress of the International Society on Toxinology 2015, Oxford, UK

Conference Contributions

Oral Presentations (as presenting author)

20. **Native Metabolomics - High-Throughput Screening of Protein-Metabolite Binding from Crude Extracts in the Mass Spectrometer**
Reher R, Aron A, Fajtova P, Dorrestein PC, O'Donoghue A, Gerwick WH, **Petras D**
(Selected Talk) American Society of Mass Spectrometry – Annual Conference, 2021, Philadelphia, USA
Recording: <https://www.youtube.com/watch?v=jGMDA3craqc>
19. **The GNPS Dashboard Enables Interactive Analysis of Mass Spectrometry Data in the Web Browser**
Petras D, Phelan V, Dorrestein PC, Wang M
(Selected Talk) American Society of Mass Spectrometry – Annual Conference, 2021, Philadelphia, USA
Recording: <https://www.youtube.com/watch?v=alzsC982ZGU>
18. **Mapping protein-metabolite interaction in complex systems - Towards experimental functional metabolomics**
Petras D
(Invited Talk), TRR CellMap Symposium, 2021, Bensberg, Germany
17. **Native Metabolomics – A Functional View of Natural Products in Marine Microbial Communities**
Petras D, Aron A, Reher R, Aluwihare L, Dorrestein PC
(Selected Talk), SoCalMS Meeting (online), 2020, San Diego, USA
16. **The Chemistry of Marine Microbial Communities – Linking Exometabolomes to Ecosystems**
Petras D
(Invited Talk), XIV Congreso Argentino de Microbiología General 2019, Buenos Aires, Argentina
15. **Large-Scale Top-Down Venomomics - A Bird's-Eye View of Genus Wide Venom Composition**
Petras D
(Invited Talk) 20th World Congress of the International Society on Toxinology, 2019, Buenos Aires, Argentina
14. **Decomplexing Dissolved Organic Matter: Linking Exometabolomes to Ecosystems**
Petras D
(Invited Talk) Gordon Research Conferences – Chemical Oceanography, 2019, Holderness, USA
13. **Visualization of the chemical interaction of marine microbial communities**
Petras D, Koester I, Minich J, Da Silva RR, Ernst M, Stephens B, Haas AF, Nelson CE, Kelly LW, Knight R, Aluwihare LI, Dorrestein PC
(Invited Talk), Natural Product Symposia Panama, 2019, Panama City, Panama
12. **Planetary Scale Metabolomics - Molecular Imaging of the Pacific Ocean**
Petras D, Koester I, Minich J, Da Silva R, Ernst M, Stephens B, Haas AF, Nelson C, Kelly LW, Knight R, Aluwihare L, Dorrestein PC
(Invited Talk) American Association for the Advancement of Science – Pacific Conference, 2018, Pomona, USA

11. **Planetary Scale Metabolomics - Molecular Imaging of the Pacific Ocean**
Petras D, Koester I, Minich J, Da Silva R, Ernst M, Stephens B, Haas A, Nelson C, Kelly LW, Knight R, Aluwihare L, Dorrestein PC
(Selected Talk) American Society of Mass Spectrometry – Annual Conference, 2018, San Diego, USA
10. **Planetary Scale Metabolomics - Molecular Imaging of a Phytoplankton Bloom in the California Current Ecosystem**
Petras D, Stephens B, Rivera SR, Dorrestein PC, Aluwihare LI
(Selected Talk) 1st European Mass Spectrometry Conference, 2018, Saarbrücken, Germany
9. **Molecular Imaging of the Community Metabolome of a Phytoplankton Bloom in the California Current Ecosystem**
Petras D, Stephens B, Rivera SR, Dorrestein PC, Aluwihare LI
(Selected Talk) Ocean Science Meeting, 2018, Portland, USA
8. **Molecular Imaging of a Phytoplankton Bloom in the California Current Ecosystem**
Petras D, Stephens BM, Rivera SR, Ernst M, Dorrestein PC, Aluwihare LI
(Selected Talk) UC San Diego Postdoc Research Symposium, 2017, San Diego, USA
7. **Development of an high resolution LC-MS/MS workflow for the high throughput analysis of dissolved metabolites in marine environments**
Petras D, Koester I, Stephens B, Da Silva RR, Aluwihare L, Dorrestein PC
(Selected Talk) Association for the Sciences of Limnology and Oceanography, 2017, Honolulu, Hawaii, USA
6. **Top-down mass spectrometry paves the way for a proteoform resolved high-throughput analysis of snake venoms**
Petras D, Süßmuth RD, Dorrestein PC, Calvete JJ
(Invited Talk) 8th World Congress of Herpetology (WCH8), 2016, Hangzhou, China
5. **Pushing the limits - Integrating Top-down mass spectrometry into snake venomomics**
Petras D, Süßmuth RD, Calvete JJ
(Selected Talk) 18th World Congress of the International Society on Toxinology, 2015, Oxford, UK
4. **The biosynthesis of albicidins**
Petras D, Hempel B, Kerwart D, Mainz A, Cociancich S, Royer M, Süßmuth RD
(selected Talk) 2nd European Conference on Natural Products, 2015, Frankfurt, Germany
3. **Next generation venomomics – Integrating Top-down mass spectrometry as a fast and accurate tool for the profiling of snake venoms**
Petras D, Süßmuth RD, Calvete JJ
(Selected Talk), United States Human Proteome Organization - Annual Conference, 2015, Tempe, USA
2. **High resolution mass spectrometry of intact proteins - A precise tool for the rapid venom profiling of snakes**
Petras D
(Selected Talk), COST CM1004 Spring Meeting, 2014, Cambridge, UK
1. **Top-down venomomics**
Petras D, Süßmuth RD, Calvete JJ
(Selected Talk), Human Proteome Organization - Annual Conference, 2014, Madrid, Spain

Poster Presentations (as presenting author)

7. **Non-targeted tandem-mass spectrometry enables the tracking of anthropogenic pollutants from coastal seawater to sea spray aerosol**
Petras D, Pendergraft M, Belda-Ferre P, Morris C, Mitts BA, Aron A, Minich J, Knight R, Aluwihare L, Dorrestein PC, Prather KA
Ocean Science Meeting 2020, San Diego, California, USA
6. **Spatial Metabolomics visualizes the chemical interaction between *Bacillus subtilis* and the microbial community in the corn rhizosphere**
Petras D, Minich J, Lepine GJ, Albarracín A, Knight R, Dorrestein PC
Keystone Symposium on Natural Products and Synthetic Biology, 2018, Olympic Valley, California, USA
5. **The biosynthesis of albicidin**
Petras D, Mainz A, Cociancich S, Royer M, Süßmuth RD
10th Status Seminar Chemical Biology, 2015, Frankfurt, Germany

4. **Top-down venomics - High resolution mass spectrometry as a fast and accurate tool for the profiling of snake venoms**
Petras D, Süssmuth RD, Calvete JJ
International Mass Spectrometry Conference, 2014, Geneva, Switzerland
3. **Venomic profiling of the Caucasus viper by high resolution mass spectrometry**
Petras D, Nalbantsoy A, Igci N, Gocmen B and Süssmuth RD
DGMS Annual Meeting, 2014, Frankfurt, Germany
2. **Venomic profiling of *Vipera kaznakovi* by LC-HR-MS**
Petras D, Nalbantsoy A, Igci N, Gocmen B and Süssmuth RD
Treffen der Fachgruppe FT-MS und hochauflösende Massenspektrometrie der DGMS, 2013, Heidelberg, Germany
1. **Development of a stable isotope-tag based labeling method for the relative quantification of proteins from snake venoms**
Petras D, Hüttenhain SH and Calvete JJ
17th Congress of the European Section of the International Society on Toxinology, 2011, Valencia, Spain